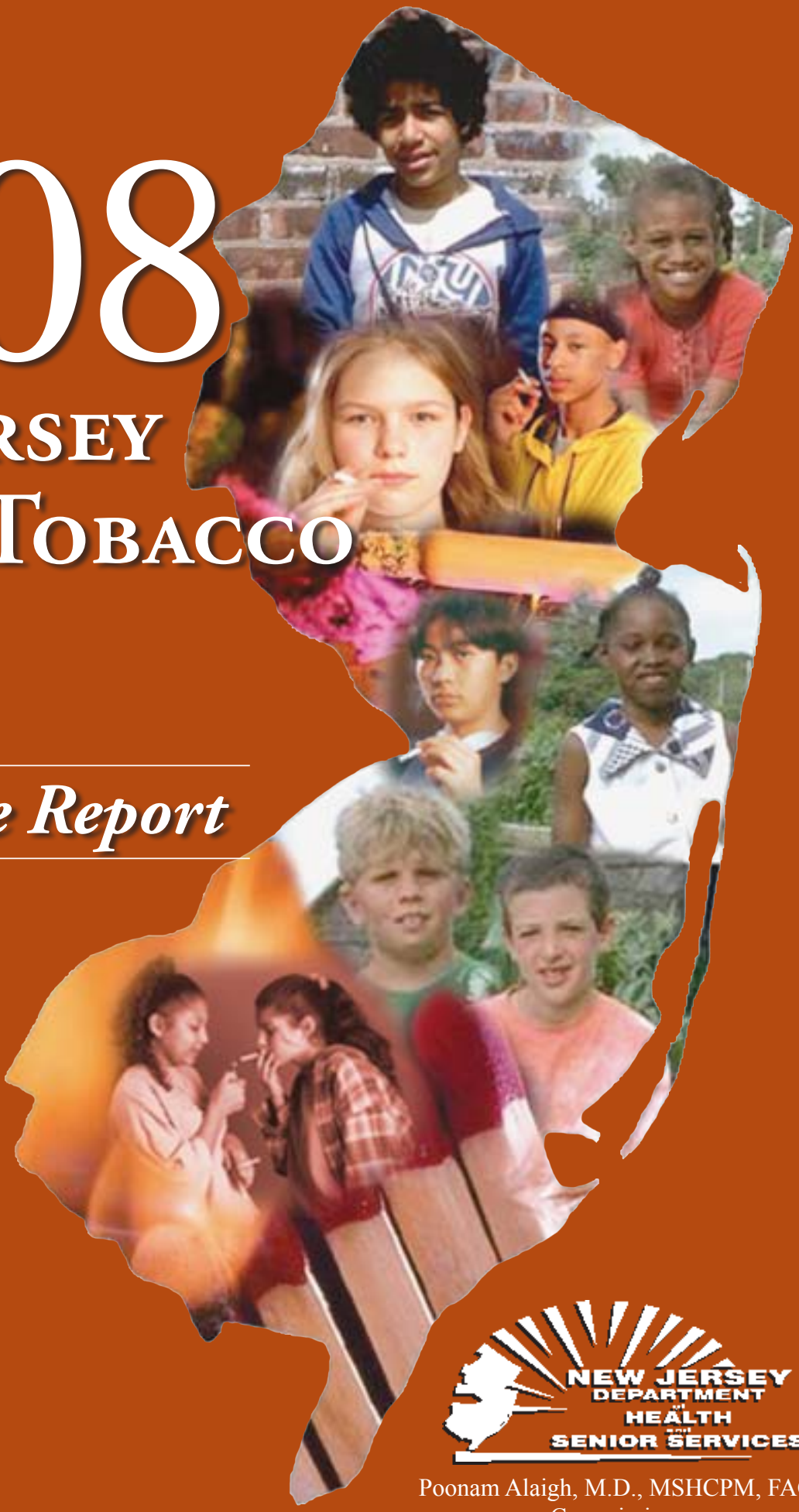
2008 New Jersey Youth Tobacco Survey



A Statewide Report

July 2009

NEW JERSEY DEPARTMENT OF HEALTH AND SENIOR SERVICES

Chris Christie, Governor
Kim Guadagno, Lt. Governor

Poonam Alaigh, M.D., MSHCPM, FACP
Commissioner

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The New Jersey Comprehensive Tobacco Control Program (CTCP) is a unit of the New Jersey Department of Health and Senior Services (DHSS) under the direction of Commissioner Poonam Alaigh. The CTCP is administratively located within the Division of Family Health Services. This report was prepared for DHSS by the University of Medicine and Dentistry of New Jersey-School of Public Health, through funding from New Jersey's cigarette excise tax. The interpretations of data, conclusions, and recommendations expressed in this report are those of the authors and may not represent the views of DHSS.

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HIGHLIGHTS

The 2008 New Jersey Youth Tobacco Survey found that:

- 21.2% of middle school students and 48.7% of high school students reported having ever tried some form of tobacco.
- 2.8% of middle school students and 14.3% of high school students reported current use of cigarettes.
- 2.4% of middle school students and 9.1% of high school students reported current use of cigars.
- 1.4% of middle school students and 5.0% of high school students reported current use of smokeless tobacco.
- 4.6% of middle school students and 8.7% of high school students reported current use of bidis.
- 4.1% of middle school students and 9.7% of high school students reported current use of a hookah.
- Among current smokers under the age of 18 who reported usually obtaining their cigarettes by purchasing them in a store, 84.0% of middle school students and 64.1% of high school students reported they were not asked to provide proof of age at the time of the purchase.
- 33.9% of middle school students and 38.2% of high school students reported awareness of places in New Jersey that sell loose or single cigarettes.
- 40.9% of middle school students and 52.5% of high school students reported being exposed to secondhand smoke in either rooms or in cars during the seven days preceding the survey.
- 27.2% of middle school students and 48.8% of high school students had ever heard of the statewide, youth-led anti-tobacco movement known as REBEL.
- Among current high school smokers, 50.5% reported a desire to stop smoking.
- Among frequent high school smokers, 47.5% had been advised by a health professional not to smoke.

INTRODUCTION

The New Jersey Comprehensive Tobacco Control Program (CTCP) was created nearly ten years ago, with a mission to decrease deaths, sickness and disability among residents who use tobacco or are exposed to secondhand smoke. Despite serious budget challenges over the last few years, the CTCP managed to preserve many programs and services, particularly those designed to prevent the initiation of tobacco use by youth and young adults including its youth activism program, Reaching Everyone By Exposing Lies (REBEL), school-based youth tobacco cessation programs, and Tobacco Age of Sale Enforcement (TASE) programs to stop the sale of tobacco to minors. These programs reflect the CTCP's long-standing commitment to achieving its goals to decrease the acceptability of tobacco use, decrease the initiation of tobacco by youth, increase the initiation of smoking cessation treatment among all smokers, reduce exposure to secondhand smoke, and reduce disparities.

In 1999, New Jersey was one of the first states to begin statewide youth tobacco surveillance using the Youth Tobacco Survey. The Centers for Disease Control and Prevention (CDC) developed the National Youth Tobacco Survey (NYTS) to provide states with data, such as population-based estimates of the prevalence of tobacco use among middle and high school students, to support the design, implementation, and evaluation of comprehensive tobacco control programs. The New Jersey Youth Tobacco Survey (NJYTS) is an adaptation of the NYTS with state-added questions specific to programming and youth tobacco use trends in New Jersey. The first NJYTS was intended to provide a baseline for monitoring progress toward the CTCP's goal to reduce tobacco use among youth. After the baseline survey, the NJYTS was repeated in 2001, 2004, 2006 and 2008.

The 2008 NJYTS was administered to 3,051 middle school students (grades 7-8) in 62 schools and 3,010 high school students (grades 9-12) in 67 schools during the fall of 2008. The findings of the 2008 NJYTS are representative of all 7th through 12th grade public school students. The *2008 New Jersey Youth Tobacco Survey: A Statewide Report* summarizes current tobacco use patterns among New Jersey youth using results from the most recent NJYTS. These results are compared with data collected from previous NJYTS administrations (1999, 2001, 2004 and 2006), as well as national trends. The results also allow for the continued evaluation of New Jersey youth tobacco use programming to determine progress toward the achievement of CTCP's goals.

RESULTS

Lifetime Use of Tobacco

New Jersey middle and high school students were asked if they had ever used cigarettes, cigars, smokeless tobacco (SLT), bidis, or hookahs in their lifetime. Ever use is defined as trying a tobacco product even one time. Hookah use was excluded from the ever use of any product definition to allow for comparison from year to year. Estimates of lifetime or ever use of all tobacco products by school type, gender, race/ethnicity, and grade are found in Table 1.

