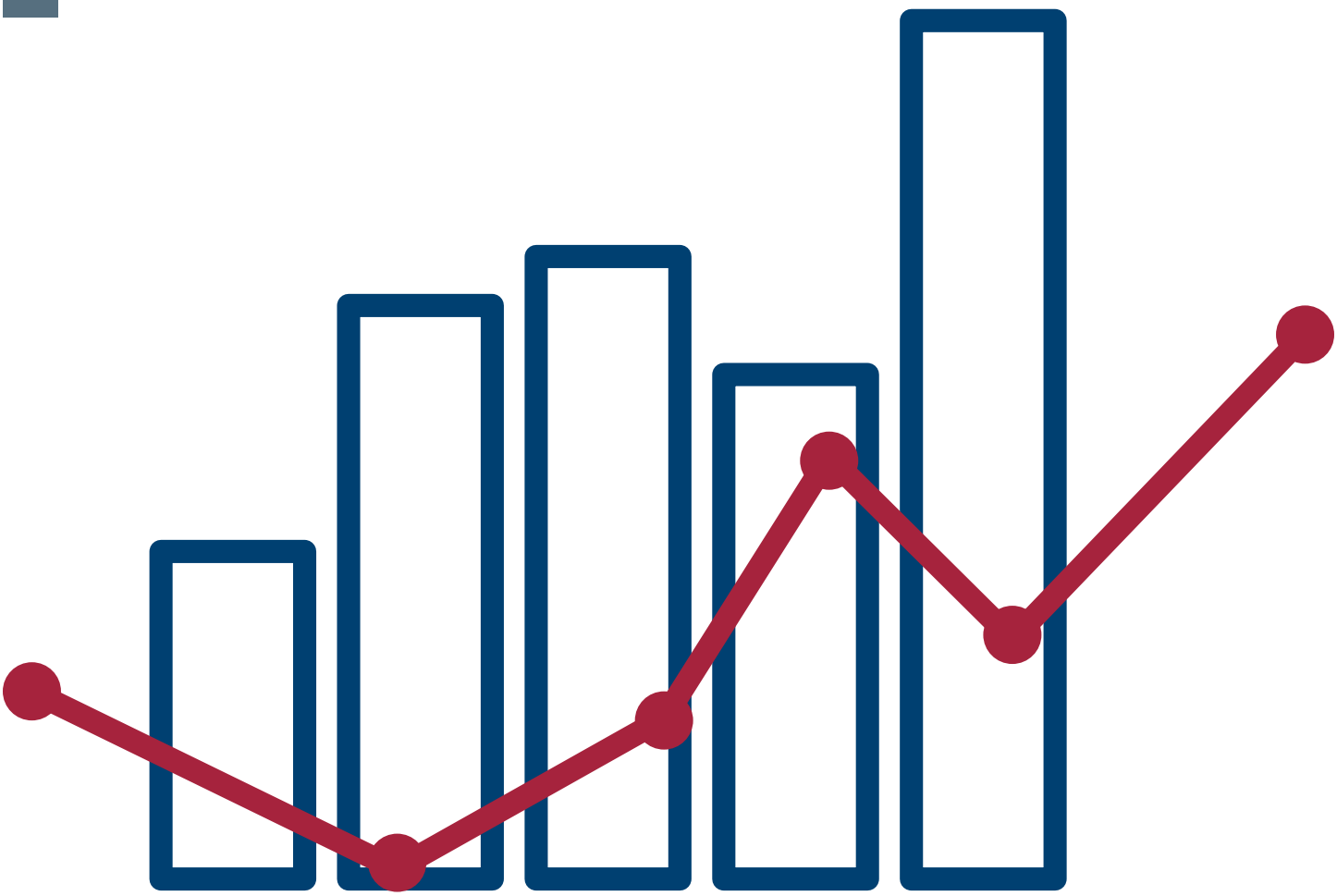
WEST VIRGINIA YOUTH RISK BEHAVIOR SURVEY, 2015:

Tobacco Use



West Virginia Department of EDUCATION
Research, Accountability, & Data Governance

West Virginia Youth Risk Behavior Survey, 2015: Tobacco Use Report

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This research study was reviewed and approved by the West Virginia Department of Education Institutional Review Board (WVDE-IRB-025). Should you desire additional details about this study's approval status, contact the WVDE IRB chairperson, Patricia Cahape Hammer (phammer@k12.wv.us).

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Introduction

The Youth Risk Behavior Surveillance System was developed by the Centers for Disease Control and Prevention (CDC) in collaboration with state and local departments of education and health, national education and health organizations, and other federal agencies. The Youth Risk Behavior Survey (YRBS), the state and local level component of this system, assesses how certain youth risk behaviors change over time. The YRBS focuses on priority health risk behaviors established during youth that may affect academic performance and result in significant mortality and morbidity rates during both youth and adulthood. It assesses behaviors in six categories: (a) injury and violence, (b) tobacco use, (c) alcohol and other drug use, (d) sexual behaviors, (e) dietary behaviors, and (f) physical activity.

With funding from CDC and with the assistance of the RESA Regional School Wellness Specialists, the YRBS has been conducted by the West Virginia Department of Education (WVDE) since 1993 for high schools and since 1999 for middle schools.

The following series of YRBS topical reports, available at http://wvde.state.wv.us/research/reports2017.html, give a detailed snapshot of particular student risk behaviors across programmatic levels from high school back to early middle school ages:

- West Virginia Youth Risk Behavior Survey, 2015: Alcohol Use
- West Virginia Youth Risk Behavior Survey, 2015: Bullying and Suicidal Ideation
- West Virginia Youth Risk Behavior Survey, 2015: Dietary Behavior
- West Virginia Youth Risk Behavior Survey, 2015: Disease Prevention
- West Virginia Youth Risk Behavior Survey, 2015: Drug Use
- West Virginia Youth Risk Behavior Survey, 2015: Injury Risk
- West Virginia Youth Risk Behavior Survey, 2015: Physical Activity
- West Virginia Youth Risk Behavior Survey, 2015: Sexual Behavior
- West Virginia Youth Risk Behavior Survey, 2015: Tobacco Use
- West Virginia Youth Risk Behavior Survey, 2015: Violence
- West Virginia Youth Risk Behavior Survey, 2015: Weight Management

Methods

See the Appendix page 27 for details about sampling procedures, sample characteristics, questionnaires, weighting of the raw data, data analysis, and interpretation of the results.

Results

The results include time trend graphs to show how youth behaviors have changed over time through 2015. Results include prevalence by demographic characteristics such as gender and grade level. High school results are presented first, followed by middle school data where applicable. Results are not available for high school students for 2001 and middle school students for 2003 and 2005.

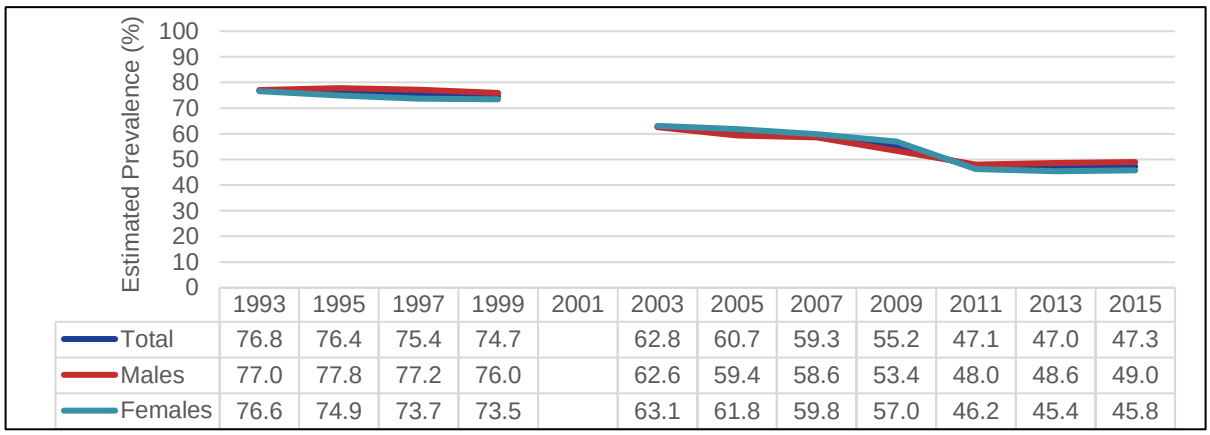
Ever Tried Cigarette Smoking

Definition: Weighted percentage of students who ever tried cigarette smoking, even one or two puffs.

High school students

The prevalence of ever tried cigarette smoking among high school students was 47.3% in 2015. West Virginia ranked second highest in the nation on this indictor in 2015 (Kann et al., 2016).

Figure 1 displays the prevalence of ever tried cigarette smoking among high school students for the years 1993-2015. The results indicate that the prevalence significantly decreased during that time for the total population and among both males and females.



	1993	1995	1997	1999	2001	2003	2005	2007	2009	2011	2013	2015
Total	76.8	76.4	75.4	74.7		62.8	60.7	59.3	55.2	47.1	47.0	47.3
Males	77.0	77.8	77.2	76.0		62.6	59.4	58.6	53.4	48.0	48.6	49.0
Females	76.6	74.9	73.7	73.5		63.1	61.8	59.8	57.0	46.2	45.4	45.8

Figure 1. Prevalence of Ever Tried Cigarette Smoking Among WV High School Students
Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 1 displays the prevalence of ever tried cigarette smoking among high school students by demographic characteristics for 2015. The results indicate that there was no significant gender difference for this indicator. However, the results do show that the prevalence was significantly higher among 11th- and 12th-grade students than among 9th-grade students.

