Predictors of Tobacco Use among Adolescents in Florida, 1998–1999

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INTRODUCTION   Tobacco use is the single leading preventable cause of death in the United States (McGinnis and Foege, 1993) and is estimated to cost the state of Florida over $2 billion annually in direct health care expenditures (CDC, 1996). In August of 1997, the state of Florida settled its lawsuit against the tobacco industry for claims regarding tobacco-related health care costs. As part of the $11.3 billion settlement, the state appropriated $23 million in fiscal year (FY) 1997/1998 and $70 million in FY 1998/1999. Settlement monies were used to fund the Florida Pilot Program on Tobacco Control, designed to prevent and reduce tobacco use among Florida youths. To determine prevalence rates of cigarette, cigar, and smokeless tobacco (chewing tobacco or snuff) use for Florida public middle- and high-school students, the Florida Department of Health conducted the Florida Youth Tobacco Survey (FYTS) in February, 1998 and again in February, 1999. The purpose of these surveys was to establish baseline parameters for, and to monitor the progress of, the Pilot Program, which initiated prevention activities in April 1998. The Florida Pilot Program on Tobacco Control targets youths under age 18 and has four program components, each of which implements a variety of activities designed to combat youth tobacco use and lower tobacco's attractiveness to youths. The program's centerpiece is a youth-oriented, counter-marketing media campaign developed to reduce the allure of smoking. Community partnerships in all 67 Florida counties, an education and training initiative, and an enforcement arm comprise the other program components. The Florida Youth Tobacco Survey is a key measure of the program's effectiveness.

This chapter describes tobacco use patterns among Florida adolescents and also discusses factors associated with tobacco use; it summarizes changes in tobacco use over the 1-year time period between 1998 and 1999 by sex, race/ethnicity, grade level, and geographic region (Bauer *et al.*, 1999).

METHODS   The 1998 Florida Youth Tobacco Survey (FYTS) used a two-stage cluster sample design within each of seven geographic regions (selecting schools within regions and classrooms within schools). It sampled middle (grades 6-8) and high (grades 9-12) schools separately to obtain a representative sample of 11,865 public middle school and 10,675 public high school students in grades 6 through 12. The 1999 survey was conducted in 242 of the 255 schools that participated in the 1998 survey sample, among a representative sample of 11,724 middle and 9,254 high school students. The middle school response rates for 1998 and 1999 were 97 percent and 93 percent, respectively; the student response rates were 82 percent and 88 percent,

respectively; and the overall response rates were 80 percent and 82 percent, respectively. For the high school surveys, school response rates for 1998 and 1999 were 95 percent and 89 percent, respectively; the student response rates were 76 percent and 79 percent, respectively; and the overall response rates were 72 percent and 70 percent, respectively. Data were weighted to provide estimates generalizable to all public school students in grades 6-12 in the seven regions and the state. Survey data were analyzed, and point estimates and odds ratios were generated using the Statistical Analysis System (SAS). Variance estimates and 95 percent confidence limits were calculated using the Software for Statistical Analysis of Correlated Data (SUDAAN).

Students completed a self-administered questionnaire that included questions about prevalence of tobacco use (cigarette, cigar, and smokeless tobacco), exposure to environmental tobacco smoke, minors' access to tobacco products, enforcement of tobacco purchasing and possession laws, knowledge and attitudes about tobacco use, media and advertising, tobacco use prevention school curricula, and student demographic and other information. Eight reports on the 1998 survey results are available from the Florida Department of Health (see the Florida Department of Health web site at http://www.state.fl.us/tobacco and click on "research"). Current cigarette, cigar, and smokeless tobacco users were students who reported product use on 1 or more of the 30 days preceding the survey.

RESULTS

Changes in Receptivity to Tobacco Company Promotions

One of the goals of the Florida Tobacco Pilot Program is to change attitudes about and de-glamorize tobacco use. Adolescents' attitudes toward tobacco and their perceptions of the glamour associated with tobacco products are measured by two questions about whether a student has bought or received anything in the past 12 months with a tobacco company name or picture on it, and whether the student would use or wear such a product. The "receptivity" scale, calculated from these questions, quantifies students' receptivity to tobacco company promotions and has a range of 1 to 3, with 1 being less receptive and 3 being more receptive. Among middle school students, mean scale scores on the receptivity to tobacco company promotions index declined by 10 percent, from 2.0 in 1998 to 1.8 in 1999. Among high school students, mean scores declined by 20 percent, from 2.0 in 1998 to 1.6 in 1999. Declines in receptivity were evident (and of similar magnitude) across all racial/ethnic groups (p < 0.05 for all comparisons).

Changes in Prevalence of Current Tobacco Use

Prevalence of current cigarette use among middle school students declined from 18.5 percent in 1998 to 15.0 percent in 1999 (p < 0.0001) (Table 7-1). Among high school students, prevalence of current cigarette use declined from 27.4 percent in 1998 to 25.2 percent in 1999 (p < 0.02) (Table 7-2). Among middle school students, declines in current cigarette use were substantial and significant for both males and females; however, among high school students, the decline was statistically significant only among females. Among both middle and high school students, the declines were most pronounced among non-Hispanic White students. Current cigarette use declined from 22.0 percent in 1998 to 16.1 per-

Table 7-1

Percentage of Florida Public Middle School Students who Used Cigarettes, Cigars, or Smokeless Tobacco by Sex, Race/Ethnicity, and Grade: Florida Youth Tobacco Survey, 1998 and 1999

	Current Cigarette Use*			Current Cigar Use**			Current Smokeless Tobacco Use***		
Sample Size (*N*):	1998 (11,031)	1999 (10,268)		1998 (11,535)	1999 (10,890)		1998 (11,633)	1999 (10,919)	
Category	% CI	% CI	p	% CI	% CI	p	% CI	% CI	p
Sex									
Female	18.1 (±1.5)	14.9 (±1.8)	0.0040	10.3 (±1.0)	9.4 (±1.4)	0.2600	4.4 (±0.6)	2.8 (±0.6)	0.0001
Male	18.9 (±1.7)	15.0 (±1.4)	0.0001	17.6 (±1.3)	14.2 (±1.3)	0.0002	9.3 (±1.1)	6.8 (±0.9)	0.0010
Race / Ethnicity[†]									
White, non-Hisp.	22.0 (±1.8)	16.1 (±1.7)	0.0000	14.5 (±1.2)	11.1 (±1.4)	0.0001	7.6 (±1.1)	4.8 (±0.8)	0.0000
Black, non-Hisp.	9.5 (±1.4)	8.5 (±1.5)	0.3400	13.0 (±1.6)	12.3 (±1.9)	0.5500	5.3 (±1.1)	4.4 (±1.4)	0.2700
Hispanic	16.8 (±2.1)	16.1 (±2.6)	0.5100	13.6 (±1.7)	12.9 (±2.3)	0.5300	5.5 (±1.3)	3.6 (±1.1)	0.0200
Grade Level									
6th	10.5 (±1.4)	8.0 (±1.3)	0.0100	7.8 (±0.9)	6.7 (±1.2)	0.1600	6.0 (±1.0)	3.9 (±0.9)	0.0004
7th	19.3 (±2.1)	16.6 (±2.5)	0.0700	14.2 (±1.7)	11.4 (±1.8)	0.0200	7.0 (±1.2)	5.2 (±1.0)	0.0100
8th	25.0 (±2.3)	19.5 (±2.5)	0.0005	19.5 (±1.7)	16.8 (±2.2)	0.0600	7.1 (±1.1)	4.8 (±1.0)	0.0020
Total	18.5 (±1.4)	15.0 (±1.3)	0.0000	14.1 (±1.0)	11.9 (±1.1)	0.0020	6.9 (±0.7)	4.9 (±0.6)	0.0000