Table 1. Percentage of New Jersey middle school and high school students who ever used any tobacco product, cigarettes, cigars, smokeless tobacco (SLT), bidis or hookah, by gender, race/ethnicity, and school grade – NJYTS, 2008

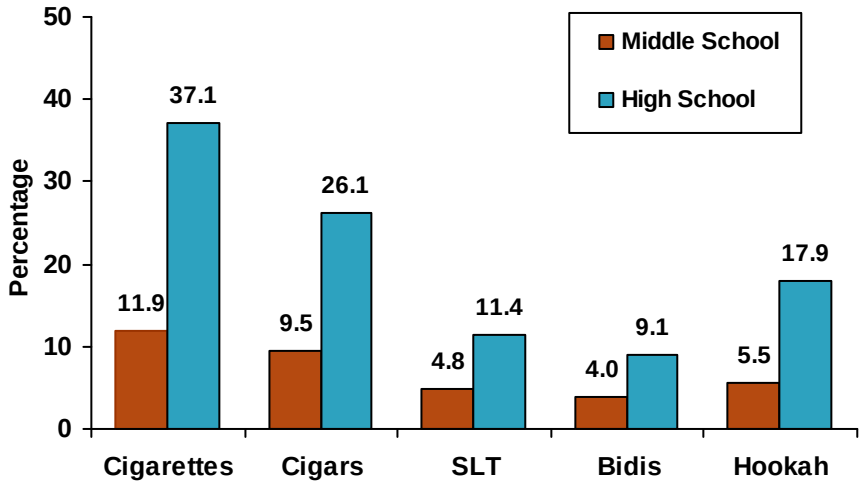
	Any*	Cigarette	Cigar	SLT†	Bidis	Hookah
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Middle School						
Gender						
Male	23.9 ± 3.0	13.6 ± 2.2	11.8 ± 1.7	5.3 ± 1.6	5.0 ± 1.2	6.4 ± 4.5
Female	18.5 ± 2.4	10.2 ± 1.9	7.3 ± 1.6	4.2 ± 1.1	2.9 ± 0.8	4.5 ± 1.2
Race/Ethnicity						
White	16.9 ± 2.3	8.5 ± 1.8	8.0 ± 1.5	4.2 ± 1.4	3.1 ± 1.0	5.0 ± 1.3
Black	30.9 ± 6.3	16.9 ± 3.9	12.0 ± 2.7	6.2 ± 2.0	6.4 ± 3.1	3.7 ± 1.8
Hispanic	31.7 ± 5.1	20.4 ± 4.2	15.3 ± 4.4	6.6 ± 2.1	5.4 ± 1.7	9.0 ± 2.6
Grade						
7	17.8 ± 2.9	8.8 ± 1.9	7.7 ± 1.6	4.4 ± 1.3	3.3 ± 1.3	4.9 ± 1.7
8	24.3 ± 2.8	14.7 ± 2.5	11.3 ± 1.8	5.3 ± 1.4	4.6 ± 1.2	5.9 ± 1.6
Total (middle school)	21.2 ± 2.2	11.9 ± 1.7	9.5 ± 1.2	4.8 ± 1.0	4.0 ± 0.8	5.5 ± 1.1
High School						
Gender						
Male	50.6 ± 3.7	35.7 ± 3.4	32.1 ± 3.2	16.9 ± 2.0	11.7 ± 2.1	18.9 ± 2.7
Female	46.8 ± 4.3	38.6 ± 4.2	20.3 ± 2.7	6.0 ± 1.4	6.6 ± 1.6	17.0 ± 2.9
Race/Ethnicity						
White	48.6 ± 4.0	37.4 ± 4.3	29.6 ± 3.2	12.8 ± 1.5	8.3 ± 2.0	19.4 ± 3.2
Black	48.9 ± 7.4	34.6 ± 6.8	19.3 ± 3.2	9.2 ± 3.2	12.1 ± 3.0	12.5 ± 3.1
Hispanic	53.7 ± 5.2	43.3 ± 6.1	24.1 ± 3.7	9.0 ± 2.2	7.7 ± 2.8	17.3 ± 2.7
Grade						
9	35.7 ± 5.5	24.5 ± 4.6	16.4 ± 3.1	7.7 ± 1.8	6.5 ± 2.2	10.9 ± 2.3
10	47.7 ± 6.2	35.3 ± 5.6	24.3 ± 4.3	8.5 ± 2.4	9.7 ± 3.0	16.4 ± 4.0
11	54.1 ± 4.0	42.8 ± 4.9	31.7 ± 3.5	15.3 ± 3.6	10.5 ± 2.7	20.9 ± 4.1
12	58.3 ± 4.7	47.5 ± 4.9	33.7 ± 5.3	14.5 ± 2.2	9.8 ± 2.5	24.1 ± 5.7
Total (high school)	48.7 ± 3.4	37.1 ± 3.3	26.1 ± 2.4	11.4 ± 1.2	9.1 ± 1.6	17.9 ± 2.5

*Ever use of cigarettes and/or cigars and/or smokeless tobacco and/or bidis
†Smokeless tobacco

In 2008, 21.2% (±2.2) of middle school students and 48.7% (±3.4) of high school students reported ever having used any form of tobacco in their lifetime. In 2008, there were some differences in overall lifetime tobacco use among New Jersey youth by demographic characteristics (see Table 1). Eighth graders (24.3 ±2.8%) were more likely to report ever use of all tobacco products compared to seventh graders (17.8 ±2.9%). Lifetime tobacco use was significantly higher for black (30.9 ±6.3%) and Hispanic (31.7 ±5.1%) middle school students compared to white middle school students (16.9 ±2.3%).

The overall prevalence of lifetime tobacco use among middle school students decreased from 24.5% (± 2.4) in 2006 to 21.2% (±2.2) in 2008 and the prevalence of lifetime tobacco use among high school students decreased from 49.9% (±2.8) in 2006 to 45.0% (±3.1) in 2008, but these decreases were not statistically significant. Cigarettes and cigars remained the most frequently used tobacco products by both middle and high school students in New Jersey, but continued experimentation with other forms of tobacco, such as SLT, bidis, and hookah, was notable (see Figure 1).

Figure 1. Percentage of middle and high school students who ever used tobacco, by type of tobacco product – NJYTS, 2008



Lifetime use of specific tobacco products also differed by demographic characteristics in 2008. Generally ever use of each tobacco product increased as grade level increased. Among middle school and high school students, ever cigar use and ever bidi use was significantly higher among males compared to females. Further, high school males (16.9 ±2.0%) were more likely to report lifetime SLT use compared to high school females (6.0 ±1.4%). Ever cigarette and ever cigar use were significantly higher for black and Hispanic middle school students compared to white middle school students.

Significantly more Hispanic middle school students (9.0 ±2.6%) reported having ever used a hookah compared to whites (5.0 ±1.3%) and blacks (3.7 ±1.8%) in 2008. Ever cigar use and ever hookah use were significantly higher for white high school students compared to black high school students. Ever SLT use was significantly higher for white (12.8 ±1.5%) high school students compared to Hispanic (9.0 ±2.2%) high school students. The overall prevalence of ever use of cigarettes, cigars, SLT, and bidis among middle school and high school students remained unchanged from 2006.

Ten Year Trends

Lifetime use of cigarettes, cigars, SLT and bidis among middle school students (see Figure 2) and high school students (see Figure 3) significantly decreased since first assessed in 1999. However, declines in lifetime prevalence have slowed considerably. Among middle school students, the prevalence of lifetime cigarette, cigar, SLT, and bidi use has not significantly changed since 2001. Among high school students, the prevalence of lifetime cigarette and cigar use has not significantly changed since 2004. Likewise, the prevalence of ever SLT and bidi use among high school students has not significantly changed since 2001.

Figure 2. Percentage of middle school students who ever used tobacco, by type of tobacco product from 1999 to 2008 – NJYTS, 2008

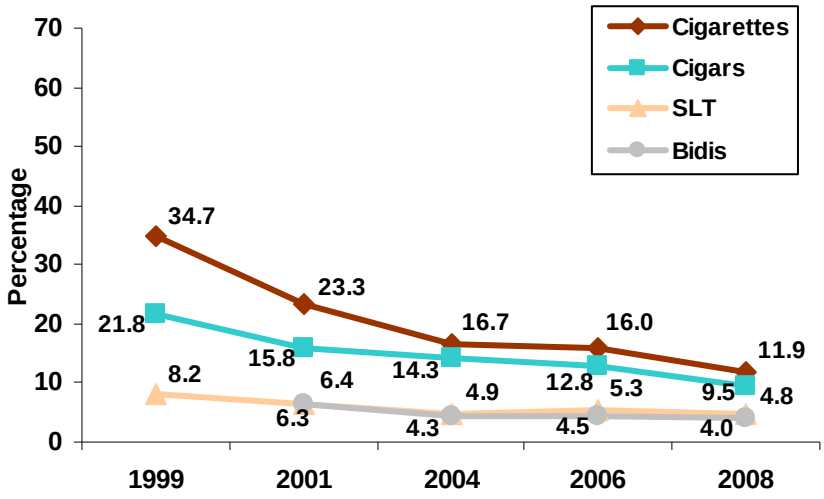
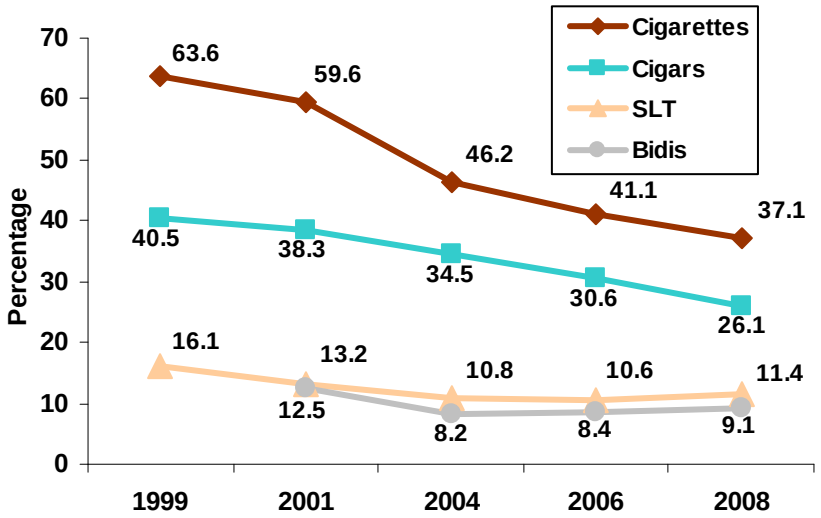