Table 1. Prevalence of Ever Tried Cigarette Smoking Among WV High School Students by Gender and Grade Level, 2015

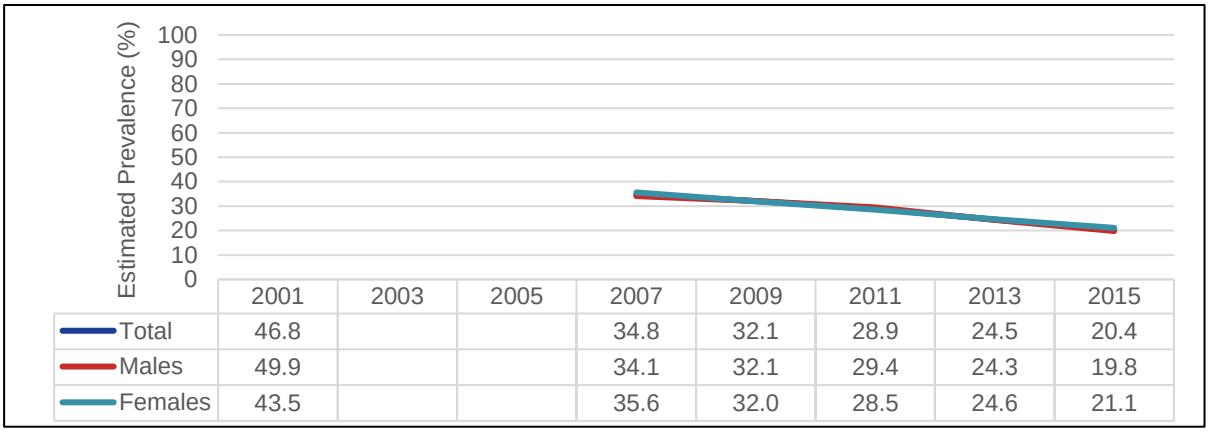
Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	47.3	43.2-51.5	36,267
Male	49.0	43.4-54.6	18,678
Female	45.8	41.6-50.1	17,569
9th	37.2	31.0-43.4	7,794
10th	49.1	40.4-57.7	9,586
11th	50.2	44.0-56.4	9,297
12th	54.4	45.7-63.1	9,391

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

Middle school students

The prevalence of ever tried cigarette smoking among middle school students was 20.4% in 2015.

Figure 2 shows the prevalence of ever tried cigarette smoking among middle school students significantly decreased from 2001 to 2015 for the total population and among both males and females.



	2001	2003	2005	2007	2009	2011	2013	2015
Total	46.8			34.8	32.1	28.9	24.5	20.4
Males	49.9			34.1	32.1	29.4	24.3	19.8
Females	43.5			35.6	32.0	28.5	24.6	21.1

Figure 2. Prevalence of Ever Tried Cigarette Smoking Among WV Middle School Students
Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 2 displays the prevalence of ever tried cigarette smoking among middle school students by demographic characteristics for 2015. While the results indicate no significant gender difference, the prevalence was significantly higher among 8th-grade students than among 6th- and 7th-grade students.

Table 2. Prevalence of Ever Tried Cigarette Smoking Among WV Middle School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	20.4	16.8-24.0	11,788
Male	19.8	15.8-23.9	5,898
Female	21.1	16.7-25.5	5,864
6th	11.3	7.1-15.5	2,072
7th	19.5	14.8-24.3	3,842
8th	29.8	25.6-37.1	5,774

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

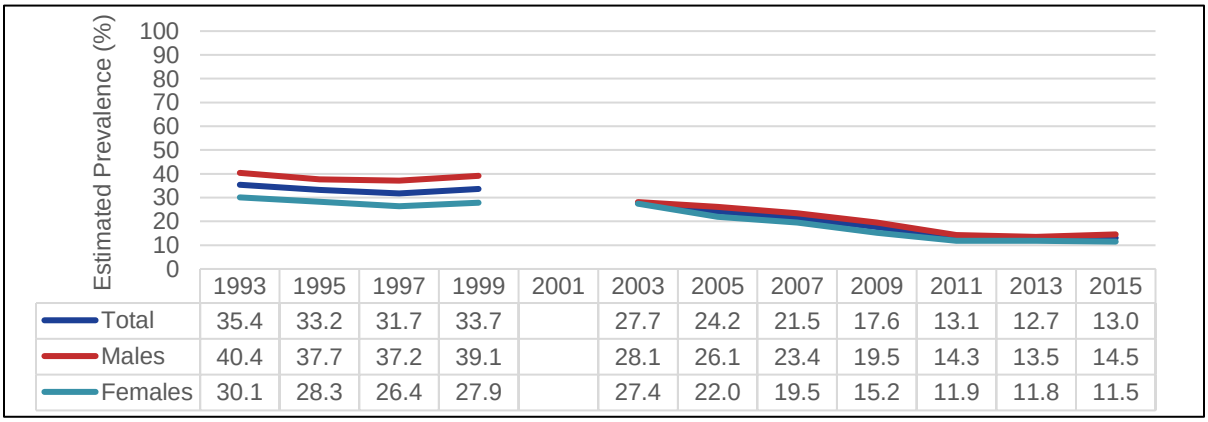
Smoked a Whole Cigarette Before Age 13 (High School) or Age 11 (Middle School)

Definition: Weighted percentage of students who smoked a whole cigarette before age 13 (high school) or age 11 (middle school).

High school students

The prevalence of smoked a whole cigarette before age 13 among high school students was 13.0% in 2015. West Virginia ranked second highest in the nation on this indicator (Kann et al., 2016).

Figure 3 displays the prevalence of this indicator among high school students for 1993-2015. The results indicate that the prevalence was stable from 1993 to 2003 and then significantly decreased from 2003 to 2015 for the total population and among females. The prevalence among males was stable 1993-1999 and significantly decreased from 1999 to 2015.



	1993	1995	1997	1999	2001	2003	2005	2007	2009	2011	2013	2015
Total	35.4	33.2	31.7	33.7		27.7	24.2	21.5	17.6	13.1	12.7	13.0
Males	40.4	37.7	37.2	39.1		28.1	26.1	23.4	19.5	14.3	13.5	14.5
Females	30.1	28.3	26.4	27.9		27.4	22.0	19.5	15.2	11.9	11.8	11.5

Figure 3. Prevalence of Smoked a Whole Cigarette Before Age 13 Among WV High School Students

Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 3 displays the prevalence of smoked a whole cigarette before age 13 among high school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences for early cigarette smoking.

Table 3. Prevalence of Smoked a Whole Cigarette Before Age 13 Among WV High School Students by Gender and Grade Level, 2015

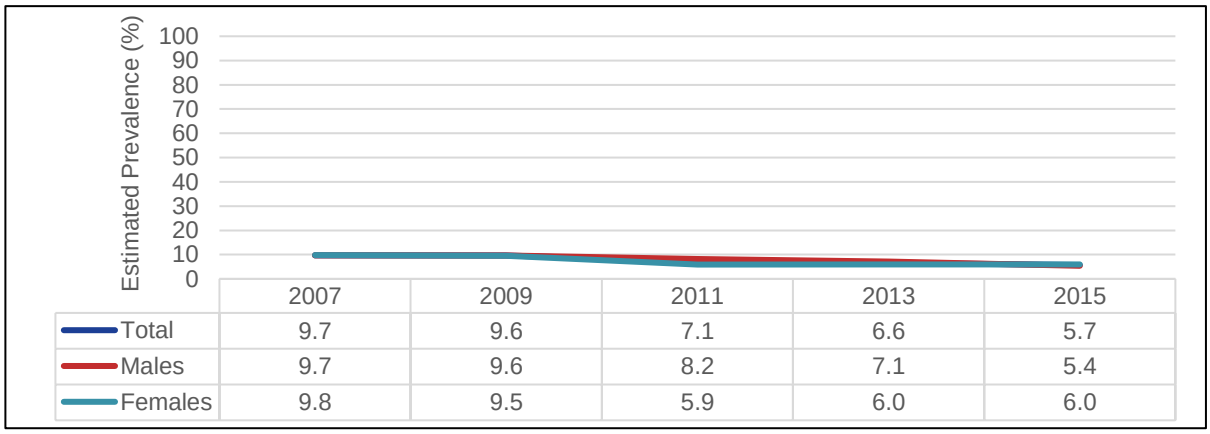
Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	13.0	9.9-16.1	9,896
Male	14.5	10.7-18.3	5,556
Female	11.5	8.1-14.8	4,340
9th	10.6	7.3-13.9	2,214
10th	18.3	12.2-24.3	3,554
11th	11.8	7.8-15.8	2,176
2th	10.9	4.8-17.0	1,868

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

Middle school students

The prevalence of smoked a whole cigarette before age 11 among middle school students was 5.7% in 2015.

Figure 4 shows the prevalence of smoked a whole cigarette before age 11 among middle school students for 2007-2015. The results indicate the prevalence significantly decreased from 2007 to 2015 for the total population and among both males and females.



	2007	2009	2011	2013	2015
Total	9.7	9.6	7.1	6.6	5.7
Males	9.7	9.6	8.2	7.1	5.4
Females	9.8	9.5	5.9	6.0	6.0

Figure 4. Prevalence of Smoked a Whole Cigarette Before Age 11 Among WV Middle School Students

Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 4 displays the prevalence of smoked a whole cigarette before age 11 among middle school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences for early cigarette smoking.

Table 4. Prevalence of Smoked a Whole Cigarette Before Age 11 Among WV Middle School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	5.7	4.0-7.3	3,230
Male	5.4	3.4-7.4	1,581
Female	6.0	3.3-8.6	1,649
6th	4.8	2.4-7.3	843
7th	3.7	1.9-5.5	723
8th	8.2	5.0-11.4	1,595

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

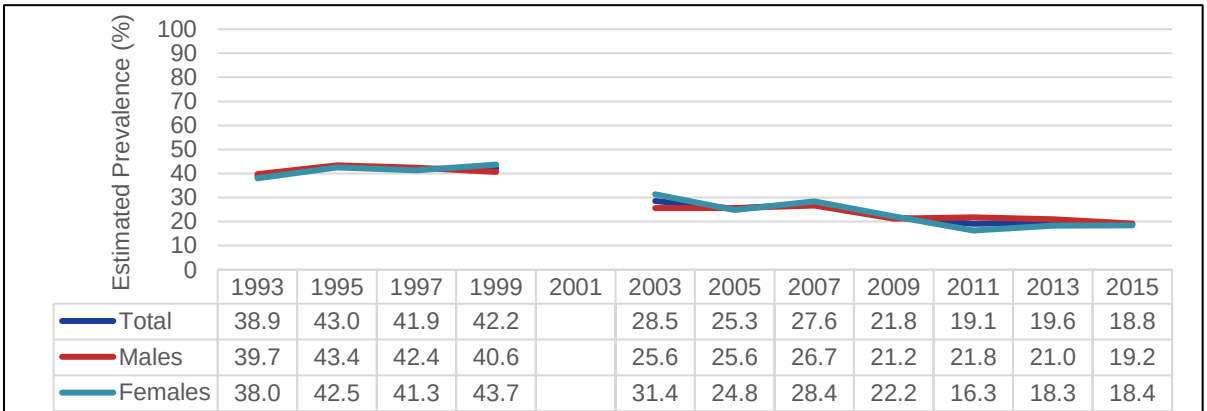
Currently Smoked Cigarettes

Definition: Weighted percentage of students who currently smoked cigarettes (on at least 1 day during the 30 days before the survey).