Note: CI = 95% confidence interval.
 * Smoked cigarettes on ≥1 of the 30 days preceding the survey.
 ** Smoked cigars on ≥1 of the 30 days preceding the survey.
*** Used smokeless tobacco on ≥1 of the 30 days preceding the survey.
 † Numbers of other racial/ethnic groups were too small for meaningful analysis.

Table 7-2

Percentage of Florida Public High School Students who Used Cigarettes, Cigars, or Smokeless
Tobacco by Sex, Race/Ethnicity, and Grade: Florida Youth Tobacco Survey, 1998 and 1999

| | Current Cigarette Use* | | | | | Current Cigar Use** | | | | | Current Smokeless Tobacco Use*** | | | | |
| | 1998 (9,991) | | 1999 (9,991) | | | 1998 (10,473) | | 1999 (9,099) | | | 1998 (10,202) | | 1999 (9,041) | | |
Sample Size (*N*): Category	%	CI	%	CI	p	%	CI	%	CI	p	%	CI	%	CI	p
Sex															
Female	28.3	(±1.9)	25.9	(±2.0)	0.0400	14.1	(±1.2)	14.1	(±1.6)	0.9600	2.1	(±0.5)	2.4	(±0.7)	0.5900
Male	26.5	(±1.9)	24.6	(±2.4)	0.1600	27.0	(±1.8)	24.7	(±1.9)	0.0800	11.2	(±1.6)	10.3	(±1.6)	0.2600
Race / Ethnicity[†]															
White, non-Hisp.	34.8	(±1.8)	31.3	(±2.0)	0.0200	22.7	(±1.6)	21.4	(±2.2)	0.2400	8.7	(±1.5)	8.0	(±1.7)	0.3200
Black, non-Hisp.	9.8	(±1.5)	9.4	(±1.9)	0.6100	17.1	(±2.1)	14.8	(±1.9)	0.0900	3.5	(±1.1)	2.8	(±0.7)	0.2400
Hispanic	24.8	(±2.6)	24.2	(±2.8)	0.7000	17.9	(±2.0)	18.5	(±2.4)	0.8200	2.9	(±0.8)	4.4	(±1.2)	0.0700
Grade Level															
9th	25.9	(±2.6)	23.3	(±2.8)	0.1700	19.3	(±2.3)	18.8	(±2.7)	0.7800	6.5	(±1.4)	6.8	(±1.7)	0.7400
10th	25.5	(±2.8)	24.4	(±2.8)	0.5000	19.5	(±2.2)	19.1	(±2.2)	0.7600	7.0	(±1.7)	5.9	(±1.5)	0.3800
11th	29.8	(±2.5)	27.0	(±2.4)	0.0800	23.2	(±2.5)	19.2	(±2.2)	0.0100	7.3	(±1.4)	5.3	(±1.1)	0.0200
12th	29.8	(±2.9)	27.8	(±4.0)	0.3200	21.5	(±2.7)	21.2	(±2.8)	0.8600	6.4	(±1.3)	7.1	(±1.7)	0.4700
Total	27.4	(±1.6)	25.2	(±1.8)	0.0200	20.7	(±1.2)	19.5	(±1.5)	0.1400	6.7	(±1.0)	6.4	(±0.9)	0.2200

Note: CI = 95% confidence interval.
  * Smoked cigarettes on ≥1 of the 30 days preceding the survey.
 ** Smoked cigars on ≥1 of the 30 days preceding the survey.
*** Used smokeless tobacco on ≥1 of the 30 days preceding the survey.
 † Numbers of other racial/ethnic groups were too small for meaningful analysis.

cent in 1999 (p < 0.0001) among non-Hispanic White middle school students, and from 34.8 percent in 1998 to 31.1 percent in 1999 among non-Hispanic White high school students (p < 0.02). There was no statistically significant change in the prevalence of current cigarette use among non-Hispanic Black or Hispanic students at the middle or high school level. Prevalence of cigarette use in these groups was lower than among non-Hispanic Whites in both 1998 and 1999.

Current cigar use declined significantly only among middle school students. Among this group, current cigar use declined from 14.1 percent in 1998 to 11.9 percent in 1999 (p < 0.0002). This overall decline was almost entirely accounted for by the decline among males, from 17.6 percent in 1998 to 14.2 percent in 1999. Among racial/ethnic groups at the middle school level, the decline in current use of cigars was statistically significant only for non-Hispanic White students.

Current smokeless tobacco use declined among middle school students, among whom 6.9 percent were current users in 1998 and 4.9 percent were current users in 1999. The decline was evident in both male and female middle school students and among non-Hispanic White and Hispanic middle school students. Students at each grade level in middle school were significantly less likely to use smokeless tobacco products in 1999 than in 1998. Current use of smokeless tobacco products remained unchanged among high school students from 1998 to 1999.

Figures 7-1 and 7-2 show the change in current cigarette use from 1998 to 1999 for middle and high school students, respectively, by racial/ethnic group. Among both middle and high school students, statistically significant declines in current cigarette use were evident among non-Hispanic White students. No significant change in current cigarette use was observed among African American or Hispanic students. Among middle school students, statistically significant declines in cigar use were evident only among non-Hispanic White students, and declines for smokeless tobacco use were evident among both non-Hispanic White students and Hispanic students. Among high school students, no change in current cigar or smokeless tobacco use was observed over the 1-year time period.