Figure 3. Percentage of high school students who ever used tobacco by type of tobacco product from 1999 to 2008 – NJYTS, 2008



Current Use of Tobacco

Current tobacco use is defined as the use of any tobacco product on one or more days in the 30 days preceding the survey. This measure includes experimenters (those who may have just tried their first cigarette), occasional users (those who smoke occasionally) and regular smokers. New Jersey youth were asked about their current use of cigarettes, cigars, smokeless tobacco, bidis, and hookah (although hookah was excluded from the definition of current use of any tobacco product). Current use of all tobacco products by school type, gender, race/ethnicity, and school grade is found in Table 2.

Table 2. Percentage of New Jersey middle school and high school students who were current users of any tobacco product, cigarettes, cigars, smokeless tobacco (SLT), bidis, or hookah, by gender, race/ethnicity, and school grade – NJYTS, 2008

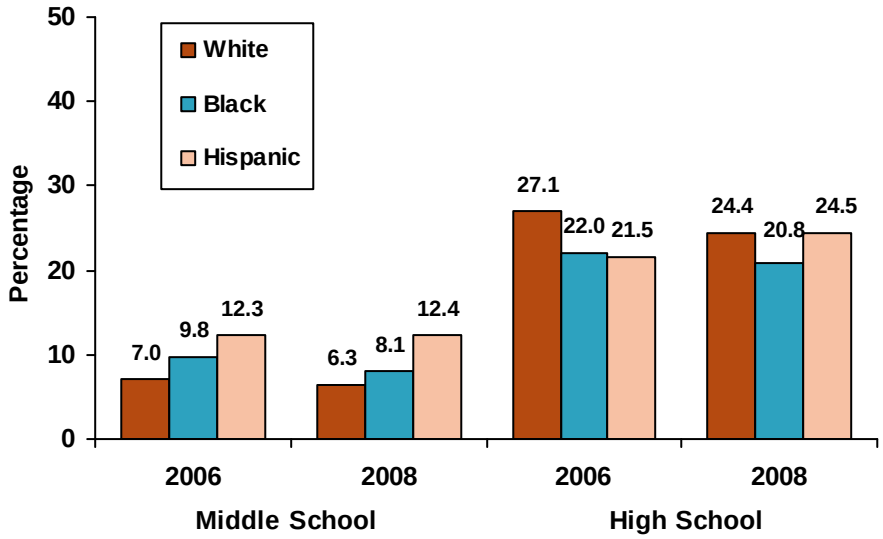
	Any*	Cigarette	Cigar	SLT†	Bidis	Hookah
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Middle School						
Gender						
Male	8.9 ± 1.8	3.1 ± 1.0	3.1 ± 0.9	1.7 ± 0.8	5.5 ± 1.5	4.4 ± 1.1
Female	6.2 ± 1.3	2.5 ± 0.8	1.7 ± 0.8	1.0 ± 0.5	3.6 ± 1.2	3.6 ± 1.3
Race/Ethnicity						
White	6.3 ± 1.7	2.4 ± 0.9	1.4 ± 0.6	1.0 ± 0.6	3.5 ± 1.2	3.4 ± 1.0
Black	8.1 ± 3.2	2.0 ± 1.5	2.8 ± 2.2	1.7 ± 1.2	6.4 ± 2.9	4.2 ± 2.9
Hispanic	12.4 ± 3.8	6.1 ± 2.6	5.5 ± 2.4	2.2 ± 1.1	7.1 ± 2.8	6.4 ± 2.3
Grade						
7	5.8 ± 1.5	1.7 ± 0.6	2.0 ± 0.9	1.3 ± 0.6	4.2 ± 1.5	3.7 ± 1.5
8	9.2 ± 1.8	3.9 ± 1.1	2.7 ± 0.8	1.5 ± 0.7	4.8 ± 1.3	4.3 ± 1.4
Total (middle school)	7.7 ± 1.3	2.8 ± 0.7	2.4 ± 0.6	1.4 ± 0.5	4.6 ± 1.1	4.1 ± 1.0
High School						
Gender						
Male	26.7 ± 2.8	14.5 ± 2.2	11.9 ± 2.0	8.2 ± 1.4	10.6 ± 2.0	10.5 ± 2.0
Female	19.9 ± 2.6	14.3 ± 2.4	6.2 ± 1.5	1.8 ± 0.8	6.7 ± 1.6	8.8 ± 2.0
Race/Ethnicity						
White	24.4 ± 3.2	16.5 ± 2.8	9.7 ± 1.9	4.9 ± 1.1	7.7 ± 1.7	9.8 ± 1.9
Black	20.8 ± 4.9	7.7 ± 3.2	8.3 ± 2.6	5.8 ± 2.6	11.3 ± 3.4	8.6 ± 3.2
Hispanic	24.5 ± 3.3	15.0 ± 3.2	8.4 ± 2.4	4.2 ± 1.4	9.5 ± 3.0	9.4 ± 2.6
Grade						
9	15.2 ± 3.0	7.3 ± 2.4	4.2 ± 1.6	3.4 ± 1.6	7.7 ± 1.9	6.2 ± 1.8
10	21.1 ± 4.2	12.5 ± 2.9	7.6 ± 2.2	4.2 ± 2.0	8.1 ± 2.5	9.7 ± 2.8
11	28.4 ± 3.3	18.8 ± 2.9	12.8 ± 2.3	6.3 ± 2.2	10.1 ± 2.8	11.2 ± 2.1
12	29.4 ± 4.1	19.9 ± 3.8	11.9 ± 2.6	6.5 ± 1.1	8.9 ± 2.5	11.7 ± 3.5
Total (high school)	23.3 ± 2.4	14.3 ± 1.9	9.1 ± 1.4	5.0 ± 0.8	8.7 ± 1.5	9.7 ± 1.6

*Use of any tobacco (cigarettes, cigars, smokeless tobacco, or bidis) during > 1 of the 30 days preceding the survey
†Smokeless tobacco

Current Use of Any Tobacco

Overall, 7.7% (±1.3) of New Jersey middle school students and 23.3% (±2.4) of high school students reported using some form of tobacco (i.e., cigarettes, cigars, smokeless, or bidis) in the 30 days preceding the survey. There were demographic differences in current overall tobacco use among New Jersey youth in 2008 (see Table 2). Among middle school students, current use of any tobacco product was significantly higher among Hispanics (12.4 ±3.8%) compared to whites (6.3 ±1.7%) (see Figure 4) and 8th graders (9.2 ±1.8%) compared to 7th graders (5.8 ±1.5%). Among high school students, males (26.7 ±2.8%) demonstrated a higher prevalence of current use of any tobacco product compared to females (19.9 ±2.6%). There were no significant differences reported between 2006 and 2008.