High school students

The prevalence of currently smoked cigarettes among high school students was 18.8% in 2015. West Virginia ranked highest in the nation for current cigarette smoking among high school students in 2015 (Kann et al., 2016).

Figure 5 displays the prevalence of this indicator among high school students from 1993 to 2015. The results indicate that the prevalence significantly decreased during that time for the total population and among males. The prevalence among females was stable 1993-1999 and then significantly decreased from 1999 to 2015.



	1993	1995	1997	1999	2001	2003	2005	2007	2009	2011	2013	2015
Total	38.9	43.0	41.9	42.2		28.5	25.3	27.6	21.8	19.1	19.6	18.8
Males	39.7	43.4	42.4	40.6		25.6	25.6	26.7	21.2	21.8	21.0	19.2
Females	38.0	42.5	41.3	43.7		31.4	24.8	28.4	22.2	16.3	18.3	18.4

Figure 5. Prevalence of Currently Smoked Cigarettes Among WV High School Students
Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 5 displays the prevalence of currently smoked cigarettes among high school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences in the prevalence of current smoking.

Table 5. Prevalence of Currently Smoked Cigarettes Among WV High School Students by Gender and Grade Level, 2015

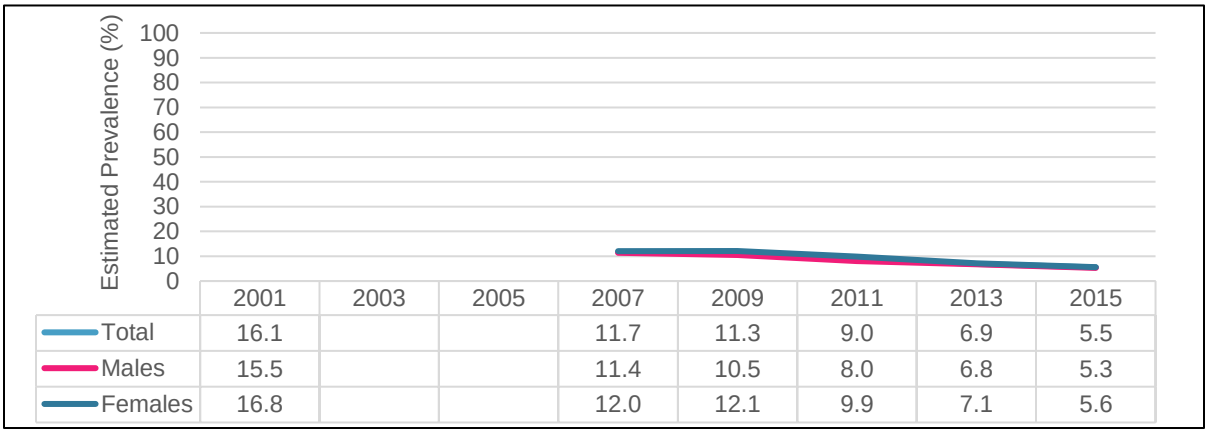
Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	18.8	15.3-22.2	14,211
Male	19.2	15.2-23.1	7,228
Female	18.4	14.1-22.6	6,964
9th	13.6	10.6-16.6	2,777
10th	21.3	13.5-29.1	4,108
11th	20.0	14.7-25.3	3,711
12th	20.4	12.7-28.0	3,481

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

Middle school students

The prevalence of currently smoked cigarettes among middle school students was 5.5% in 2015.

Figure 6 shows the prevalence of currently smoked cigarettes among middle school students significantly decreased from 2001 to 2015 for the total population and among both males and females.



	2001	2003	2005	2007	2009	2011	2013	2015
Total	16.1			11.7	11.3	9.0	6.9	5.5
Males	15.5			11.4	10.5	8.0	6.8	5.3
Females	16.8			12.0	12.1	9.9	7.1	5.6

Figure 6. Prevalence of Currently Smoked Cigarettes Among WV Middle School Students
Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 6 displays the prevalence of currently smoked cigarettes among middle school students by demographic characteristics for 2015. The results indicate there was no significant gender difference for this indicator. The prevalence was significantly higher among 8th-grade students than among 6th- and 7th-grade students.

Table 6. Prevalence of Currently Smoked Cigarettes Among WV Middle School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	5.5	0.8-3.8	3,171
Male	5.3	3.9-6.8	1,576
Female	5.6	2.8-8.5	1,569
6th	2.2	0.6-3.8	401
7th	3.6	2.0-5.2	708
8th	10.2	6.2-14.2	2,009

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

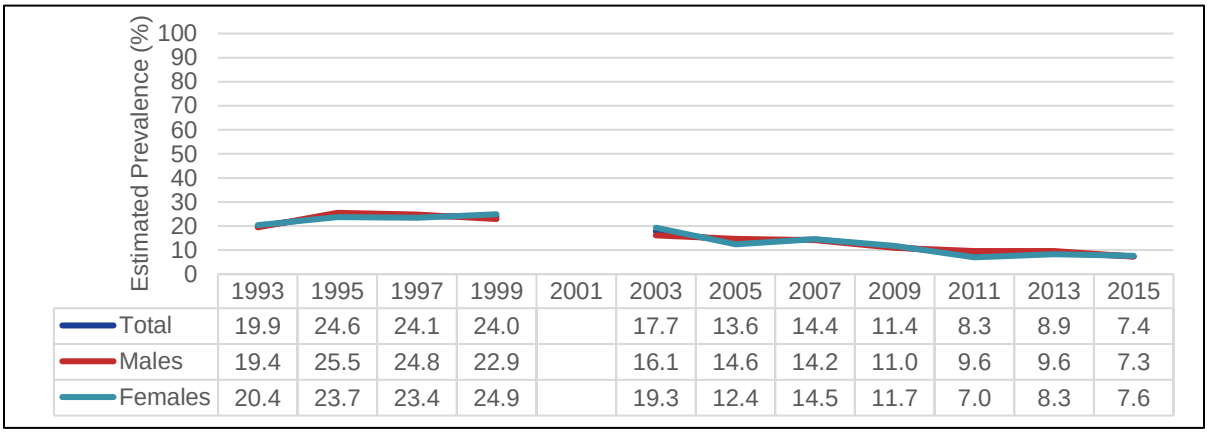
Frequently Smoked Cigarettes in the Past Month

Definition: Weighted percentage of students who frequently smoked cigarettes on 20 or more days during the 30 days before the survey.

High school students

The prevalence of frequently smoked cigarettes among high school students was 7.4% in 2015. West Virginia ranked highest in the nation on this indicator (Kann et al., 2016).

Figure 7 displays the prevalence of this indicator among high school students for 1993 - 2015. The results indicate no significant change in the prevalence from 1993 to 1997 and a significant decrease since 1997 for the total population and among males. The prevalence among females was stable from 1993 to 1999 and significantly decreased from 1999 to 2015.



	1993	1995	1997	1999	2001	2003	2005	2007	2009	2011	2013	2015
Total	19.9	24.6	24.1	24.0		17.7	13.6	14.4	11.4	8.3	8.9	7.4
Males	19.4	25.5	24.8	22.9		16.1	14.6	14.2	11.0	9.6	9.6	7.3
Females	20.4	23.7	23.4	24.9		19.3	12.4	14.5	11.7	7.0	8.3	7.6

Figure 7. Prevalence of Frequently Smoked Cigarettes in the Past Month Among WV High School Students

Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 7 displays the prevalence of frequently smoked cigarettes among high school students by demographic characteristics. The results indicate no significant gender or grade differences for this indicator.

Table 7. Prevalence of Frequently Smoked Cigarettes in the Past Month Among WV High School Students by Gender and Grade Level, 2015

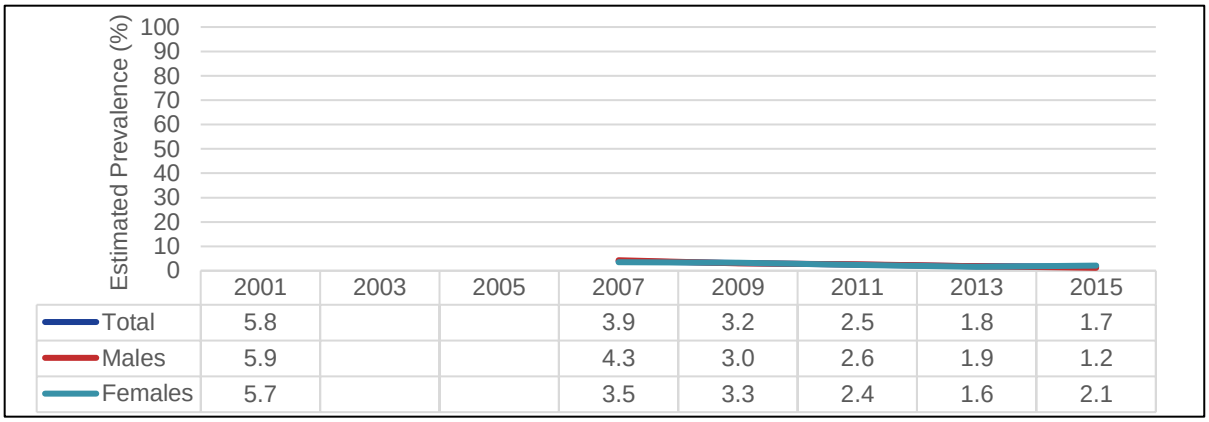
Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	7.4	5.9-8.9	5,618
Male	7.3	5.2-9.4	2,749
Female	7.6	5.5-9.6	2,861
9th	4.4	1.8-7.0	901
10th	9.5	5.6-13.3	1,825
11th	7.7	4.7-10.7	1,431
12th	7.9	4.1-11.6	1,343

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

Middle school students

The prevalence of frequently smoked cigarettes among middle school students was 1.7% in 2015.

Figure 8 shows the prevalence of this indicator among middle school students significantly decreased from 2001 to 2015 for the total population and among both males and females.



	2001	2003	2005	2007	2009	2011	2013	2015
Total	5.8			3.9	3.2	2.5	1.8	1.7
Males	5.9			4.3	3.0	2.6	1.9	1.2
Females	5.7			3.5	3.3	2.4	1.6	2.1

Figure 8. Prevalence of Frequently Smoked Cigarettes in the Past Month Among WV Middle School Students

Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 8 displays the prevalence of frequently smoked cigarettes among middle school students by demographic characteristics for 2015. While there was no significant gender difference, the prevalence was significantly higher among 8th-grade students than among 6th- and 7th-grade students.