Figures 7-3 through 7-5 show prevalence of current cigarette, cigar, and smokeless tobacco use, respectively, by grade, for 1998 and 1999. Although the 1998 and 1999 surveys were cross-sectional, the same schools (but not necessarily the same classrooms) were surveyed in each year. Thus, for example, the 7th grade students in 1999 were in the 6th grade in 1998. When viewed from this perspective, an estimate of initiation rates over the 1-year time period can be calculated. In 1998, 10.5 percent of 6th grade students had used cigarettes in the past 30 days. By 1999, 16.6 percent of 7th grade students had used cigarettes in the past 30 days. This interval from 6th to 7th grade is the only interval where an increase in cigarette use in the past 30 days was observed. Comparing grade "n" in 1999 to grade "n–1" in 1998 shows no similar increase (except marginally in the transition from 10th to 11th grade). Viewing current cigar and smokeless tobacco use in the same manner, increases across grade levels from 1998 to 1999 in

Figure 7-1
Percentage of Current Cigarette Users: Public Middle School Students who Smoked on 1 or More of the Previous 30 Days—Florida Youth Tobacco Survey
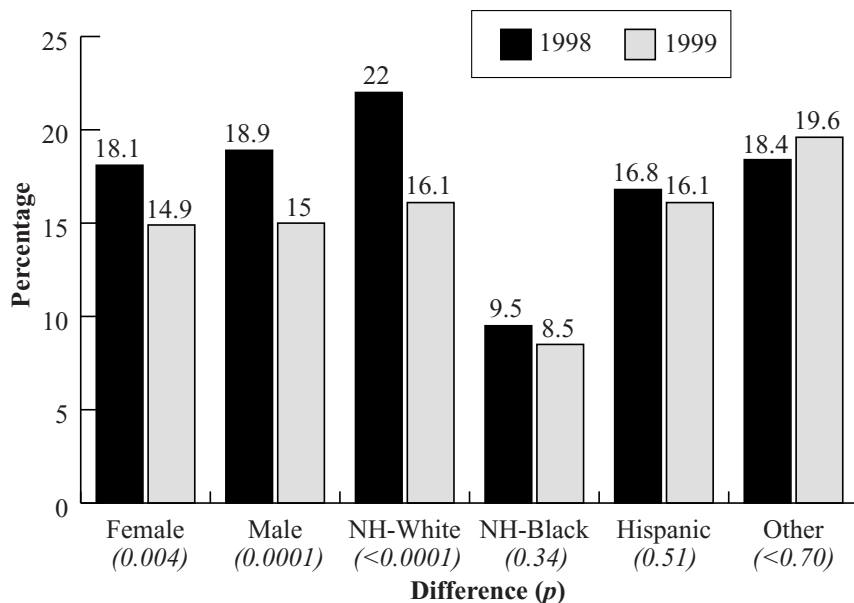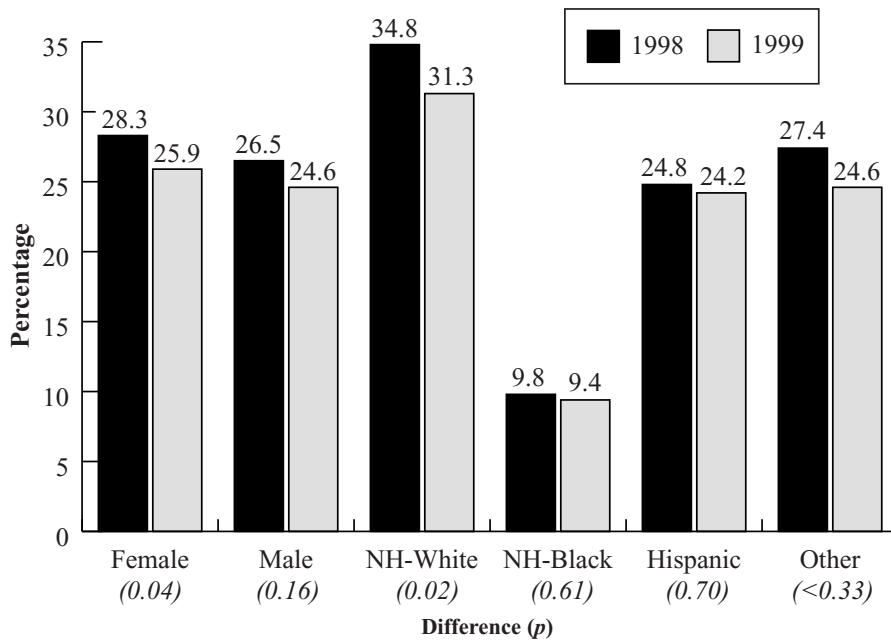

Figure 7-2
Percentage of Current Cigarette Users: Public High School Students who Smoked on 1 or More of the Previous 30 Days—Florida Youth Tobacco Survey