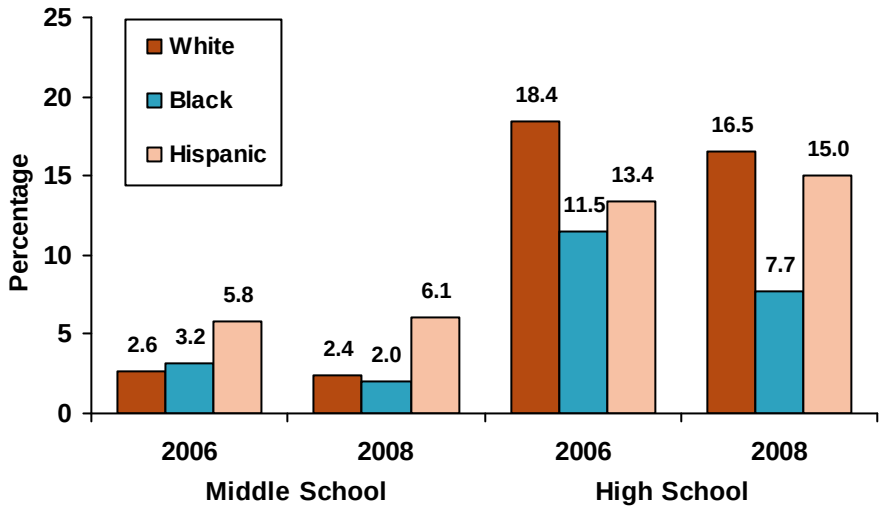
Figure 4. Percentage of middle and high school students who were current users of any tobacco, by race/ethnicity – NJYTS, 2006-2008



Current Cigarette Use

Overall, 2.8% (±0.7) of middle school students and 14.3% (±1.9) of high school students reported smoking a cigarette on one or more days in the 30 days preceding the survey with some demographic differences noted in 2008. Among middle school students, Hispanics (6.1 ±2.6%) demonstrated a higher prevalence of current cigarette use compared to whites (2.4 ±0.9%) (see Figure 5). Among high school students, current cigarette use was significantly higher for whites (16.5 ±2.8%) and Hispanics (15.0 ±3.2%) compared to blacks (7.7 ±3.2%) (see Figure 5), while cigarette use among 11th (18.8 ±2.9%) graders was significantly higher than 10th graders (12.5 ±2.9%). There were no significant differences reported between 2006 and 2008.

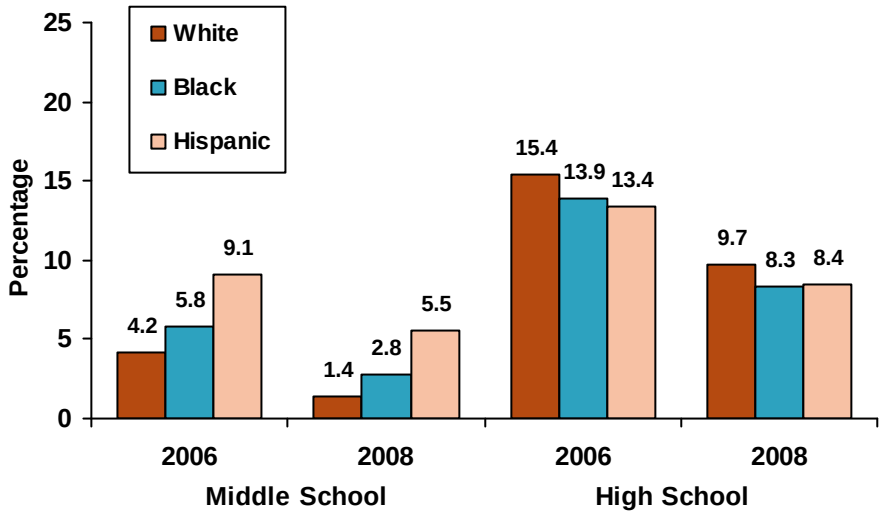
Figure 5. Percentage of middle and high school students who were current users of cigarettes, by race/ethnicity – NJYTS, 2006-2008



Current Cigar Use

Overall, 2.4% (±0.6) of New Jersey middle school students and 9.1% (±1.4) of high school students reported smoking a cigar in the past 30 days preceding the survey. There were demographic differences in current cigar use among New Jersey youth in 2008. Among middle school students, current cigar use among Hispanics (5.5 ±2.4%) was significantly higher than whites (1.4 ±0.6%) (see Figure 6). Further, among high school students, males (11.9 ±2.0%) demonstrated a significantly higher prevalence of current cigar use compared to females (6.2 ±1.5%).

Figure 6. Percentage of middle school and high school students who were current users of cigars, by race/ethnicity – NJYTS, 2006-2008

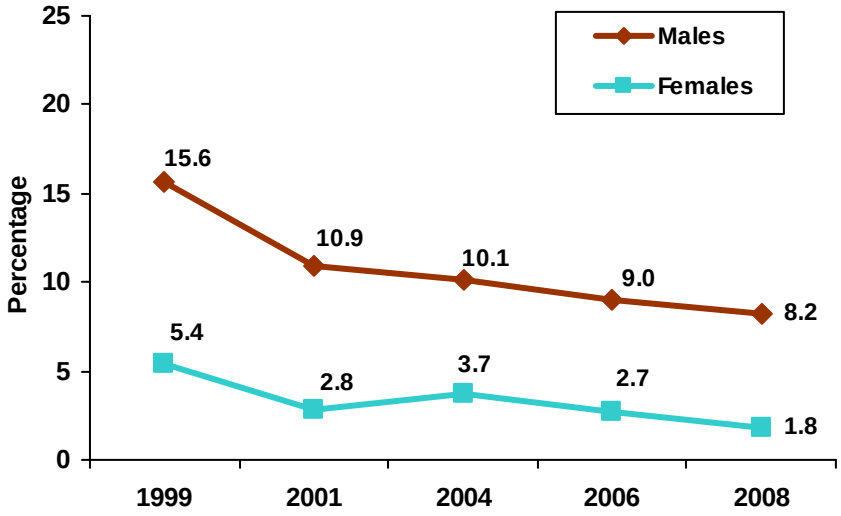


The overall prevalence of current cigar use for middle school students significantly decreased from 6.5% (±1.8) in 2006 to 2.4% (±0.6) in 2008, as well as among both genders and whites (see Figure 6). The overall prevalence of current cigar use among high school students decreased from 14.3% (±1.4) in 2006 to 9.1% (±1.4) in 2008, as well as among four subgroups, including males, whites, 9th graders and 10th graders.

Current Smokeless Tobacco Use

Overall, 1.4% (±0.5) of middle school students and 5.0% (±0.8) of high school students reported using smokeless tobacco in the 30 days preceding the survey. The prevalence of smokeless tobacco use was significantly higher among high school males (8.2 ±1.4%) compared to females (1.8 ±0.8%) in 2008 (see Figure 7). Although current smokeless tobacco use declined in almost every racial/ethnic group and every grade level between 2006 and 2008, none of these declines were significant.

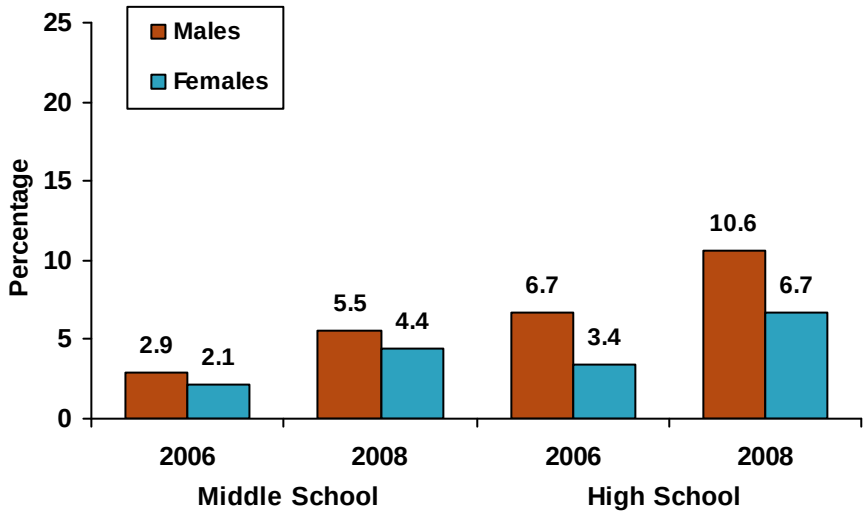
Figure 7. Percentage of all high school students who were current users of smokeless tobacco, by gender – NJYTS, 1999-2008



Current Bidi Use

Bidis are small hand-rolled cigarettes that are often flavored and primarily made in India. In 2008, 4.6% (±1.1) of middle school and 8.7% (±1.5) of high school students reported smoking bidis in the previous 30 days. Significantly more high school males (10.6 ±2.0%) reported current use of bidis compared to females (6.7 ±1.6%) in 2008 (see Figure 8). There were some differences in current bidi use when comparing 2006 to 2008. The overall prevalence of current bidi use among middle school students increased significantly from 2.5% (±0.7) in 2006 to 4.6% (±1.1) in 2008 with 7th graders demonstrating a significantly higher prevalence rate in 2008 compared to 2006. The overall prevalence of current bidi use among high school students also increased significantly from 5.3% (±1.2) in 2006 to 8.7% (±1.5) in 2008, as well as among both genders (see Figure 8) and whites.