Table 8. Prevalence of Frequently Smoked Cigarettes in the Past Month Among WV Middle School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	1.7	0.7-2.6	958
Male	1.2	0.5-1.8	346
Female	2.1	0.5-3.7	585
6th	0.0	0.0-0.1	7
7th	0.8	0.1-1.4	150
8th	4.0	1.6-6.3	775

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

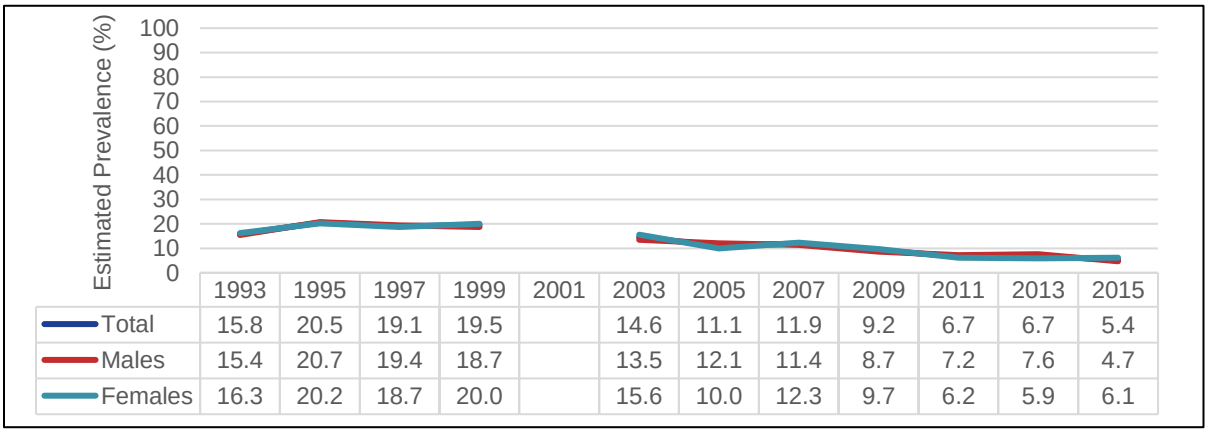
Smoked Cigarettes Daily in the Past Month

Definition: Weighted percentage of students who smoked cigarettes daily, on all 30 days during the 30 days before the survey.

High school students

The prevalence of smoked cigarettes daily in the past month among high school students was 5.4% in 2015. West Virginia ranked highest in the nation for this indicator (Kann et al., 2016).

Figure 9 displays the prevalence of this indicator among high school students for the years 1993-2015. The results indicate the prevalence was stable from 1993 to 1997 and significantly decreased from 1997 to 2015 for the total population and among males. The prevalence of daily smoking among females was stable from 1993 to 1999 and significantly decreased from 1999 to 2015.



	1993	1995	1997	1999	2001	2003	2005	2007	2009	2011	2013	2015
Total	15.8	20.5	19.1	19.5		14.6	11.1	11.9	9.2	6.7	6.7	5.4
Males	15.4	20.7	19.4	18.7		13.5	12.1	11.4	8.7	7.2	7.6	4.7
Females	16.3	20.2	18.7	20.0		15.6	10.0	12.3	9.7	6.2	5.9	6.1

Figure 9. Prevalence of Smoked Cigarettes Daily in the Past Month Among West Virginia High School Students

Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 9 displays the prevalence of smoked cigarettes daily among high school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences for this indicator.

Table 9. Prevalence of Smoked Cigarettes Daily in the Past Month Among WV High School Students by Gender and Grade Level, 2015

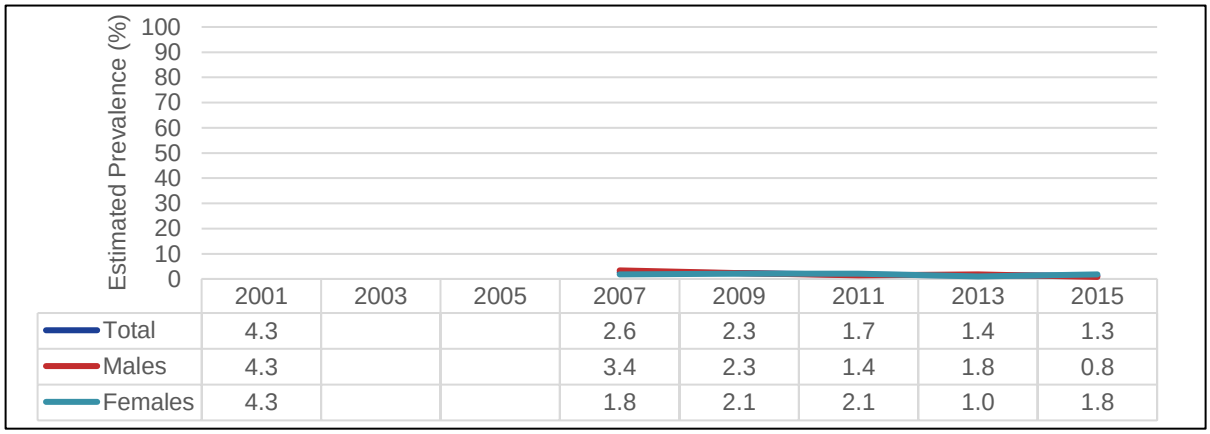
Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	5.4	4.3-6.5	4,077
Male	4.7	3.1-6.4	1,773
Female	6.1	4.4-7.7	2,297
9th	3.2	1.3-5.0	644
10th	6.2	2.9-9.5	1,197
11th	4.9	2.1-7.8	919
12th	7.0	3.6-10.4	1,198

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

Middle school students

The prevalence of smoked cigarettes daily in the past month among middle school students was 1.3% in 2015.

Figure 10 shows the prevalence of this indicator among middle school students significantly decreased for the total population and among both males and females from 2001 to 2015.



	2001	2003	2005	2007	2009	2011	2013	2015
Total	4.3			2.6	2.3	1.7	1.4	1.3
Males	4.3			3.4	2.3	1.4	1.8	0.8
Females	4.3			1.8	2.1	2.1	1.0	1.8

Figure 10. Prevalence of Smoked Cigarettes Daily in the Past Month Among WV Middle School Students

Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 10 displays the prevalence of smoked cigarettes daily among middle school students by demographic characteristics for 2015. There was no significant gender difference in the prevalence of daily smoking; however the results indicate it was significantly higher among 8th-grade students than among 6th-grade students.

Table 10. Prevalence of Smoked Cigarettes Daily in the Past Month Among WV Middle School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	1.3	0.5-2.2	768
Male	0.8	0.2-1.3	227
Female	1.8	0.5-3.2	514
6th	0.0	0.0-0.1	7
7th	0.5	0.0-1.1	108
8th	3.2	1.0-5.4	628

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

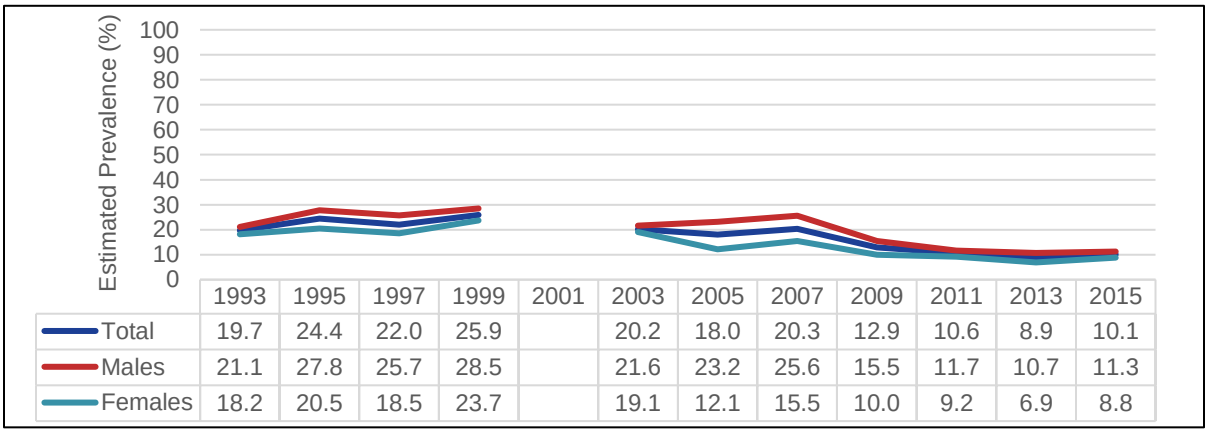
Heavily Smoked Cigarettes in the Past Month

Definition: Weighted percentage of students who smoked more than 10 cigarettes per day on the days they smoked, among students who smoked cigarettes, during the 30 days before the survey.

High school students

The prevalence of heavily smoked cigarettes in the past month among high school students was 10.1% in 2015.

Figure 11 displays the prevalence of this indicator among high school students for the years 1993-2015. The prevalence significantly increased 1993-1999 and significantly decreased 1999-2015 for the total population and among males. For females, the prevalence was stable 1993-1999 and then significantly decreased from 1999 to 2015.



	1993	1995	1997	1999	2001	2003	2005	2007	2009	2011	2013	2015
Total	19.7	24.4	22.0	25.9		20.2	18.0	20.3	12.9	10.6	8.9	10.1
Males	21.1	27.8	25.7	28.5		21.6	23.2	25.6	15.5	11.7	10.7	11.3
Females	18.2	20.5	18.5	23.7		19.1	12.1	15.5	10.0	9.2	6.9	8.8

Figure 11. Prevalence of Heavily Smoked Cigarettes in the Past Month Among WV High School Students

Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 11 displays the prevalence of heavily smoked cigarettes in the past month among high school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences for this indicator.