Source for both figures: Florida Department

Figure 7-3
**Current Cigarette Use by Grade: Public School Students who Used Cigarettes on
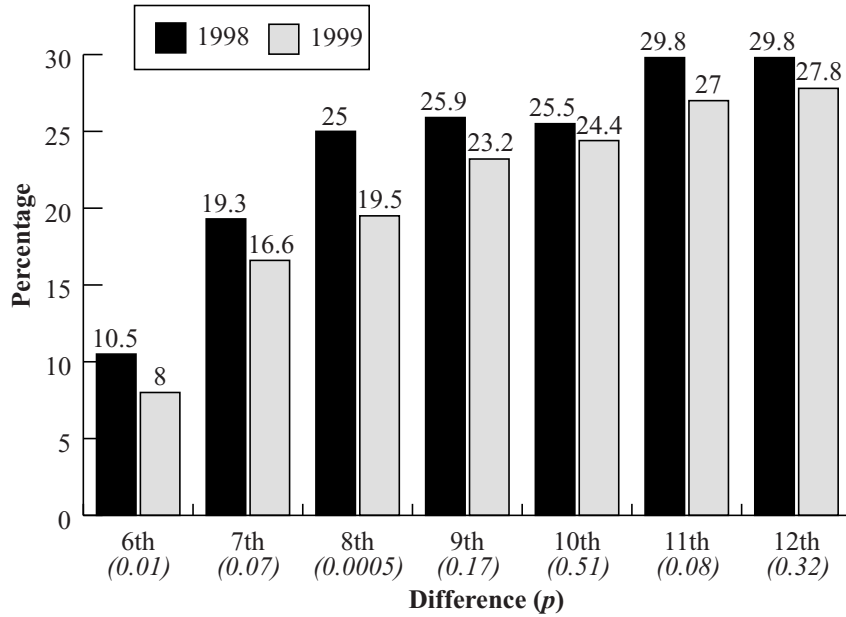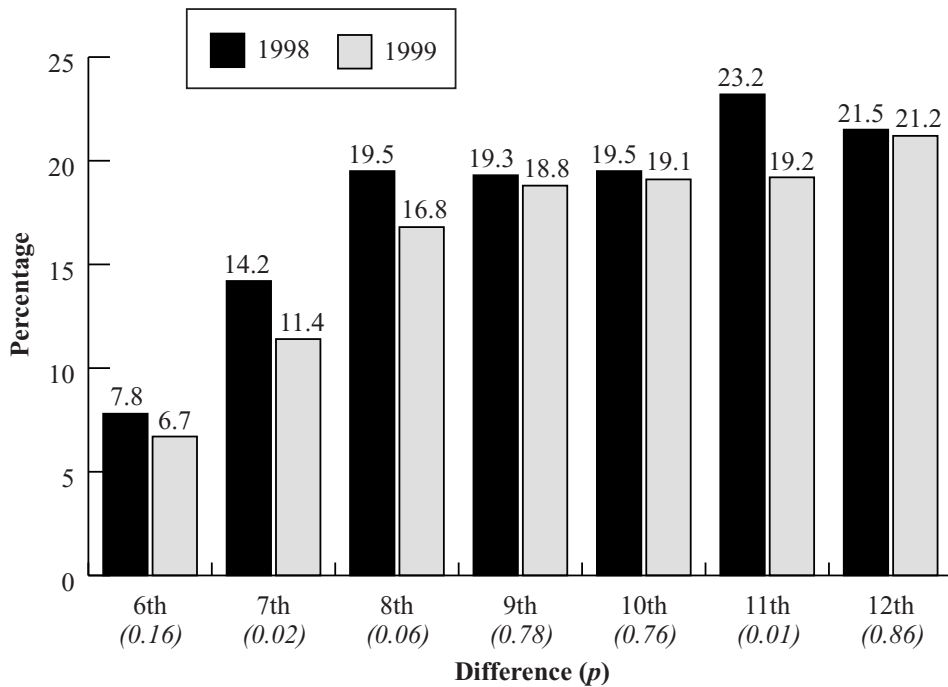1 or More of the Past 30 Days—Florida Youth Tobacco Survey**

Figure 7-4
**Current Cigar Use by Grade: Public School Students who Used Cigars on
1 or More of the Past 30 Days—Florida Youth Tobacco Survey**

Source for both figures: Florida Department

Figure 7-5

Current Smokeless Tobacco Use by Grade: Public School Students who Used Smokeless Tobacco on 1 or More of the Past 30 Days—Florida Youth Tobacco Survey
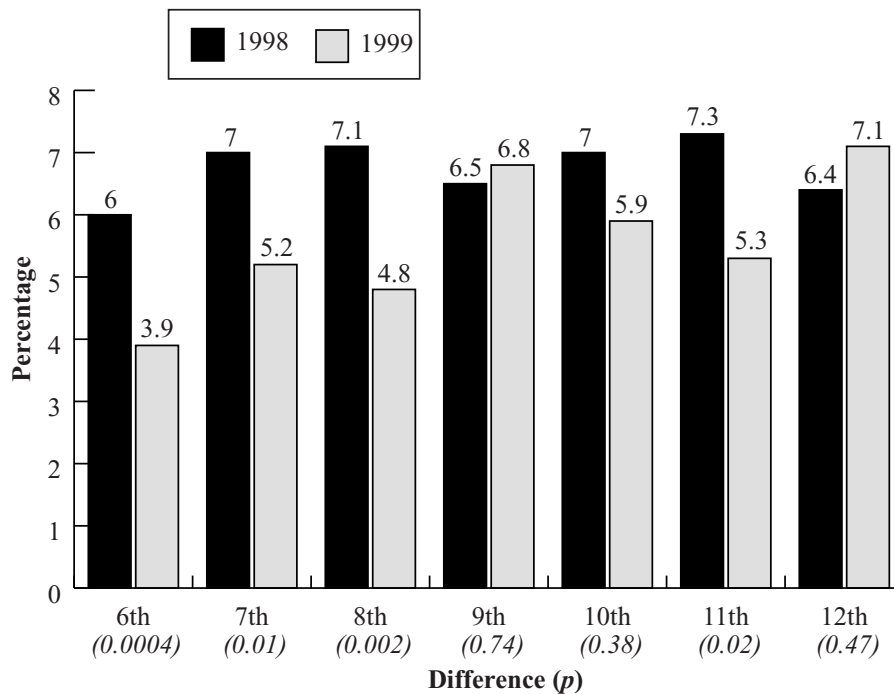
Source: Florida Department of Health.

cigar use were only evident in the transition from grades 6 to 7 and from grades 7 to 8. For smokeless tobacco use, no increases were observed, suggesting limited initiation from over the 1-year interval.

Figures 7-6 and 7-7 show the change in tobacco use (all products combined) for middle and high school students, respectively, by region of the state. Among both middle and high school students, current use of any tobacco product (all three forms combined) was highest in the Tampa Bay and South Central regions of Florida in both 1998 and 1999. Among middle school students, the largest decrements in prevalence of current tobacco use were observed in the Tampa Bay region and the northern regions of the state (the Panhandle, Northeast, and North Central regions). Among high school students, statistically significant declines in current tobacco use were evident only in the state as a whole and in the Northeast region.

Figure 7-6
Current Tobacco Use by Region: Public Middle School Students who Used Any Tobacco on 1 or More of the Past 30 Days—Florida Youth Tobacco Survey