Figure 8. Percentage of all middle and high school students who were current users of bidis, by gender – NJYTS, 2006-2008



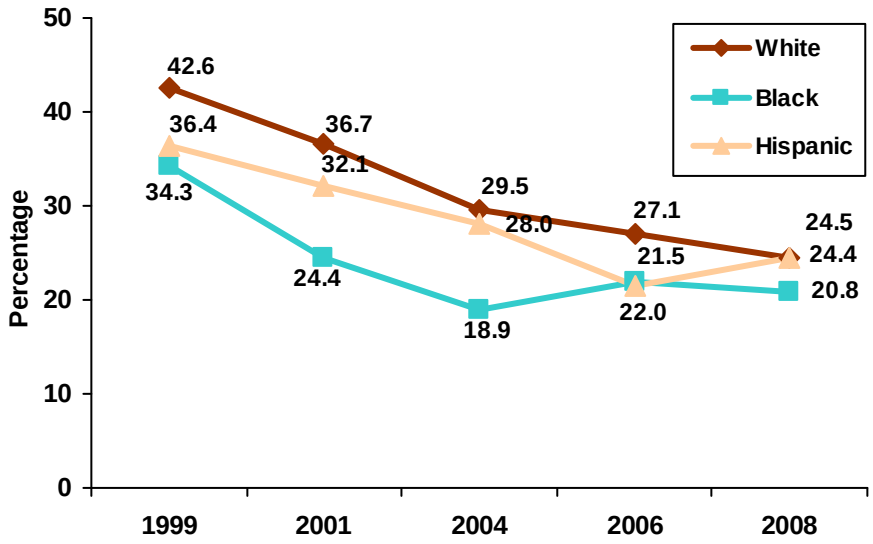
Current Hookah Use

Among middle school students, 4.1% (±1.0) reported current use of a hookah to smoke tobacco or flavored tobacco (see Table 2). There were no demographic differences to report in 2008. However, there were some interesting findings when comparing the current use of hookah to current use of other tobacco products. Middle school students were more likely to report current use of hookah (4.1% ±1.0%) compared to current use of cigars (2.4 ±0.6%) or smokeless tobacco (1.4 ±0.5%) in 2008. Male, female, white, Hispanic, 7th grade and 8th grade middle school students were more likely to report current hookah use than current smokeless tobacco use. Further, white middle school students were more likely to report current hookah use than current cigar use. Among high school students, 9.7% (±1.6) reported current use of a hookah to smoke tobacco or flavored tobacco. High school students were more likely to report current hookah use (9.7 ±1.6%) compared to current smokeless tobacco use (5.0 ±0.8%) with female, white, Hispanic, 10th grade, 11th grade and 12th grade high school students more likely to report current hookah use than current smokeless tobacco use.

Ten Year Trends

Current use of any tobacco product significantly decreased among middle school students from 1999 (18.9 ±2.1%) to 2008 (7.7 ±1.4%). Male and female middle school students had similar declines for current use of any tobacco, while all racial/ethnic groups had significant decreases in current use of any tobacco from 1999 to 2008. There was also a significant decline in current use of any tobacco among high school students from 38.9% (±2.4) in 1999 to 23.3% (±2.4) in 2008. Similar decreases in current use of any tobacco were found in both male and female high school students and all racial/ethnic groups had significant decreases in current use of any tobacco from 1999 to 2008. As shown in Figure 9, white high school students had a larger decline in current use of any tobacco from 1999 to 2008, from 42.6% (±3.1) to 24.4% (±3.2), compared to their black and Hispanic counterparts. However, the overall decline in current use of any tobacco product has slowed, as the prevalence among middle school students and high school students has not significantly changed since 2004.

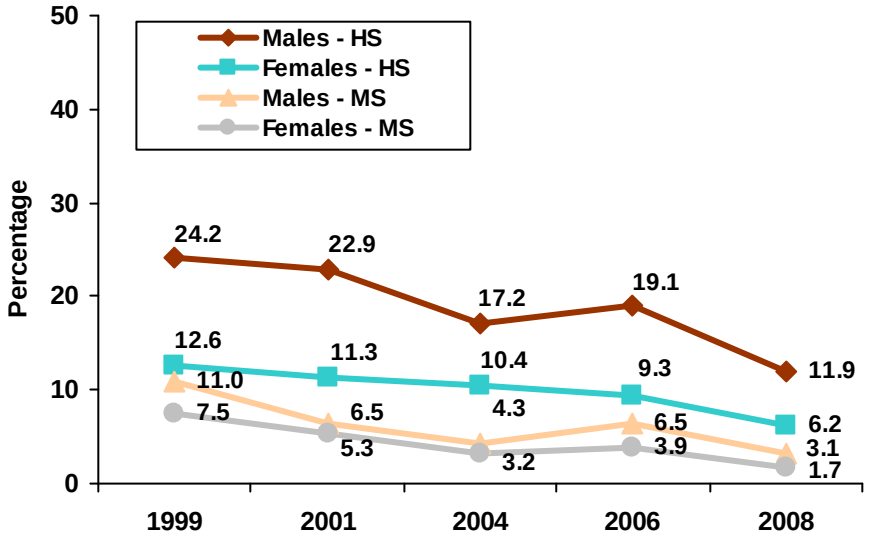
Figure 9. Percentage of high school students who were current users of any tobacco, by race/ethnicity – NJYTS, 1999-2008



Current cigarette use significantly decreased among middle school students from 10.5% (±1.8) in 1999 to 2.8% (±0.7) in 2008 and current cigarette use among high school students also significantly decreased from 27.6% (±2.6) in 1999 to 14.3% (±1.9) in 2008. Among middle school and high school students, all gender, racial/ethnic, and grade level groups demonstrated significant decreases in current cigarette use from 1999 to 2008. However, among both middle school and high school students, the decrease in current cigarette prevalence has not significantly changed since 2004, suggesting the decline is slowing.

Declines in cigar use from 1999 to 2008 were noted, from 9.3% (±1.0) to 2.4% (±0.6) among middle school students and from 18.4% (±1.3) to 9.1% (±1.4) among high school students, and these declines were seen in all gender, racial/ethnic, and grade level groups. High school males demonstrated the greatest decline in cigar use over time (see Figure 10). However, prior to the 2008 NJYTS, current cigar use prevalence had not significantly changed since 1999.

Figure 10. Percentage of middle school and high school students who were current users of cigars, by gender – NJYTS, 1999-2008

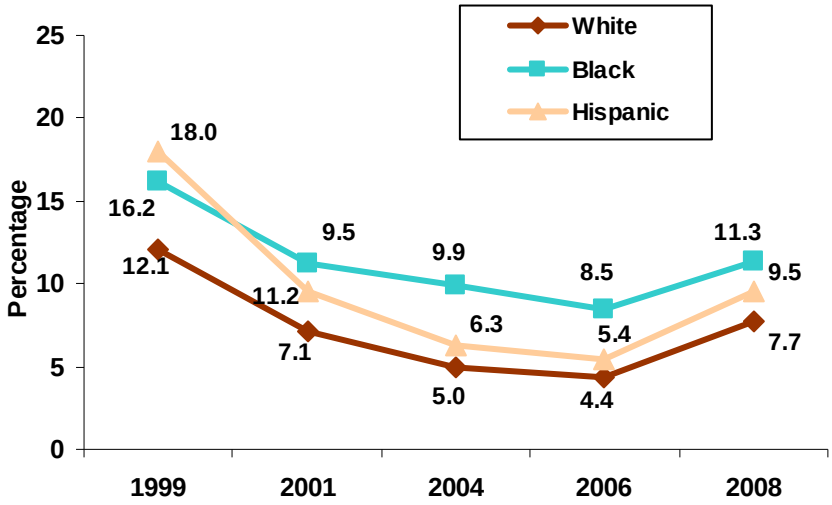


Significant declines in current smokeless tobacco use were observed for middle school students from 4.3% (±0.8) in 1999 to 1.4% (±0.5) in 2008 and among high school students from 10.7% (±1.4) in 1999 to 5.0% (±0.8) in 2008. Among middle and high school students, current smokeless tobacco use significantly declined in all gender, racial/ethnic, and grade level groups from 1999 to 2008. Despite these noted decreases, the use of SLT has not significantly changed among middle school students since 2004 and among high school students since 2001.

Despite slow declines between 2001 and 2006 and a significant increase in overall prevalence between 2006 and 2008, the overall prevalence of bidi use significantly decreased among middle school students from 7.9% (±1.2) in 1999 to 4.6% (±1.1) in 2008 and among high school students from 14.1% (±1.6) in 1999 to 8.7% (±1.5) in 2008. Among Hispanic middle school students, current bidi use prevalence decreased significantly between 1999 (11.1 ±2.4%) and 2006 (3.7 ±1.8%), but the decrease was no longer significant when comparing 1999 (11.1 ±2.4%) to 2008 (7.1 ±2.8%). Similarly,

among 7th graders, current bidi use decreased significantly between 1999 (6.6 ±1.2%) and 2006 (2.0 ±0.6%), but the decrease was no longer significant when comparing 1999 (6.6 ±1.2%) to 2008 (4.2 ±1.5%). Among black high school students, current bidi use decreased significantly between 1999 (16 .2 ±3.1%) and 2006 (8.5 ±2.9%), but the decrease was no longer significant when comparing 1999 (16.2 ±3.1%) to 2008 (11.3 ±3.4%) (see Figure 11). Similarly, among 11th graders, current bidi use decreased significantly between 1999 (16.1 ±3.2%) and 2006 (6.7 ±2.0%), but the decrease was no longer significant when comparing 1999 (16.1 ±3.2%) to 2008 (10.1 ±2.8%).