Table 11. Prevalence of Heavily Smoked Cigarettes in the Past Month Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	10.1	6.9-13.3	1,421
Male	11.3	6.0-16.6	604
Female	8.8	4.7-12.9	809
9th	8.2	0.0-16.7	228
10th	11.1	5.8-16.4	449
11th	9.7	2.6-16.9	358
12th	9.0	0.0-18.1	308

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

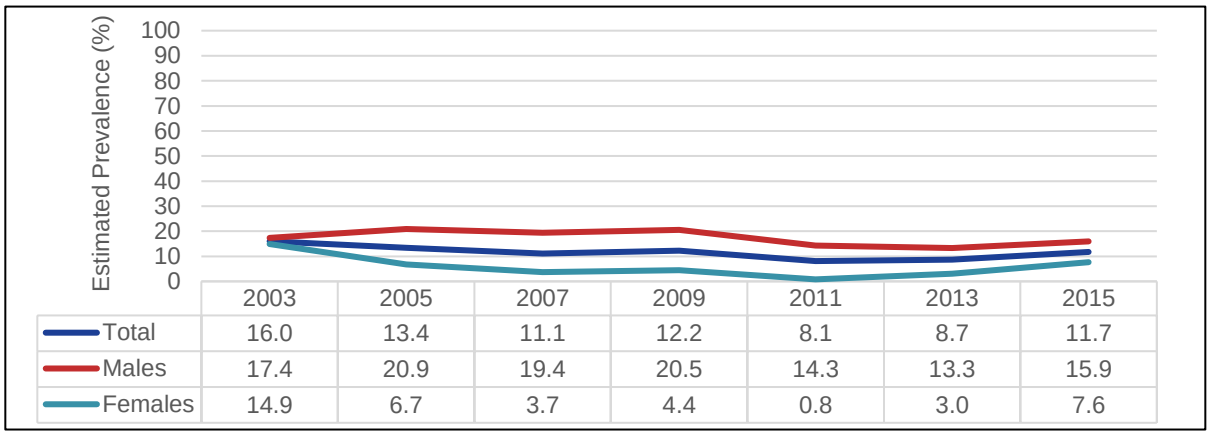
Bought Cigarettes in a Store in the Past Month

Definition: Weighted percentage of students who usually obtained their own cigarettes by buying them in a store or gas station during the 30 days before the survey, among students who currently smoked cigarettes and who were aged less than 18 years.

High school students

The prevalence of bought cigarettes in a store or gas station in the past month among high school students was 11.7% in 2015.

Figure 12 displays the prevalence of this indicator among high school students for 2003-2015. The prevalence significantly decreased for the total population during that time period. While the prevalence among males was stable, the prevalence among females significantly decreased 2003-2011 and significantly increased from 2011 to 2015.



	2003	2005	2007	2009	2011	2013	2015
Total	16.0	13.4	11.1	12.2	8.1	8.7	11.7
Males	17.4	20.9	19.4	20.5	14.3	13.3	15.9
Females	14.9	6.7	3.7	4.4	0.8	3.0	7.6

Figure 12. Prevalence of Bought Cigarettes in a Store or Gas Station in the Past Month Among WV High School Students

Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 12 displays the prevalence of bought cigarettes in a store or gas station among high school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences for this indicator.

Table 12. Prevalence of Bought Cigarettes in a Store or Gas Station in the Past Month Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	11.7	7.5-15.9	1,291
Male	15.9	7.7-24.1	876
Female	7.6	2.3-12.8	415
9th	5.2	0.0-11.4	137
10th	9.2	2.5-16.0	346
11th	13.2	7.8-18.5	426
12th	29.1	4.1-54.0	382

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

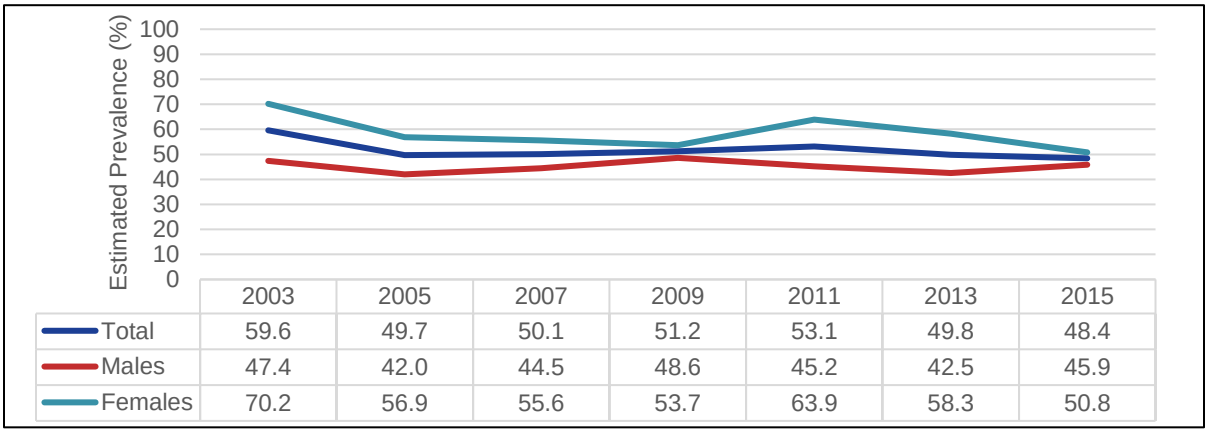
Tried to Quit Smoking Cigarettes in the Past Year

Definition: Weighted percentage of students who tried to quit smoking cigarettes, among those who currently smoked cigarettes, during the past 12 months.

High school students

The prevalence of tried to quit smoking cigarettes in the past year among high school students was 48.4% in 2015.

Figure 13 shows the prevalence of this indicator among high school students was stable from 2003 to 2015 for the total population and among both males and females.



	2003	2005	2007	2009	2011	2013	2015
Total	59.6	49.7	50.1	51.2	53.1	49.8	48.4
Males	47.4	42.0	44.5	48.6	45.2	42.5	45.9
Females	70.2	56.9	55.6	53.7	63.9	58.3	50.8

Figure 13. Prevalence of Tried to Quit Smoking Cigarettes in the Past Year Among WV High School Students

Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 13 displays the prevalence of tried to quit smoking cigarettes in the past year among high school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences for this indicator.

Table 13. Prevalence of Tried to Quit Smoking Cigarettes in the Past Year Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	48.4	41.6-55.2	6,578
Male	45.9	34.7-57.1	3,156
Female	50.8	41.8-59.9	3,403
9th	49.6	38.3-60.9	1,319
10th	50.7	36.9-64.5	1,939
11th	45.4	21.1-58.7	1,666
12th	49.1	35.2-63.0	1,647

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

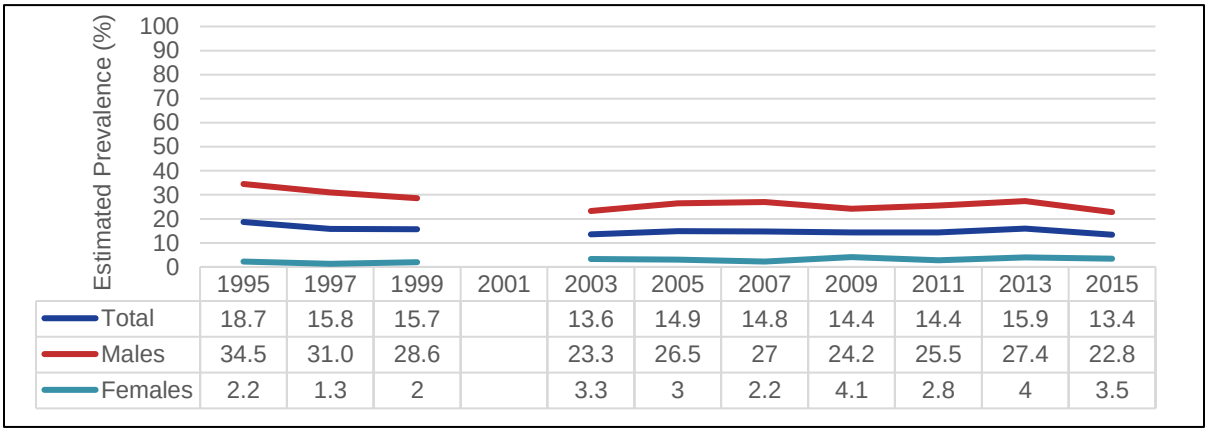
Used Smokeless Tobacco in the Past Month

Definition: Weighted percentage of students who used smokeless tobacco (chewing tobacco, snuff, or dip) on at least 1 day during the 30 days before the survey.

High school students

The prevalence of used smokeless tobacco in the past month among high school students was 13.4% in 2015. West Virginia ranked highest in the nation for this indicator (Kann et al., 2016).

Figure 14 displays the prevalence of this indicator among high school students for the years 1995-2015. The results indicate the prevalence significantly decreased for the total population and among males and significantly increased among females during that time.



	1995	1997	1999	2001	2003	2005	2007	2009	2011	2013	2015
Total	18.7	15.8	15.7		13.6	14.9	14.8	14.4	14.4	15.9	13.4
Males	34.5	31.0	28.6		23.3	26.5	27	24.2	25.5	27.4	22.8
Females	2.2	1.3	2		3.3	3	2.2	4.1	2.8	4	3.5

Figure 14. Prevalence of Used Smokeless Tobacco in the Past Month Among WV High School Students

Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 14 displays the prevalence of used smokeless tobacco in the past month among high school students by demographic characteristics for 2015. The prevalence was significantly higher among males than among females. The results indicate no significant grade difference for this indicator.

Table 14. Prevalence of Used Smokeless Tobacco in the Past Month Among WV High School Students by Gender and Grade Level, 2015

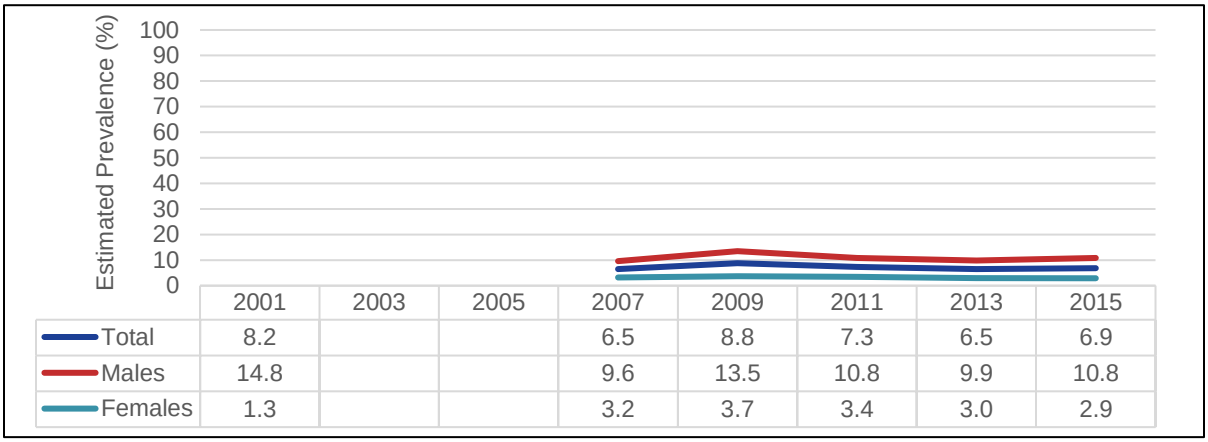
Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	13.4	10.7-16.0	10,560
Male	22.8	18.3-27.4	9,145
Female	3.5	2.1-4.9	1,372
9th	11.4	7.9-15.0	2,527
10th	15.8	11.0-20.6	3,165
11th	12.3	7.6-16.9	2,281
12th	13.6	7.7-19.6	2,448

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

Middle school students

The prevalence of used smokeless tobacco in the past month among middle school students was 6.9% in 2015.