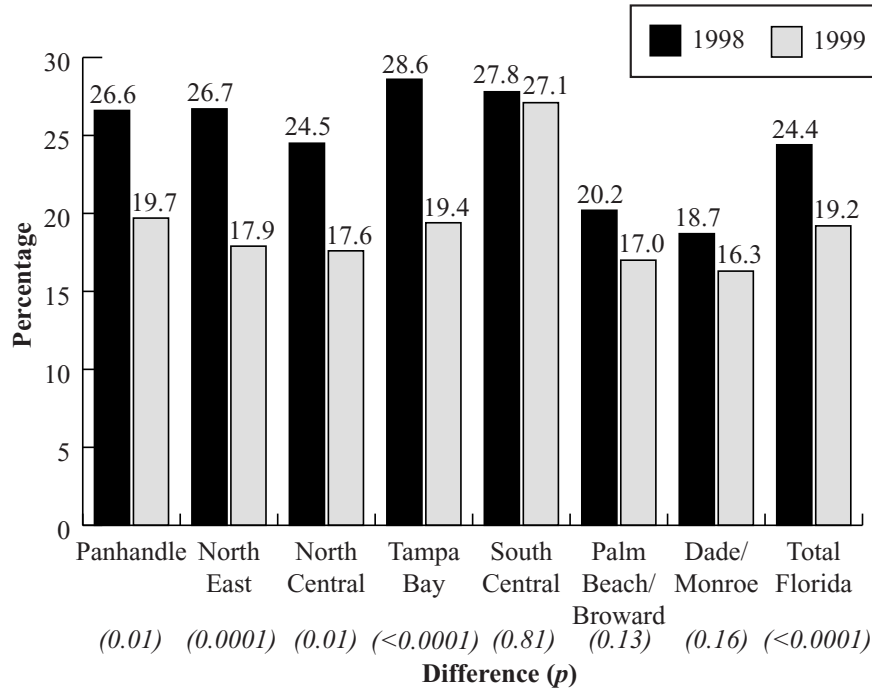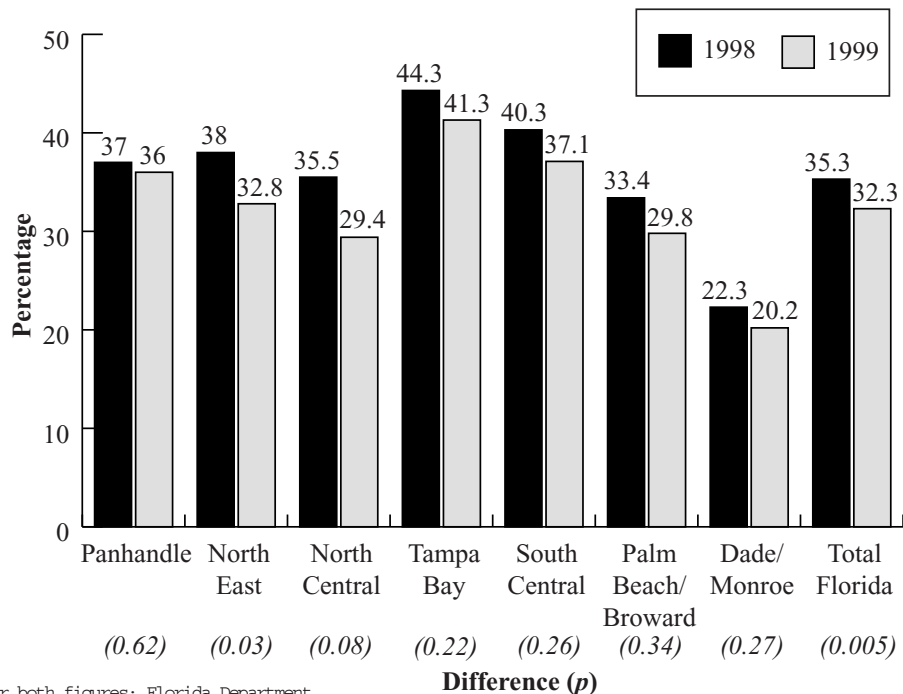|	Panhandle	North East	North Central	Tampa Bay	South Central	Palm Beach/ Broward	Dade/ Monroe	Total Florida
1998	26.6	26.7	24.5	28.6	27.8	20.2	18.7	24.4
1999	19.7	17.9	17.6	19.4	27.1	17.0	16.3	19.2
Difference (*p*)	(0.01)	(0.0001)	(0.01)	(<0.0001)	(0.81)	(0.13)	(0.16)	(<0.0001)

Figure 7-7
Current Tobacco Use by Region: Public High School Students who Used Any Tobacco on 1 or More of the Past 30 Days—Florida Youth Tobacco Survey

	Panhandle	North East	North Central	Tampa Bay	South Central	Palm Beach/ Broward	Dade/ Monroe	Total Florida
1998	37	38	35.5	44.3	40.3	33.4	22.3	35.3
1999	36	32.8	29.4	41.3	37.1	29.8	20.2	32.3
Difference (*p*)	(0.62)	(0.03)	(0.08)	(0.22)	(0.26)	(0.34)	(0.27)	(0.005)

Source for both figures: Florida Department

Susceptibility to Cigarette Use   Survey respondents were grouped into one of six mutually exclusive categories representing the continuum of susceptibility to cigarette use from confirmed non-smokers to former users. The six categories are:

- Confirmed non-smokers—those who have never tried cigarettes and who indicate on three separate questions that they will "definitely not" smoke in the future;

- Considerers—those who have never tried cigarettes and who indicate that they will or are ambivalent about whether they will smoke in the future;

- Experimenters—those who have tried cigarettes, have never smoked regularly, and have not smoked in the past 30 days;

- Occasional users—those who have smoked cigarettes on 1 to 19 of the past 30 days;

- Frequent users—those who have smoked cigarettes on 20 or more of the past 30 days; and

- Former users—those who smoked daily at some point, but have not smoked in the past 30 days.

Built into the susceptibility variable is a measure of attitude and behavior. The first two categories reflect the students' past behavior and their predictions of future behavior based (presumably) on the attitudes they currently hold toward cigarette use. Overall, the percentage of students who are confirmed non-smokers increased from 38.5 percent in 1998 to 42.8 percent in 1999 among middle school students and from 24.1 percent in 1998 to 30.5 percent in 1999 among high school students (p-values for the difference: 0.0003 and 0.0001, respectively) (Figure 7-8). Among middle and high school students, the proportion of considerers remained constant over the 1-year period and, in middle school, the proportion of experimenters actually increased (from 21.8 percent to 23.6 percent, p = 0.02) (Figures 7-9 and 7-10). Statistically significant declines were seen in every other susceptibility category, including "former"[1] smoker. The lack of increase in the percentage of former smokers suggests that changes in susceptibility (particularly occasional and frequent users) are due to fewer initiations rather than more quitters.

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1. The increase in experimenters and the decline in former smokers likely reflects the way these categories are defined. With fewer adolescents smoking, fewer are, or have been, regular (daily) smokers. Those who have smoked, but never smoked daily, and who have not smoked in the past 30 days are experimenters, not former smokers.