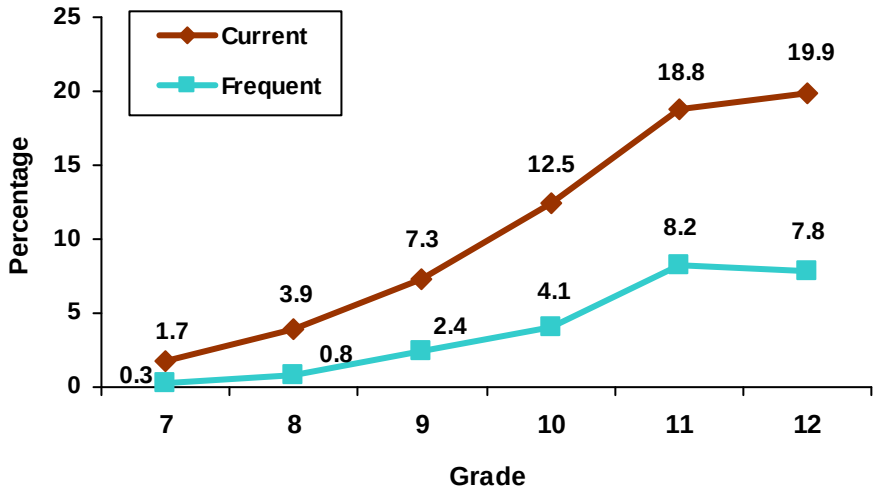
Figure 11. Percentage of all high school students who were current users of bidis, by race/ethnicity – NJYTS, 1999-2008



Frequent Use Of Cigarettes

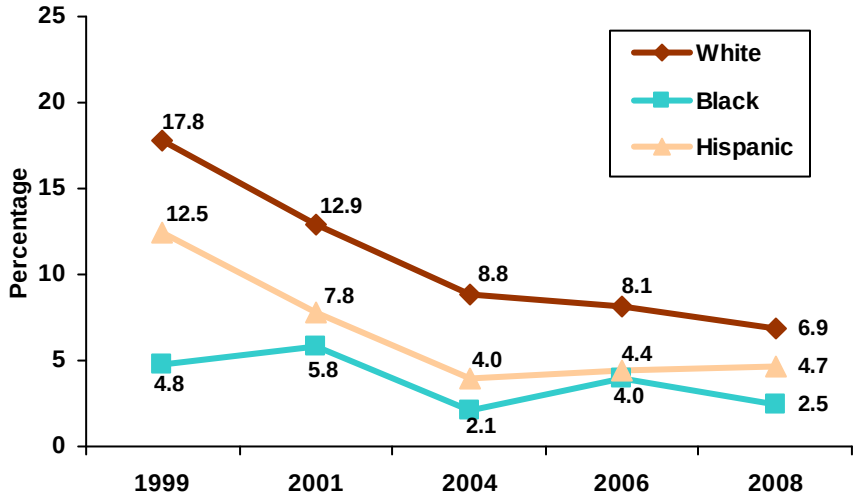
The NJYTS also examined the prevalence of frequent cigarette smoking, defined as smoking cigarettes on 20 or more days of the 30 days preceding the survey.
As in previous years, the prevalence of frequent cigarette smoking trended upward as grade level increased from 7th to 11th grades (see Figure 12). As grade level increased, frequent smokers made up an increasing proportion of current smokers. For example among 8th graders, 19.9% of current smokers were frequent smokers, among 10th graders, 33.0% of current smokers were frequent smokers, and among 12th graders, 39.1% of current smokers were frequent smokers. There was little variation by race/ethnicity in frequent use of cigarettes among middle school students. However, frequent smoking was more prevalent among white high school students (6.9 ±2.0%) compared to black (2.5 ±1.4%) high school students in 2008.

Figure 12. Percentage of all students that were current and frequent cigarette smokers, by school grade – NJYTS, 2008



Frequent cigarette smoking decreased significantly among high school students from 13.8% (±2.2) in 1999 to 5.5% (±1.3) in 2008. Similar patterns of decline were seen for both males and females. Frequent cigarette smoking decreased significantly from 17.8% (±2.5) in 1999 to 6.9% (±2.0) in 2008 among white high school students. Among Hispanic high school students, frequent cigarette smoking rates decreased significantly between 1999 (12.5 ±5.7%) and 2008 (4.7 ±1.8%) (see Figure 13).

Figure 13. Percentage of all high school students who were frequent users of cigarettes, by race/ethnicity – NJYTS, 1999-2008



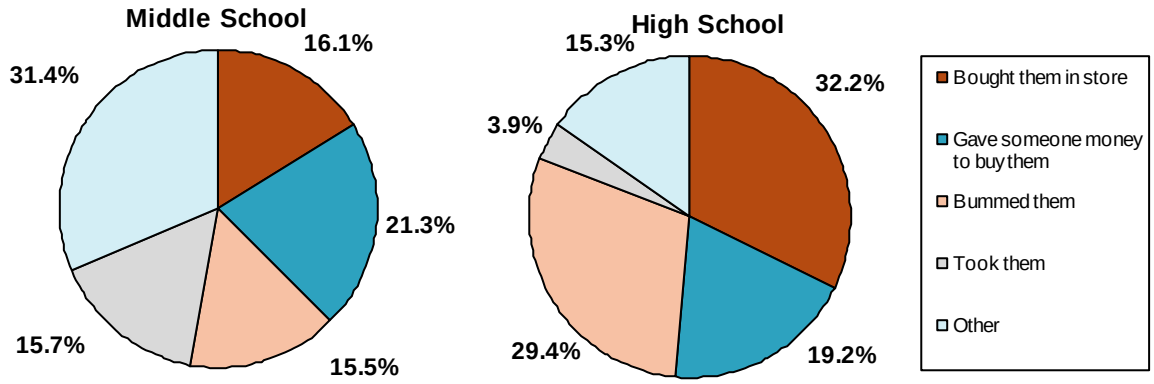
Strategies to Reduce Youth Smoking

Strategies to reduce youth smoking include policies and programs that attempt to change social norms, availability, and/or regulation of tobacco. This section addresses youth access to tobacco, exposure to secondhand smoke, awareness of empowerment program activities, and interest in smoking cessation services among New Jersey youth.

Access and Purchasing of Cigarettes

As shown in Figure 14, giving someone money to purchase cigarettes was the most common method of obtaining cigarettes for current smokers in middle school (21.3 ±9.5%), followed by buying them in stores (16.1 ±8.6%), whereas among current high school smokers, the most common way of obtaining cigarettes was buying the product in stores themselves (32.2 ±6.6%), followed by borrowing or "bumming" them (29.4 ±4.9%).

Figure 14. How current cigarette smokers in middle school and high school (<18 years) usually obtained cigarettes – NJYTS, 2008



Among current smokers under the age of 18, the percentage of those who reported usually obtaining their cigarettes by buying them in stores has increased over time; among middle school students from 7.2% (±3.7) in 2004 to 16.1% (±8.6) in 2008 and among high school students from 28.8% (±5.5) in 2004 to 32.2% (±6.6) in 2008. It should be noted that as of April 2006 in New Jersey, the legal age to purchase cigarettes increased from 18 years to 19 years. The 2008 NJYTS did not allow for the identification of current smokers who were between 18 and 19 years of age, therefore estimates are likely to be lower with regards to underage purchasing.

In 2008, 64.1% (±7.1) of current smokers in high school under the age of 18 who reported buying or trying to buy cigarettes in the 30 days preceding the survey reported they were not asked to provide proof of age compared to 60.2% (±5.0) in 2006. Although the 2006 report noted a significant decline in the percent of current high school smokers under then age of 18 who reported buying or trying to buy cigarettes in the 30 days preceding the survey from the 1999 estimate of 67.1% (±4.4), the decline was no longer significant when comparing 1999 to 2008.

Youth may obtain cigarettes through the ability to purchase a single cigarette at a time. These single cigarettes are known as loose cigarettes or "loosies." The sale of loose cigarettes is illegal in New Jersey, although many New Jersey youth reported access to them. Similar to 2006, among middle school students, 33.9% (±3.8) reported awareness of places that sold loose cigarettes, and black (58.6 ±7.8%) and Hispanic students (47.3 ±5.5%) were more likely than white students (24.4 ±2.5%) to report awareness of these places. Also similar to 2006, 38.2% (±4.5) of high school students reported awareness of places that sold loose cigarettes. Similarly, black (59.3 ±5.6%) and Hispanic (55.3 ±5.2%) high school students were more likely than white students (27.9 ±3.4%) to report awareness of places that sold loose cigarettes.