Figure 15 displays the prevalence of this indicator among middle school students for 2001-2015. The results indicate no significant change in the prevalence during that time for the total population and among males. The prevalence among females significantly increased from 2001 to 2009 and remained stable from 2009 to 2015.



	2001	2003	2005	2007	2009	2011	2013	2015
Total	8.2			6.5	8.8	7.3	6.5	6.9
Males	14.8			9.6	13.5	10.8	9.9	10.8
Females	1.3			3.2	3.7	3.4	3.0	2.9

Figure 15. Prevalence of Used Smokeless Tobacco in the Past Month Among WV Middle School Students

Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 15 displays the prevalence of used smokeless tobacco in the past month among middle school students by demographic characteristics for 2015. The prevalence was significantly higher among males than among females. There was no significant grade difference for this indicator.

Table 15. Prevalence of Used Smokeless Tobacco in the Past Month Among WV Middle School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	6.9	5.2-8.7	551
Male	10.8	7.8-13.8	3,215
Female	2.9	0.9-5.0	831
6th	4.3	1.4-7.2	781
7th	5.8	3.3-8.3	1,153
8th	10.4	6.7-14.1	2,049

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

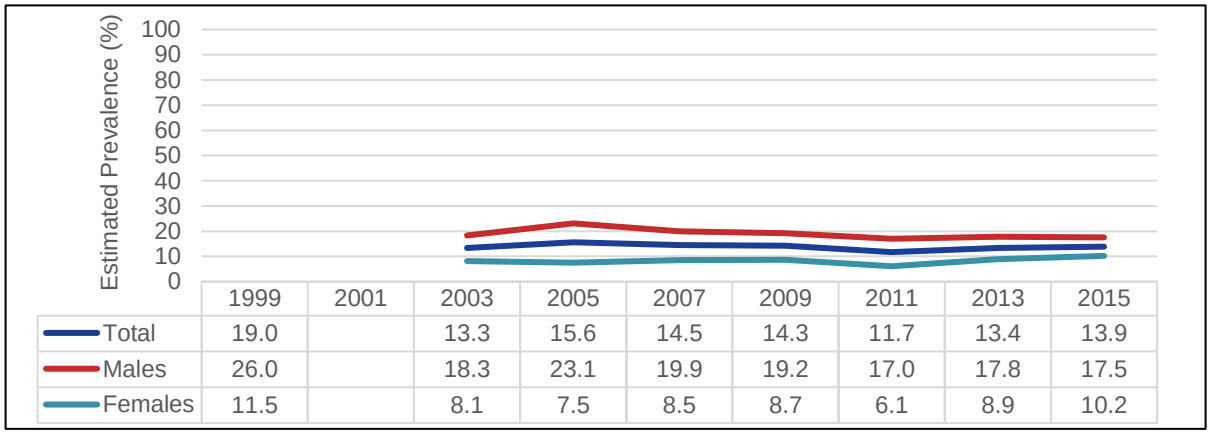
Smoked Cigars in the Past Month

Definition: Weighted percentage of students who smoked cigars (cigars, cigarillos, or little cigars) on at least 1 day during the 30 days before the survey.

High school students

The prevalence of smoked cigars among high school students was 13.9% in 2015.

Figure 16 indicates that the prevalence of this indicator significantly decreased from 1999 to 2015 for the total population and among males. The prevalence among females significantly decreased from 1999 to 2011 and significantly increased from 2011 to 2015.



	1999	2001	2003	2005	2007	2009	2011	2013	2015
Total	19.0		13.3	15.6	14.5	14.3	11.7	13.4	13.9
Males	26.0		18.3	23.1	19.9	19.2	17.0	17.8	17.5
Females	11.5		8.1	7.5	8.5	8.7	6.1	8.9	10.2

Figure 16. Prevalence of Smoked Cigars in the Past Month Among WV High School Students

Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 16 displays the prevalence of smoked cigars in the past month among high school students by demographic characteristics for 2015. The prevalence was significantly higher among males than among females. The prevalence was also significantly higher among 12th-grade students than among 9th-grade students.

Table 16. Prevalence of Smoked Cigars in the Past Month Among WV High School Students by Gender and Grade Level, 2015

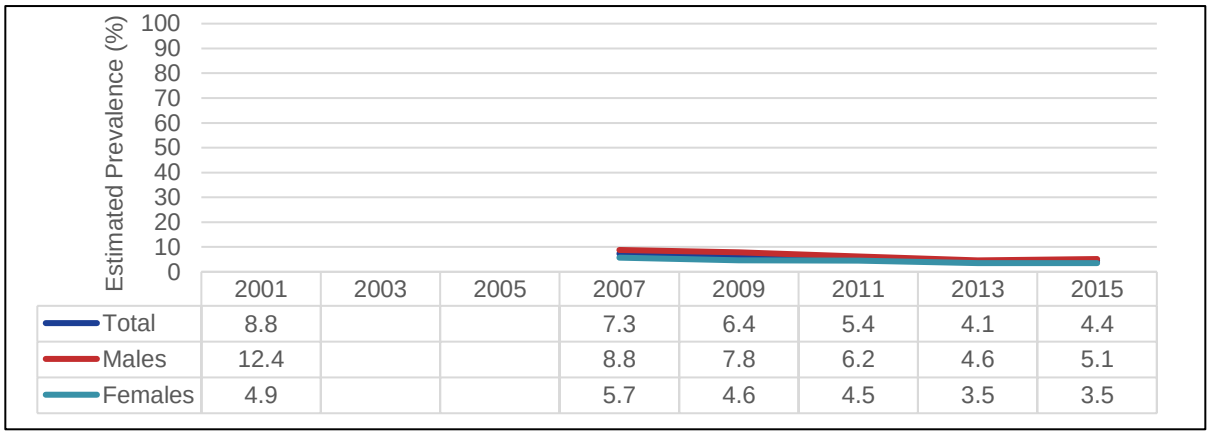
Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	13.9	11.4-16.3	10,992
Male	17.5	14.5-20.5	7,028
Female	10.2	7.7-12.6	3,956
9th	10.1	5.9-14.3	2,236
10th	13.8	8.5-19.1	2,785
11th	13.6	10.2-17.1	2,540
12th	18.4	14.7-22.0	3,298

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

Middle school students

The prevalence of smoked cigars in the past month among middle school students was 4.4% in 2015.

Figure 17 displays the prevalence of this indicator among middle school students for 2001-2015. The prevalence significantly decreased during that time for the total population and among males. The prevalence among females remained stable 2001-2015.



	2001	2003	2005	2007	2009	2011	2013	2015
Total	8.8			7.3	6.4	5.4	4.1	4.4
Males	12.4			8.8	7.8	6.2	4.6	5.1
Females	4.9			5.7	4.6	4.5	3.5	3.5

Figure 17. Prevalence of Smoked Cigars in the Past Month Among WV Middle School Students

Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 17 displays the prevalence of smoked cigars in the past month among middle school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences for this indicator.

Table 17. Prevalence of Smoked Cigars in the Past Month Among WV Middle School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	4.4	3.2-5.5	2,536
Male	5.1	3.6-6.6	1,510
Female	3.5	1.5-5.4	971
6th	3.4	1.5-5.3	610
7th	3.1	1.2-4.9	606
8th	6.5	4.4-8.7	1,287

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

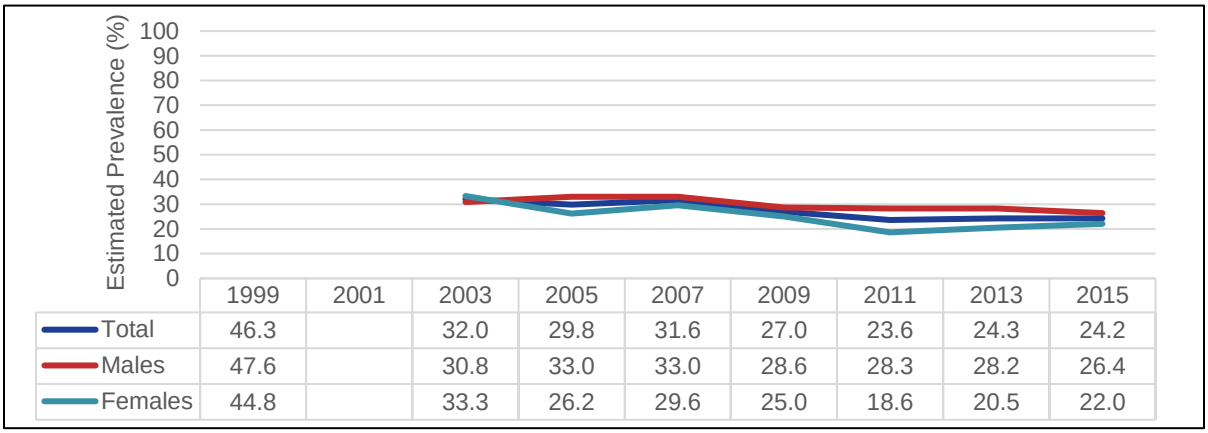
Smoked Cigars or Cigarettes in the Past Month

Definition: Weighted percentage of students who smoked cigarettes or cigars, on at least 1 day during the 30 days before the survey.

High school students

The prevalence of smoked cigarettes or cigars in the past month among high school students was 24.2% in 2015. West Virginia ranked second highest in the nation on this indicator (Kann et al., 2016).

Figure 18 displays the prevalence of this indicator among high school students for the years 1999-2015. The results indicate that the prevalence significantly decreased during that time for the total population and among both males and females.