Figure 7-8
Percentage "Confirmed" Non-Smokers: Public School Students who Never Tried a Cigarette and Are Not Considering Trying a Cigarette—Florida Youth Tobacco Survey
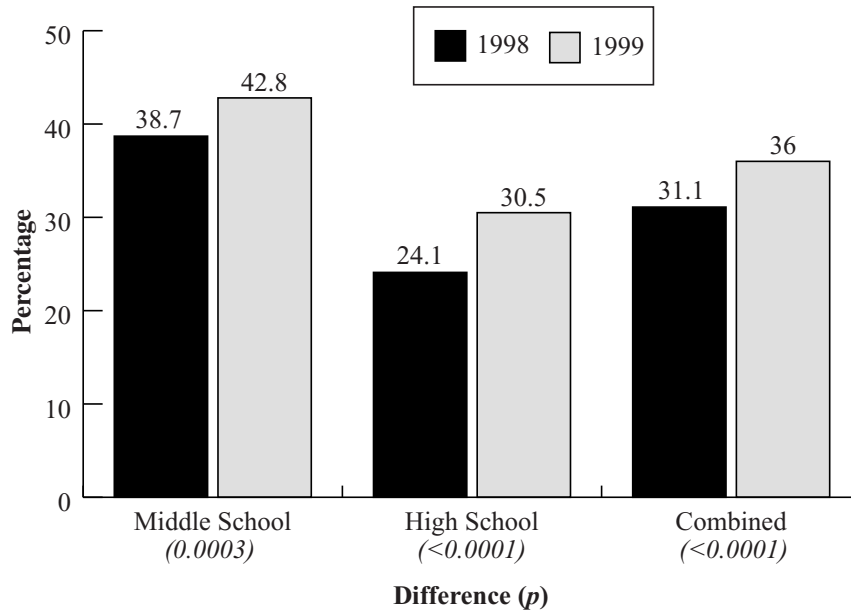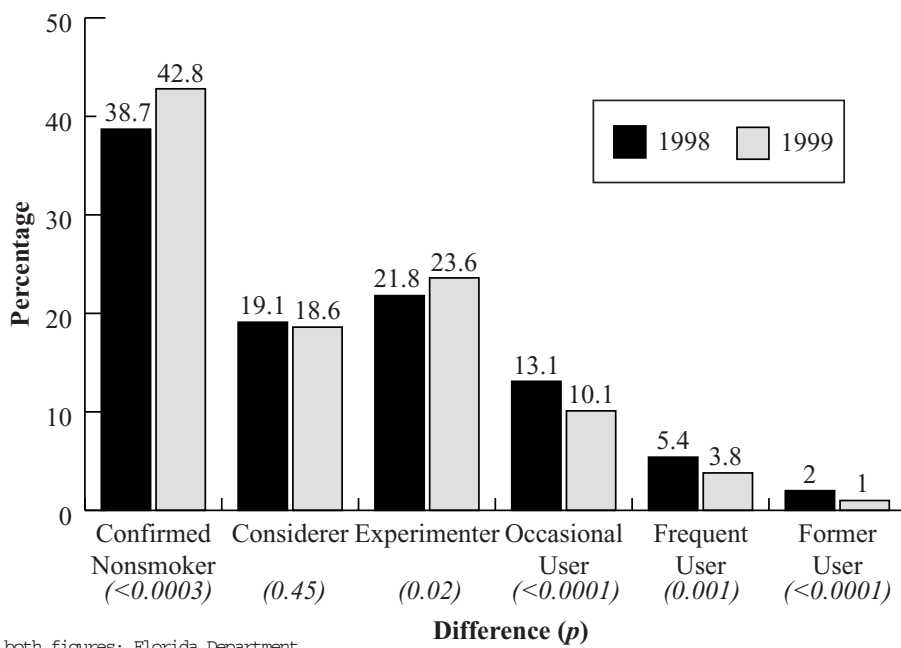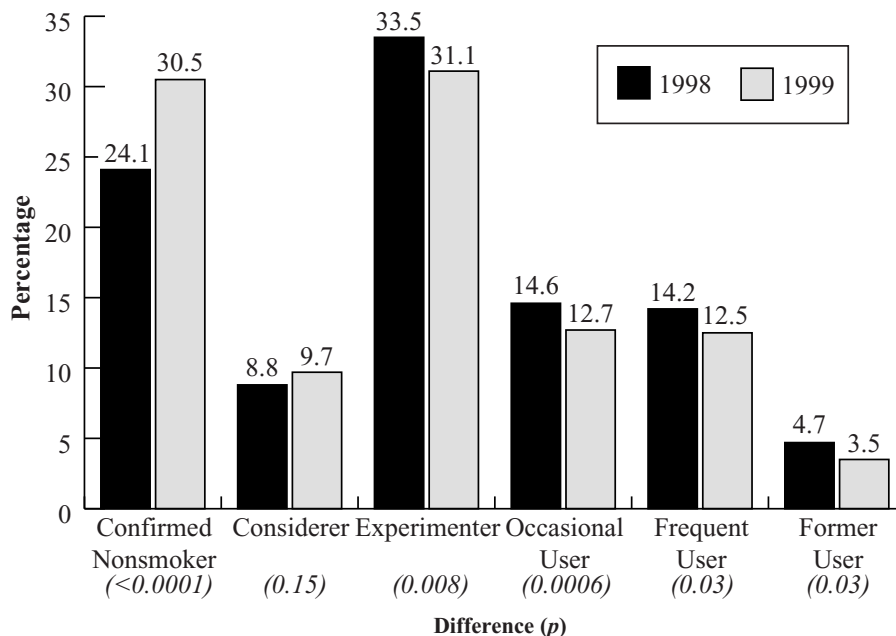

Figure 7-9
The "Susceptibility" Continuum: Public Middle School Students—Florida Youth Tobacco Survey

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Figure 7-10
The "Susceptibility" Continuum: Public High School Students—Florida Youth Tobacco Survey

Source: Florida Department of Health.

Although no substantial change in current use of cigarettes was observed among African American students (Tables 7-1 and 7-2), this group experienced the largest increase in the proportion of students who are "confirmed" non-smokers. Among middle and high school students combined, the proportion of students who are confirmed non-smokers increased from 28.7 percent to 33.1 percent among non-Hispanic White students ($p < 0.0001$), from 36.9 percent to 45.2 percent among African American students ($p < 0.0001$), and from 31.6 percent to 34.6 percent among Hispanic students ($p = 0.05$). In addition, the percentage of "considerers" declined among African American students, from 17.3 percent to 15.4 percent ($p = 0.06$), and the percentage of experimenters in the same group declined from 33.5 percent to 29.9 percent ($p= 0.008$) over the 1-year period. There were no changes in the percentage of students who were considerers or experimenters in any other racial/ethnic group (Table 7-3).