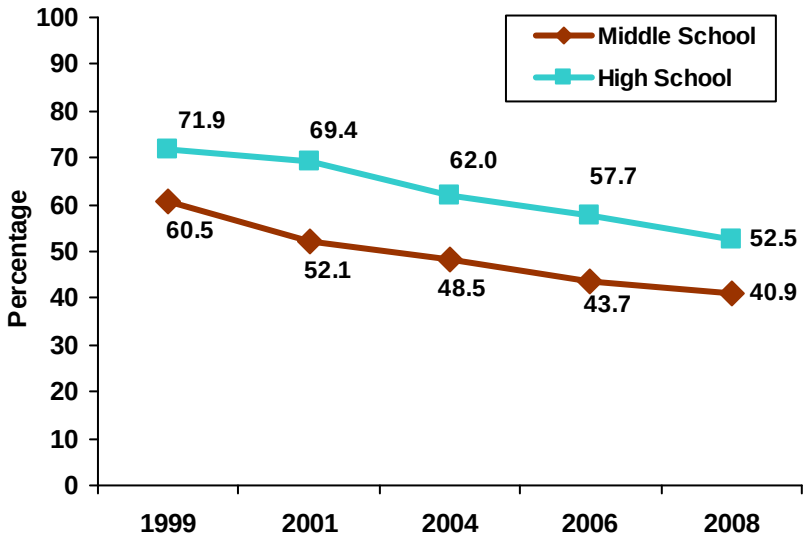
Secondhand Smoke

In 2008, 40.9% (±2.7) of middle school and 52.5% (±2.5) of high school students reported being exposed to secondhand smoke in either rooms or in cars in the seven days preceding the survey. Overall, these findings represent a 32% decline in self-reported secondhand smoke exposure among middle school students and a 27% decline among high school students since 1999 (see Figure 15). These declines were statistically significant when comparing 2008 to 1999.

In 2008, 80.7% (±1.7) of middle school and 78.4% of high school students reported that smoking was never allowed inside their home. Among all middle school students, 35.2% (±3.0) reported living with a smoker and among middle school students who reported being current smokers, 69.0% (±11.4) reported living with someone who currently smokes cigarettes. Likewise, among high school students, 36.7% (±3.1) reported living with a smoker and among high school students who were current smokers, 57.5% (±6.4) reported living with someone who currently smokes cigarettes.

Three out of four (74.9 ±2.5%) middle school students reported that smoking was never allowed in the vehicle they rode or drove in most often. Among high school students, 68.0% (±2.7) reported that smoking was never allowed in the vehicle they rode or drove in the most. Although rates among middle school and high school students trended upward, the increases were not statistically significant when comparing 2006 to 2008.

Figure 15. Percentage of middle and high school students who were exposed to secondhand smoke in the past 7 days, by year – NJYTS, 1999-2008



On January 15, 2006, The New Jersey Smoke-Free Air Act was signed into law and was enacted on April 15, 2006. The Act prohibits smoking in most indoor public places and workplaces. The 2008 NJYTS asked students about possible exposure to SHS while at work. Among high school students, 1.9% (±0.5) reported breathing the smoke from someone that was smoking in the place where they worked, a significant decline from 2006 (10.8 ±1.3%).

Youth Empowerment

The 2008 NJYTS included questions on awareness of CTCP youth advocacy activities (i.e., REBEL or REBEL 2). In 2008, 27.2% (±5.1) of middle school students had heard of the statewide youth-led anti-tobacco movement. Awareness of REBEL among middle school students decreased significantly from 2001 to 2006 and remained unchanged from 2006 to 2008. In 2008, 2.6% (±0.8) of middle school students reported being members of REBEL and 6.7% (±2.5) had ever participated in a REBEL event or meeting. In addition, 12.0% (±2.8) reported having participated in any school sponsored event to discourage people their age from using cigarettes or other tobacco products in the past 12 months, while 4.7% (±1.3) reported being involved in tobacco prevention extracurricular activities.

Overall awareness of REBEL among high school students significantly increased from 34.1% (±6.3) in 2006 to 48.8% (±8.2) in 2008. In 2008, 5.3% (±1.3) of high school students reported being members of REBEL and 14.0% (±3.3) reported having ever participating in a REBEL event or meeting. In addition, 10.0% (±1.6) reported having participated in any school sponsored event to discourage people their age from using cigarettes or other tobacco products in the past 12 months, while 6.4% (±1.2) reported being involved in any tobacco prevention extracurricular activities. There were no differences in REBEL membership or participation by gender, race/ethnicity, or grade level.

Smoking Cessation

In 2008, 50.5% (±5.3) of current high school smokers reported the desire to stop smoking. There were no significant differences in the desire to quit smoking by gender, race/ethnicity or grade level in 2008. In addition, there were no statistically significant differences in the proportion of current smokers who wanted to stop smoking between 2006 and 2008.

Due to the high proportion of high school smokers reporting the desire to quit, it is reasonable to examine their knowledge and exposure to certain cessation aids. Among frequent high school smokers, 29.3% (±6.7) had heard of NJQuitline, a telephone counseling service to help teens and adults quit smoking and 22.7% (±6.6) had heard of NJQuitnet, a website to help teens and adults quit smoking. High school males (30.3% ±7.0) were more likely to report having heard of NJQuitnet compared to high school females (12.5% ±7.0). Awareness of NJ Quit services remained unchanged when comparing 2008 to 2006. Further, among frequent high school smokers, 56.6% (±8.4) reported they had a doctor, dentist, nurse or other health professional ask them if they smoked during the previous 12 months. In addition, 47.5% (±9.1) reported that a health professional had advised them not to smoke. Hispanic high school students (69.8 ±16.9%) were more likely than black high school students (20.9 ±21.9%) to report that a health professional advised them not to smoke. The proportion of students being asked about smoking and being advised not to smoke in 2008 remained statistically unchanged from 2006.

CONCLUSIONS

Overview of Findings

The *2008 New Jersey Youth Tobacco Survey: A Statewide Report* is the culmination of ten years of New Jersey youth tobacco use surveillance. Using results from the 2008 NJYTS, as well as providing comparisons with data collected from previous NJYTS administrations (1999, 2001, 2004 and 2006) and national trends, this report evaluates the CTCP's progress toward the achievement of its goals by monitoring key indicators related to short and long-term outcomes of the program. Several successes, as well as areas for improvement, are described below.

The 2008 NJYTS results demonstrate continued improvement over time in reducing ever and current tobacco use among New Jersey youth. Since 1999, the prevalence of lifetime use of any tobacco product decreased by 18.9% among middle school students and by 18.0% among high school students. Current use of any tobacco decreased by 11.2% among middle school students to a historic low of 7.7% and by 15.6% among high school students to a historic low of 23.3%. Current cigarette smoking prevalence also decreased dramatically between 1999 and 2008, by 7.7% among middle school students to 2.8% and by 13.3% among high school students to 14.3% in 2008. Based on these data, New Jersey reached its Healthy NJ 2010 target to reduce the high school cigarette smoking prevalence to 15%.[1] Lifetime and current use of cigarettes, cigars, SLT, and bidis have decreased over time since 2001, but appear to be leveling off.

It is useful to consider results from the NJYTS in the context of other surveys assessing youth tobacco use (e.g., National Youth Risk Behavior Survey (NYRBS). While direct comparisons are not valid, it is possible to compare trends over time. According to the NYRBS, the percentage of all U.S. high school students who reported ever smoking cigarettes decreased significantly from 64% in 2001 to 50% in 2007.[2] This downward trend is similarly noted for New Jersey students in the NJYTS data. The NJYTS demonstrated that the lifetime smoking prevalence among New Jersey high school students decreased from 60% in 2001 to 41% in 2006 and 37% in 2008. Further, similar trends are noted for current cigarette smoking for high school students. The NYRBS found current cigarette smoking among all U.S. high school students to be 29% in 2001 and 20% in 2007,[2] while the NJYTS found current smoking among New Jersey high school students to be 25% in 2001, 16% in 2006 and 14% in 2008. However, consistent with the NJYTS findings, data from the YRBS also demonstrate a leveling off of current cigarette use among all U.S. high school students between 2003 and 2007.

The previously noted declines in lifetime and current use prevalence among New Jersey youth are worthy of praise. Despite the low current smoking prevalence among New Jersey high school students, gender and racial/ethnic disparities in overall tobacco use persist. High school males reported greater use of any tobacco, cigars, smokeless tobacco, and bidis compared to high school females. Compared to whites, Hispanic middle school students had higher rates of current use of any tobacco, cigarettes, and cigars and current use of cigarettes was higher among white and Hispanic high school students compared to black students. However, current use of *any* tobacco was similar among all groups, largely because use of non-cigarette tobacco products was higher among black students. These findings underscore the importance of monitoring the differing patterns of tobacco product use across sex and racial/ethnic groups.