	1999	2001	2003	2005	2007	2009	2011	2013	2015
Total	46.3		32.0	29.8	31.6	27.0	23.6	24.3	24.2
Males	47.6		30.8	33.0	33.0	28.6	28.3	28.2	26.4
Females	44.8		33.3	26.2	29.6	25.0	18.6	20.5	22.0

Figure 18. Prevalence of Smoked Cigarettes or Cigars in the Past Month Among WV High School Students

Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 18 displays the prevalence of smoked cigarettes or cigars in the past month among high school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences for this indicator.

Table 18. Prevalence of Smoked Cigarettes or Cigars in the Past Month Among WV High School Students by Gender and Grade Level, 2015

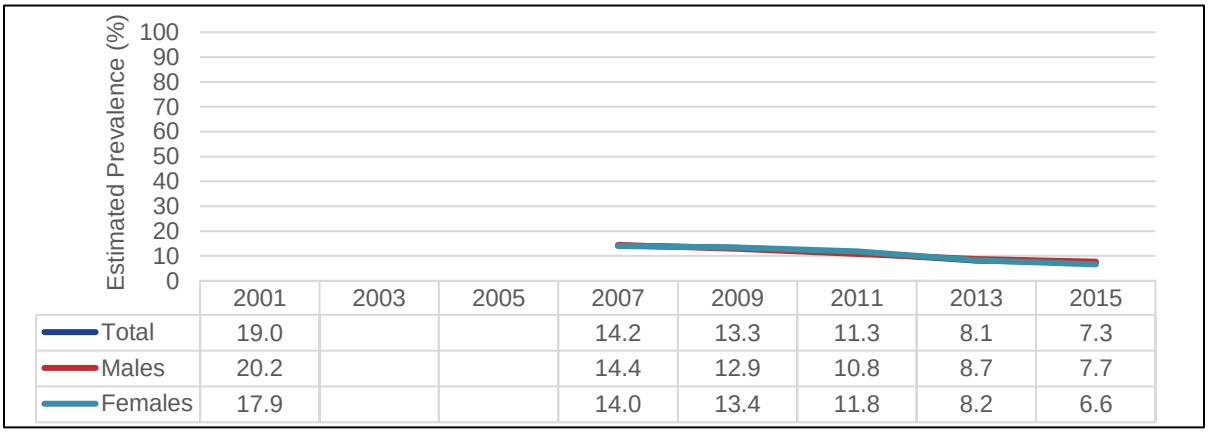
Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	24.2	20.7-27.8	18,668
Male	26.4	22.3-30.6	10,250
Female	22.0	18.1-26.0	8,398
9th	18.7	14.7-22.7	3,925
10th	26.4	18.6-34.2	5,202
11th	24.5	18.9-30.1	4,546
12th	28.0	22.1-33.9	4,862

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

Middle school students

The prevalence of smoked cigarettes or cigars in the past month among middle school students was 7.3% in 2015.

Figure 19 shows that the prevalence of this indicator among middle school students significantly decreased from 2001 to 2015 for the total population and among both males and females.



	2001	2003	2005	2007	2009	2011	2013	2015
Total	19.0			14.2	13.3	11.3	8.1	7.3
Males	20.2			14.4	12.9	10.8	8.7	7.7
Females	17.9			14.0	13.4	11.8	8.2	6.6

Figure 19. Prevalence of Smoked Cigarettes or Cigars in the Past Month Among WV Middle School Students

Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 19 displays the prevalence of smoked cigarettes or cigars in the past month among middle school students by demographic characteristics for 2015. The results indicate no significant gender difference for this indicator. The prevalence was significantly higher among 8th-grade students than among 6th- and 7th-grade students.

Table 19. Prevalence of Smoked Cigarettes or Cigars in the Past Month Among WV Middle School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	7.3	5.6-9.0	4,172
Male	7.7	6.0-9.5	2,267
Female	6.6	3.5-9.7	1,823
6th	4.0	1.9-6.1	716
7th	5.4	3.0-7.9	1,059
8th	12.0	8.4-15.6	2,337

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

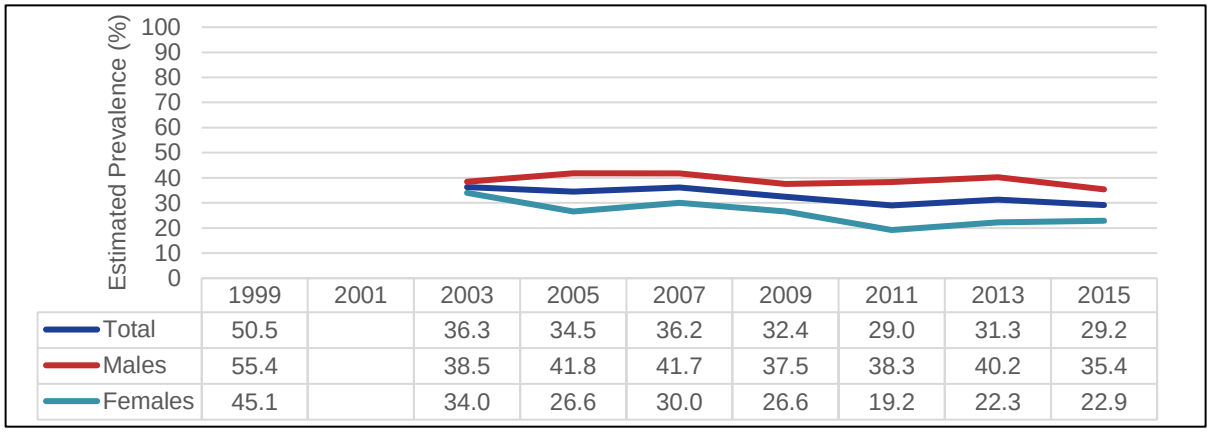
Used Cigarettes, Cigars, or Smokeless Tobacco in the Past Month

Definition: Weighted percentage of students who used cigarettes, cigars, or smokeless tobacco on at least 1 day during the 30 days before the survey.

High school students

The prevalence of used cigarettes, cigars, or smokeless tobacco in the past month among high school students was 29.2% in 2015. West Virginia ranked highest in the nation on this indicator in 2015 (Kann et al., 2016).

Figure 20 shows the prevalence of this indicator among high school students significantly decreased from 1999 to 2015 for the total population and among both males and females.



	1999	2001	2003	2005	2007	2009	2011	2013	2015
Total	50.5		36.3	34.5	36.2	32.4	29.0	31.3	29.2
Males	55.4		38.5	41.8	41.7	37.5	38.3	40.2	35.4
Females	45.1		34.0	26.6	30.0	26.6	19.2	22.3	22.9

Figure 20. Prevalence of Used Cigarettes, Cigars, or Smokeless Tobacco in the Past Month Among WV High School Students

Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 20 displays the prevalence of used cigarettes, cigars, or smokeless tobacco in the past month among high school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences for this indicator.

Table 20. Prevalence of Used Cigarettes, Cigars, or Smokeless Tobacco in the Past Month Among WV High School Students by Gender and Grade Level, 2015

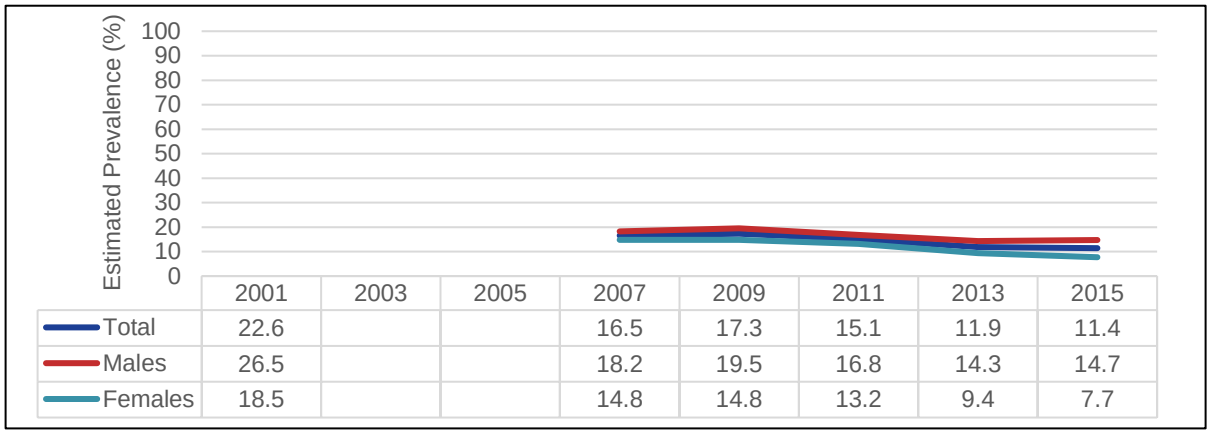
Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	29.2	25.4-33.1	22,587
Male	35.4	30.3-40.4	13,809
Female	22.9	18.8-27.0	8,715
9th	23.2	18.0-28.4	4,924
10th	33.1	26.2-40.0	6,509
11th	28.2	21.7-34.6	5,197
12th	33.1	26.0-40.3	5,811

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

Middle school students

The prevalence of used cigarettes, cigars, or smokeless tobacco in the past month among middle school students was 11.4% in 2015.

Figure 21 shows the prevalence of this indicator among middle school students significantly decreased from 2001 to 2015 for the total population and among both males and females.



	2001	2003	2005	2007	2009	2011	2013	2015
Total	22.6			16.5	17.3	15.1	11.9	11.4
Males	26.5			18.2	19.5	16.8	14.3	14.7
Females	18.5			14.8	14.8	13.2	9.4	7.7

Figure 21. Prevalence of Used Cigarettes, Cigars, or Smokeless Tobacco in the Past Month Among WV Middle School Students

Data source: West Virginia Department of Education, Youth Risk Behavior Survey

Table 21 displays the prevalence of used cigarettes, cigars, or smokeless tobacco in the past month among middle school students by demographic characteristics for 2015.

The prevalence was significantly higher among males than among females. Additionally, the prevalence was significantly higher among 8th-grade students than among 6th- and 7th-grade students.

Table 21. Prevalence of Used Cigarettes, Cigars, or Smokeless Tobacco in the Past Month Among WV Middle School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	11.4	9.4-13.3	6,529
Male	14.7	11.7-17.7	4,324
Female	7.7	4.4-11.0	2,123
6th	7.3	3.9-10.8	1,312
7th	8.8	6.0-11.6	1,721
8th	17.4	13.2-21.6	3,407

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

Ever Used Electronic Vapor Products

Definition: Weighted percentage of students who ever used an electronic vapor product (e-cigarettes, e-cigars, e-pipes, vape pipes, vaping pens, e-hookahs, or hookah pens).