Table 7-3
Susceptibility to Cigarette Use, by Race/Ethnicity: Florida Youth Tobacco Survey,
1998 and 1999

Categories	Non-Hispanic White		Non-Hispanic Black		Hispanic (Any Race)	
	1998	1999	1998	1999	1998	1999
Never User	28.7	33.1*	36.9	45.2*	31.6	34.6*
Considerer	12.1	12.7	17.3	15.4	15.4	14.6
Experimenter	26.1	27.1	33.5	29.9*	28.2	29.0
Occasional User	15.7	13.0*	8.0	6.1*	15.3	13.7
Frequent User	13.4	11.0*	2.2	2.5	6.8	6.5
Former User	4.1	3.2*	2.2	1.0	2.7	1.7

Predictors of Tobacco Use and Consideration of Cigarette Use

Logistic regression modeling was used to identify predictors of current use of cigarettes, cigars, and smokeless tobacco products (separately) in each of the two survey years. Models were compared to identify differences in the factors associated with tobacco use and differences in the magnitude of the association across the two survey years. In addition, among those students who have never tried cigarettes (even one or two puffs), logistic regression was used to identify predictors of considering cigarette use in the future. Models for 1998 and 1999 were compared across the two time points for differences in the factors associated with considering smoking and in the magnitude of the association. The following variables were included in the models:

- Sex: girls as the referent;
- Race/ethnicity: Black, non-Hispanic as the referent;
- Age: in 1-year increments;
- Smokers at home: anyone who lives in the student's household smokes (yes/no);
- Number of friends who smoke cigarettes: continuous variable (0, 1, 2, 3, 4);
- Number of friends who use smokeless tobacco: continuous variable (0, 1, 2, 3, 4);
- Grade point average: continuous variable, A = 1, B = 2, C = 3, D = 4, F = 5, Missing = 6;
- Age inappropriate for grade: age-appropriate as the referent;
- Current use of cigarettes: non-use as the referent;
- Current use of cigars: non-use as the referent;
- Current use of smokeless tobacco: non-use as the referent.

Tables 7-4 and 7-5 show the odds ratios and 95 percent confidence limits for these variables for each of the three outcome variables (current use of cigarettes, cigars, and smokeless tobacco products), for 1998 and 1999, respectively, for middle and high school students combined. For the most part, the logistic regression models confirmed the findings from the descriptive analyses. Non-Hispanic White and Hispanic students were substantially more likely to use cigarettes relative to African American students; the odds of using cigarettes increased with increasing age and with the number of friends who use cigarettes or smokeless tobacco products; and the odds of using cigarettes were greater among those with a household member who smokes. Current use of cigars and smokeless tobacco were strongly associated with current cigarette use.

The only difference across the two survey years in the models predicting cigarette use was a small, but statistically significant, decrement in the magnitude of the odds ratio for number of friends who smoke cigarettes in 1999 compared to 1998.

The model predicting cigar use changed more substantially across the two survey years. The observed decline in cigar use by middle school boys resulted in a substantial decline in the odds ratio for males relative to females across the two survey years. Likewise, the observed significant reduction in cigar use among 11th grade students contributed to a decline in the magnitude of the odds ratio for age in the cigar use model. The magnitude of the odds ratio for current use of smokeless tobacco as a predictor for current cigar use increased substantially across the two survey years, suggesting a concentration of tobacco use among those who use multiple forms of tobacco.[2]

Not surprisingly, in the model predicting current use of smokeless tobacco products, the magnitude of the odds ratio for current cigar use also increased significantly. The magnitude of the odds ratios for number of friends who use smokeless tobacco and for current use of cigars significantly increased across the two survey years in the model predicting smokeless tobacco use.

A logistic regression model was also developed to identify predictors of considering cigarette use in the future among middle and high school students who have never tried cigarettes (Table 7-6). Overall, the percentage of middle and high school students who have never tried cigarettes, but who are considering smoking, remained unchanged across the two survey years at 13.7 percent of the total population. However, among those who have never tried cigarettes, the percentage who are considering trying cigarettes

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2. Of the students who used any tobacco product in the previous 30 days (in 1998), 34.4 percent used cigarettes only, 28.1 percent used cigarettes and cigars, 15.8 percent used cigars only, 9.9 percent used all three types of tobacco, 5.3 percent used smokeless tobacco only, 3.4 percent used smokeless and cigars, and 3.1 percent used cigarettes and smokeless tobacco.

Table 7-4
Logistic Regression Model Predicting Odds of Tobacco Use, by Type of Product:

Florida Youth Tobacco Survey, 1998

Sample Size (*N*):	Cigarette Use (19,869)		Cigar Use (19,869)		Smokeless Tobacco Use (19,869)	
	OR	CI	OR	CI	OR	CI
Sex						
Female	1.00	—	1.00	—	1.00	—
Male	0.59	0.54–0.64	2.40	2.16–2.66	2.99	2.52–3.54
Race/Ethnicity						
White, non-Hispanic	3.44	2.93–4.03	0.62	0.51–0.74	1.70	1.32–2.17
Black, non-Hispanic	1.00	—	1.00	—	1.00	—
Hispanic	2.63	2.19–3.16	0.63	0.51–0.77	0.81	0.60–1.11
Asian/Pacific Islander	1.96	1.32–2.91	0.76	0.50–1.14	1.37	0.75–2.49
Amer. Indian/AK Native	3.69	2.11–6.45	0.57	0.34–0.97	3.03	1.49–6.16
Other	2.68	2.10–3.41	0.65	0.50–0.84	1.74	1.16–2.60
Age	1.20	1.16–1.25	1.21	1.15–1.26	0.94	0.87–1.01
Smokers at Home						
Yes	1.77	1.60–1.96	1.11	1.00–1.22	1.08	0.91–1.27
No	1.00	—	1.00	—	1.00	—
GPA	1.14	1.10–1.18	1.07	1.03–1.11	1.04	0.99–1.09
No. of Friends—Smoke	2.21	2.12–2.30	1.26	1.20–1.32	0.93	0.87–0.99
No. of Friends—Smokeless	0.94	0.88–1.02	1.08	1.01–1.15	2.21	2.06–2.36
Current Tobacco Use						
Cigarette						
Yes	NA	NA	10.59	9.27–12.10	3.21	2.61–3.94
No	NA	NA	1.00	—	1.00	—
Cigar						
Yes	10.72	9.38–12.25	NA	NA	3.67	3.06–4.41
No	1.00	—	NA	NA	1.00	—
Smokeless						
Yes	3.23	2.65–3.95	3.59	2.98–4.32	NA	NA
No	1.00	—	1.00	—	NA	NA
Inappropriate Age						
Yes	0.96	0.86–1.07	1.03	0.93–1.15	1.48	1.22–1.79
No	1.00	—	1.00	—	1.00	—
12th Grader	0.92	0.79–1.06	0.72	0.59–0.88	1.05	0.80–1.37

Note: CI= 95% confidence interval.