New Jersey youth continue to experiment with tobacco products other than cigarettes. Although the 2008 NJYTS demonstrated a significant decline in current cigar use for middle and high school students and among several subgroups, current use of SLT remained unchanged. In addition, rates of bidi use increased significantly for middle and high school students and among several subgroups, including male, female, and white high school students since 2006. Furthermore, the addition of questions on hookah use in the 2008 survey allowed us to measure the popularity of this emerging product. A hookah, also referred to as a water pipe, hubble-bubble or narghile, is used to smoke tobacco, often flavored, usually in a group setting.[3] Current use of hookah is notable, as NJYTS data suggests hookah is the third most popular tobacco product among middle school students and the second most popular tobacco product among high school students.

New Jersey youth continue to obtain their cigarettes from retail outlets. There was a significant increase in the proportion of smokers who purchased their cigarettes from commercial sources from 2004 to 2008. More than one out of three students indicated awareness of retailers that (illegally) sold single or loose cigarettes (aka “loosies”). Black and Hispanic middle and high school students were more likely to than white students to know where to buy single cigarettes.

Secondhand smoke exposure continues to be a CTCP priority area monitored by the NJYTS, particularly given the enactment of The New Jersey Smoke-Free Air Act (SFAA) on April 15, 2006. There was a significant decline between 2006 and 2008 in the percent of high school students reporting SHS exposure at work, suggesting the SFAA may have had a positive effect on this priority population. However, 40% of middle school students and more than half of all high school students reported SHS exposure in either rooms or cars during the seven days preceding the survey. Overall SHS exposure rates remained unchanged from 2006 to 2008.

Roughly half of high school students reported having ever heard of the REBEL program, representing a significant increase in awareness from 2006. This represents the first increase in awareness among high school students since 2001. However, only 5% of high school students reported participation or membership in REBEL.

Limitations

There are several limitations of the 2008 NJYTS that deserve attention. First, in 2006 New Jersey passed a law to raise the legal age to purchase tobacco from 18 to 19 years. The NJYTS does not ask survey participants to identify their exact age if they were older than 18. Thus, we are not able to examine tobacco purchasing practices among those respondents older than 18 years of age but younger than 19; 7.1% of high school students indicated they were over the age of 18. Second, private schools were in the sampling frame in the 1999, 2001 and 2004 NJYTS administrations, but not in the 2006 and 2008 protocols. Analyses of NJYTS data indicates that the inclusion of private school students resulted in slightly lower estimates of tobacco use,[4] and as such, should be considered when comparing trends over time. Third, the question about use of bidis, while consistent with questions about other tobacco products, did differ from previous survey administrations. This change in question wording may affect reported prevalence. Lastly, while NJYTS data is useful to monitor outcome indicators such as smoking prevalence, it cannot be used to determine causality and as such, the NJYTS cannot assess the direct impact of CTCP's programming on the prevalence of tobacco use among New Jersey youth.

Recommendations

There have been considerable achievements in the reduction of tobacco use among New Jersey youth. However, the recent success in reducing cigarette use among young people may be partially offset by increases or slow declines in the use of other tobacco products. The growing similarity in prevalence of cigarette smoking and other tobacco products is cause for concern. For example, results from the newly added questions about hookah demonstrate a desire by youth to experiment and adopt the use of this alternative tobacco product. Strategies to prevent and reduce youth cigarette use -price, access, education, and counter marketing- must be applied to *all* tobacco products.

Combined with efforts to prevent and reduce the use of all tobacco products, the CTCP should actively engage more minority youth in tobacco control programming activities to diminish tobacco use disparities. Gender and racial/ethnic disparities are present in ever

and current use of tobacco products. These disparities may be a result of unequal declines in tobacco use across demographic groups and a preference, by certain groups, for particular tobacco products.

Several federal and state laws have been adopted over the past decade to limit commercial access to tobacco products in an effort to reduce the prevalence of youth smoking. While the passage of these laws signals a shift in societal norms, research demonstrates mixed findings with regard to their effectiveness in reducing youth smoking.[5] Since its inception in 1996, the TASE program is credited with increasing to 88% in 2008 the proportion of merchants in compliance with the law to refuse the sale of tobacco products to under-aged customers through random, unannounced inspections. However, a large proportion of youth continues to obtain their cigarettes from retail outlets and/or reported not being asked for proof of age when buying cigarettes. In addition, many youth indicated awareness of retailers that sold single or loose cigarettes. Due to restructuring of the TASE program, the number of random retail inspections will decrease in 2009, which calls for closely monitoring the impact of fewer inspections on merchant compliance rates. Strong tobacco sales regulations and enforcement should reduce illegal sales of tobacco products to minors.

Clean indoor air policies as well as private household rules will decrease SHS exposure among youth.[6] New Jersey passed the SFAA in 2006 banning smoking in public places, including worksites. Presently only 2% of high school students reported SHS at work, suggesting a positive impact of the SFAA. However, youth exposure to smoke in either rooms or cars remained unchanged. To reduce SHS exposure among youth, the CTCP should promote the adoption of voluntary smoking restrictions to increase the prevalence of smoke-free homes and cars.

While awareness of REBEL significantly increased among high school students, membership or participation in REBEL events remains low among middle and high school students. Given the strong evidence supporting high cigarette taxes and clean indoor air laws, both of which New Jersey has passed in recent years, it would be difficult to attribute the State's low youth smoking prevalence to REBEL, especially since most reductions in tobacco use occurred prior to 2008. In 2009, REBEL shifted its focus from youth empowerment to youth activism and efforts to improve implementation and enforcement of school tobacco policies. Policy interventions, youth programs, media, and cessation efforts all serve to reinforce one another.[7] To see the greatest impact, the CTCP should implement youth programs in tandem with media and community-based initiatives and work to better integrate these efforts.

TECHNICAL NOTES

Instrument

Students were surveyed using the 2008 NJYTS instrument which was designed to meet specific needs of the CTCP. The NJYTS addresses eight content areas: tobacco prevalence, access to tobacco, smoking cessation, smoking intention, perceived consequences of tobacco use, mass media, awareness of tobacco industry strategies, and environmental tobacco smoke. In 2008, race/ethnicity data was collected in a manner consistent with the 2008 NYTS and NRBS, which differs from previous administrations of the NJYTS. In order to draw comparisons to state and national trends from previous YTS administrations, the data collected from these two variables were combined to create an overall race variable according to the algorithm current used for the YRBS.[2]

Sample

A two-stage cluster design was used to obtain a representative sample. In the first stage the sampling frame was constructed from all public middle and high schools in New Jersey and was then stratified by percent minority enrollment. Schools were selected with a probability proportional to size (PPS), within each stratum, without replacement, for a total of 71 middle schools and 71 high schools. The second stage of sampling involved the random selection of approximately 3 classes within sampled schools.

The NJYTS surveyed a representative sample of all public middle and high school students in New Jersey. The survey was administered to 3,051 middle school students (grades 7-8) in 62 schools and 3,010 high school students (grades 9-12) in 67 schools throughout New Jersey. An overall participation rate of 81% in high schools and 81% in middle schools was achieved. Overall participation rates were calculated by multiplying the school participation rate by the student participation rate. The data were weighted to adjust for non-response and the varying probabilities of selection providing results representative of New Jersey's 7th-12th grade student population.

Analysis

SUDAAN statistical software, which accounts for the complex sample design of the survey, was used to generate 95% confidence intervals for prevalence estimates. Differences between estimates were considered statistically significant at the p = 0.05 level if the 95% confidence intervals did not overlap.[8] Hypothesis testing based on a t-statistic (see formula) was used to determine whether the changes over time were statistically significant. If the absolute value of the computed t-statistic was greater than 1.96, the difference was considered statistically significant with a $p \leq 0.05$.

$$t = \frac{(P_{2006} - P_{2008})}{\sqrt{(SE_{2006})^2 + (SE_{2008})^2}}$$

GLOSSARY

Bidis	Small, brown, hand-rolled cigarettes primarily made in India and other Southeast Asian countries; often flavored.
CDC	Centers for Disease Control and Prevention; an agency of the US Department of Health and Human Services.
CTCP	The Comprehensive Tobacco Control Program is a program of the New Jersey Department of Health and Senior Services. Its mission is to decrease deaths, sickness and disability among New Jersey residents who use tobacco or are exposed to SHS.
Current Use	Defined as the use of tobacco on one or more of the 30 days preceding the survey.
Ever Use	Defined as the use of a tobacco product over the course of one's lifetime.
Frequent Use	Defined as the use of a tobacco product on 20 or more days of the past 30 days.
High School Students	Comprised of students who were in 9th, 10th, 11th, or 12th grade at the time of the survey.
Hookah	A water pipe that is used to smoke tobacco and flavored tobacco usually in a group setting; also called hubble-bubble, water-pipe or narghile.
Middle School Students	Comprised of students who were in the 7^{th} or 8^{th} grade at the time of the survey.
NJYRBS	The New Jersey Youth Risk Behavior Survey is a population-based survey designed to monitor priority health risk behaviors that contribute markedly to the leading causes of death, disability, and social problems among youth in NJ.
SHS	Secondhand smoke is a mixture of the smoke given off by the burning end of a cigarette, pipe, or cigar and the smoke exhaled from the lungs of smokers.
TASE	Tobacco Age of Sale Enforcement

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