No time trend results are available for this indicator as it was first assessed in 2015.

High school students

The prevalence of ever used an electronic vapor product among high school students was 49.1% in 2015.

Table 22 displays the prevalence of ever used an electronic vapor product among high school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences for this indicator.

Table 22. Prevalence of Ever Used an Electronic Vapor Product Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	49.1	45.0-53.3	38,059
Male	51.1	45.6-56.6	19,975
Female	46.9	42.1-51.8	17,935
9th	43.9	38.0-49.8	9,397
10th	50.0	41.2-58.7	9,708
11th	52.6	46.5-58.8	9,814
12th	50.8	43.7-57.9	9,002

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

Middle school students

The prevalence of ever used an electronic vapor product among middle school students was 24.9% in 2015.

Table 23 displays the prevalence of ever used an electronic vapor product among middle school students by demographic characteristics for 2015. The results indicate no gender difference for this indicator; however, the prevalence was significantly higher among 8th-grade students than among 6th-grade students.

Table 23. Prevalence of Ever Used an Electronic Vapor Product Among WV Middle School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	24.9	21.6-28.3	14,403
Male	25.1	20.9-29.2	7,439
Female	24.8	20.8-28.8	6,885
6th	18.2	13.4-23.1	3,319
7th	23.7	17.8-29.5	4,669
8th	32.8	26.8-38.8	6,350

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

Used Electronic Vapor Products in the Past Month

Definition: Weighted percentage of students who used electronic vapor products (e-cigarettes, e-cigars, e-pipes, vape pipes, vaping pens, e-hookahs, or hookah pens) on at least 1 day in the 30 days before the survey.

No time trend results are available for this indicator as it was first assessed in 2015.

High school students

The prevalence of used electronic vapor products in the past month among high school students was 31.2% in 2015. West Virginia ranked highest in the nation for this indicator (Kann et al., 2016).

Table 24 displays the prevalence of used electronic vapor products in the past month among high school students by demographic characteristics for 2015. The results show there were no significant gender or grade differences for this indicator.

Table 24. Prevalence of Used an Electronic Vapor Product in the Past Month Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	31.2	27.7-34.8	24,216
Male	32.6	28.4-36.9	12,793
Female	29.6	25.4-33.8	11,312
9th	29.8	24.6-35.0	6,386
10th	29.7	22.6-36.7	5,801
11th	33.6	28.4-38.7	6,180
12th	32.2	26.8-37.7	5,758

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

Middle school students

The prevalence of used electronic vapor products in the past month among middle school students was 11.0% in 2015.

Table 25 displays the prevalence of used electronic vapor products in the past month among middle school students by demographic characteristics for 2015. There were no significant gender or grade differences for this indicator.

Table 25. Prevalence of Used an Electronic Vapor Product in the Past Month Among WV Middle School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	11.0	8.8-13.2	6,333
Male	11.8	9.1-14.4	3,467
Female	10.4	7.3-13.5	2,866
6th	7.9	4.6-11.3	1,420
7th	10.0	7.7-12.4	1,977
8th	15.2	9.7-20.7	2,935

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

Used Any Form of Tobacco in the Past Month

Definition: Weighted percentage of students who used tobacco in any form (cigarettes, cigars, smokeless tobacco, or electronic vapor products) on at least 1 day during the 30 days before the survey.

Because this indicator includes electronic vapor use, only 2015 data are available.

High school students

The prevalence of used any form of tobacco in the past month among high school students was 40.8% in 2015. West Virginia ranked highest in the nation on this indicator (Kann et al., 2016).

Table 26 displays the prevalence of currently used any form of tobacco among high school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences for this indicator.

Table 26. Prevalence of Used Any Form of Tobacco in the Past Month Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	40.8	36.8-44.9	31,543
Male	45.1	40.2-50.0	17,616
Female	36.2	31.4-41.1	13,787
9th	37.2	31.1-43.3	7,893
10th	42.3	35.6-49.0	8,297
11th	41.3	34.8-47.9	7,646
12th	42.9	35.3-50.5	7,560

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

Middle school students

The prevalence of currently used any form of tobacco among middle school students was 17.5% in 2015.

Table 27 displays the prevalence of used any form of tobacco in the past month among middle school students by demographic characteristics for 2015. While there was no significant gender difference, the prevalence was significantly higher among 8th-grade students than among 6th- and 7th-grade students.

Table 27. Prevalence of Used Any Form of Tobacco Product in the Past Month Among WV Middle School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	17.5	15.1-20.0	9,899
Male	20.1	16.8-23.5	5,810
Female	14.7	10.5-19.0	4,008
6th	12.6	8.4-16.8	2,197
7th	14.2	10.9-17.4	2,744
8th	25.5	20.1-30.9	4,870

Data source: West Virginia Department of Education, Youth Risk Behavior Survey, 2015

Discussion

The research base indicates that many risky behaviors in adolescence are interrelated. For example, Sneed, Mehdiyoun, Matsumura, and Hess (2014) found that smoking on school property was associated with other types of drug use. An abundance of research has been conducted linking adolescent behaviors to suicidal thought and suicide attempts, including bullying and sadness (Sibold, Edwards, Murray-Close, & Hudziak, 2015), maladaptive dieting (Thullen, Taliaferro, & Muehlenkamp, 2015; Brown, Kola-Palmer, & Dhingra, 2015), binge drinking, daily smoking, and marijuana use (Brown, Kola-Palmer, & Dhingra, 2015).

Research has also found that several other factors influence adolescent behavior. Pentz, Shin, Riggs, Unger, Collision, and Chou (2015) found that parent and peer modeling increases tobacco use among adolescents. Jeon and Goodson (2015) also found that friendship types influenced risky behavior including alcohol use, smoking, sexual behavior, and marijuana use.

Factors related to the prevention of risky behavior during adolescence have also been extensively investigated. Banspach et al. (2016) recommend a variety of family-based approaches, school-based approaches, and health services to help prepare adolescents for lifelong health and wellness.

Collaborations among community organizations, local social networks, school health centers, public health departments, and effective school programs can play a large role in prevention of many of these high-risk behaviors among adolescents. Promoting healthy behaviors during adolescence can lead to healthy lifestyle and behavioral choices in adulthood thereby preventing major chronic diseases and leading to less disability and greater health-related quality of life in adulthood and through the aging continuum.

Appendix: Survey Methods

The West Virginia Youth Risk Behavior Survey (YRBS) was most recently administered in public middle schools and high schools during the spring of 2015. The following sections describe the methodology of the YRBS.

Sampling Procedures

Because it is not feasible to administer the YRBS questionnaire to all students in the state, a sample of students complete the questionnaires. The West Virginia Department of Education (WVDE) and The Centers for Disease Control and Prevention (CDC) employ a two-stage, cluster sample design. All public high schools and middle schools in the state were included in the sampling frame, which includes enrollment by grade for each school. During the 2015 YRBS administration, a total of 35 randomly selected public high schools and 49 middle schools from around the state participated in the survey. In sampled schools, the survey was administered in a random selection of second period classes.

Sample Characteristics, 2015

A total of 1,622 students enrolled in Grades 9–12, participated in the survey, representing a school response rate of 100% and a student response rate of 77%. A total of 1,854 students enrolled in Grades 6–8, participated in the survey, representing a school response rate of 100% and a student response rate of 75%.

Data Collection

Survey procedures protected the privacy of students by allowing for anonymous and voluntary participation. Passive parental permission was obtained before surveys were administered to students. Data collection was conducted by regional education service agency (RESA) school wellness specialists with coordination by the YRBS coordinator with the WVDE Office of Research, Accountability, and Data Governance. Completed response forms were sent to CDC for processing and weighting.

Questionnaires

Standard questionnaires for middle school students and high school students are provided by CDC. The WVDE modifies the questionnaires by adding or deleting questions based on the needs of WVDE offices and external stakeholders such as the WV Bureau for Public Health. The standard questionnaires are changed by CDC for each administration. The standard high school questionnaire provided by CDC included 89 questions. The 2015 West Virginia version of the high school questionnaire was a 92-item self-administered questionnaire that included all of the topics mentioned in the Introduction as well as three state-added questions about dieting practices. The standard middle school questionnaire included 49 questions covering the standard topics listed previously. The West Virginia version of the 2015 middle school questionnaire was 48 questions in length and excluded questions regarding sexual behavior and included three state-added questions about dieting practices.

Weighting of Raw Data

The student responses were scientifically weighted, which allows the results to be generalized to all public middle school and high school students in West Virginia. West Virginia YRBS data have been weighted for high school students each year the survey has been conducted, except 2001, while the middle school data was weighted for all years conducted except 2003 and 2005. The raw data collected are weighted to West Virginia's public school student population based on grade, sex, and race/ethnicity.

Data Analysis

Once the raw data are processed by CDC, WVDE receives the weighted middle school and high school datasets. CDC also provides time trend analyses and standard tables detailing student behavior by demographic characteristics including sex, age, grade, and race/ethnicity. The WVDE YRBS coordinator then performs analyses of the datasets to produce weighted prevalence estimates and weighted frequencies. In general terms, the prevalence is the proportion or percentage of the population that has a specific characteristic or displays a specific behavior during a given time frame. Because the YRBS data are collected from a sample of students, and not all students, and are weighted in order to apply to the population of all students, a prevalence estimate is generated. The prevalence estimate is the weighted percentage of students who engaged in the behavior during a specific period of time. A weighted frequency is calculated based on the prevalence estimate, and estimates the number of students who engage in a specific behavior during a given time period. Additionally, analyses of comorbid behaviors (i.e. behaviors that occur simultaneously) are conducted.

Interpretation of Results

Once the weighted data are analyzed, the results must be interpreted in a scientifically acceptable manner. For comparison of prevalence estimates by demographic characteristics such as gender, age, grade, and race/ethnicity, a conservative statistical procedure is used that involves comparison of 95% confidence intervals. The 95% confidence interval is a range of prevalence estimates within which it is expected that the actual prevalence falls. If the 95% confidence intervals of two prevalence estimates overlap, the estimates are considered to be statistically equivalent or the same. If the 95% confidence intervals of two prevalence estimates do not overlap, the estimates are considered to be significantly different from a statistical perspective. When examining changes in prevalence estimates over time, logistic regression analysis is conducted in order to determine if the changes are statistically significant.

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