Table 7-5
Logistic Regression Model Predicting Odds of Tobacco Use, by Type of Product:

Florida Youth Tobacco Survey, 1999

Sample Size (*N*):	Cigarette Use (18,193)		Cigar Use (18,193)		Smokeless Tobacco Use (18,193)	
	OR	CI	OR	CI	OR	CI
Sex						
Female	1.00	—	1.00	—	1.00	—
Male	0.61	0.52–0.73	2.05	1.75–2.40	3.25	2.40–4.41
Race/Ethnicity						
White, non-Hispanic	3.19	2.60–3.91	0.55	0.45–0.67	1.32	0.94–1.85
Black, non-Hispanic	1.00	—	1.00	—	1.00	—
Hispanic	2.60	2.08–3.24	0.67	0.54–0.83	0.83	0.58–1.17
Asian/Pacific Islander	2.69	1.74–4.13	0.43	0.28–0.65	0.90	0.48–1.67
Amer. Indian/AK Native	3.16	2.03–4.92	0.77	0.52–1.13	2.18	1.07–4.44
Other	NA	NA	NA	NA	NA	NA
Age	1.19	1.14–1.23	1.12	1.08–1.15	0.96	0.91–1.02
Smokers at Home						
Yes	1.64	1.45–1.86	1.19	1.04–1.37	1.22	1.00–1.50
No	1.00	—	1.00	—	1.00	—
GPA	1.13	1.08–1.18	1.11	1.05–1.17	1.04	0.96–1.12
No. of Friends—Smoke	2.11	2.03–2.19	1.30	1.23–1.38	0.90	0.83–0.96
No. of Friends—Smokeless	0.87	0.80–0.93	1.13	1.03–1.23	2.81	2.60–3.05
Current Tobacco Use						
Cigarette						
Yes	NA	NA	11.15	9.58–12.97	2.77	2.07–3.71
No	NA	NA	1.00	—	1.00	—
Cigar						
Yes	11.19	9.60–13.04	NA	NA	4.85	3.88–6.04
No	1.00	—	NA	NA	1.00	—
Smokeless						
Yes	2.88	2.14–3.88	4.66	3.74–5.82	NA	NA
No	1.00	—	1.00	—	NA	NA
Inappropriate Age						
Yes	1.13	0.91–1.41	0.94	0.76–1.15	1.09	0.77–1.54
No	1.00	—	1.00	—	1.00	—
Unknown	2.32	0.58–9.28	2.70	1.02–7.15	7.70	3.36–17.66

Note: CI= 95% confidence interval.

Table 7-6
Logistic Regression Model Predicting Odds of "Considering" Cigarette
Use:
Never-Smokers, Florida Youth Tobacco Survey, 1998 and 1999

Sample Size (*N*):	1998 Considerer (8,730)		1999 Considerer (9,058)	
	OR	CI	OR	CI
Sex				
Female	1.00	—	1.00	—
Male	0.87	0.79–0.96	0.83	0.72–0.96
Race/Ethnicity				
White, non-Hispanic	0.86	0.74–1.00	1.20	1.02–1.42
Black, non-Hispanic	1.00	—	1.00	—
Hispanic	0.97	0.82–1.15	1.26	1.07–1.49
Asian/Pacific Islander	1.24	0.97–1.59	1.55	1.12–2.14
American Indian/AK Native	0.68	0.33–1.39	1.29	0.84–1.97
Other	0.69	0.54–0.87	NA	NA
Age	0.92	0.88–0.95	0.90	0.85–0.96
Smokers at Home				
Yes	0.86	0.77–0.95	0.89	0.76–1.05
No	1.00	—	1.00	—
GPA	1.08	1.03–1.13	1.08	1.04–1.12
No. of Friends—Smoke	1.44	1.35–1.54	1.34	1.25–1.43
No. of Friends—Smokeless	1.02	0.92–1.12	1.08	0.95–1.22
Current Tobacco Use				
Cigarette				
Yes				
No	NA	NA	1.00	—
Cigar				
Yes	1.78	1.25–2.54	1.99	1.33–3.00
No	1.00	—	1.00	—
Smokeless				
Yes	2.65	1.84–3.81	2.38	1.34–4.21
No	1.00	—	1.00	—
Inappropriate Age				
Yes	1.23	1.12–1.35	1.35	1.03–1.77
No	1.00	—	1.00	—
12th Grader/Unknown	0.76	0.55–1.05	0.27	0.05–1.00
Receptivity	1.90	1.76–2.06	2.04	1.87–2.23

Note: CI= 95% confidence interval.

in the future declined from 30.7 percent in 1998 to 27.6 percent in 1999 (p = 0.0005). In the logistic regression model in 1998, the strongest predictors of considering trying cigarettes in the future were current use of another tobacco product (cigars or smokeless tobacco), the child's receptivity to tobacco company promotions[3], the number of friends who smoke, and being age-inappropriate for grade. Protective factors (against considering using cigarettes in the future) were living in a household with a smoker, being of non-Hispanic White race/ethnicity, and older age (possibly because students who fall into these three categories are significantly less likely to be never-smokers). In 1999, the model changed somewhat. Non-Hispanic White students were more likely than their African American counterparts to consider using cigarettes in the future (likely due to the decrease in considering among African American students) and the magnitude of the odds ratio for number of friends who smoke declined significantly.

SUMMARY   In Florida, attitudes and behaviors related to tobacco use changed among public school-enrolled youths in the 1-year time interval between the 1998 and 1999 Youth Tobacco Surveys, an interval that included the 10 months immediately following the initiation of the Florida Pilot Program youth tobacco use prevention activities. Overall, current cigarette use declined 19 percent among middle school students and 8 percent among high school students. The percentage of students who are confirmed non-smokers increased in all racial/ethnic groups and at all grade levels. Predictors of tobacco use remained relatively unchanged over the 1-year time period; however, the magnitude of the predictors had changed. Peer influence, defined by the number of friends who use cigarettes, declined in importance as a predictor of cigarette use. The observed trend of increasing cigar use with increasing age was reduced.

Nationwide, the prevalence of cigarette smoking among adolescents increased during the 1990's (CDC, 1998; Johnston *et al.*, 1998b); however, smoking prevalence rates may have peaked in 1996 or 1997 and could be starting to decline (Johnston *et al.*, 1998a). Currently, national data for 1998 and 1999 are unavailable for comparison with the Florida data. However, the decline in cigarette use between 1998 and 1999 among Florida adolescents reported here is larger than any annual decline observed in this nation among youths since 1980 (Johnston *et al.*, 1998a & 1998b). Ongoing evaluation efforts are underway to determine whether the observed declines in youth tobacco use are related primarily to the program activities implemented by the Florida Pilot Program on Tobacco Control. If this is the case, similar programs or program components should be implemented nationwide to reverse the increase in youth smoking observed during the 1990's (CDC, 1998; Johnston *et al.*, 1998b).

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3. Whether the student has bought or received anything with a tobacco company name or picture on it in the past 12 months and whether the student would use or wear something with a tobacco company name or picture on it.

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