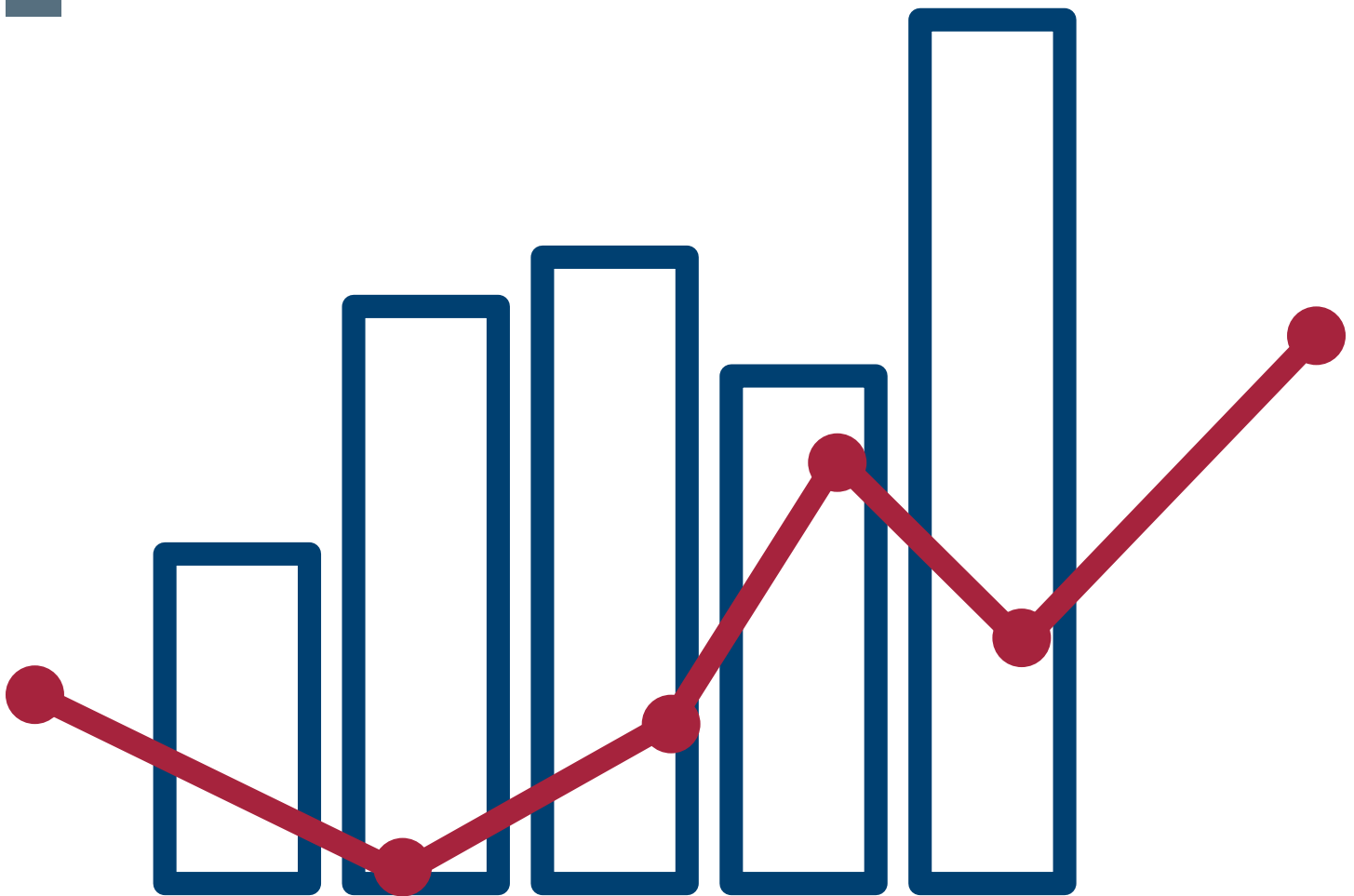


WEST VIRGINIA YOUTH RISK BEHAVIOR SURVEY, 2015:

Sexual Behavior





**WEST VIRGINIA BOARD OF EDUCATION
2016-2017**

Thomas W. Campbell, President

Jeffrey D. Flanagan, Member

Miller L. Hall, Member

David G. Perry, Member

F. Scott Rotruck, Member

Frank S. Vitale, Member

James S. Wilson, Member

Paul L. Hill, Ex Officio

Chancellor

West Virginia Higher Education Policy Commission

Sarah Armstrong Tucker, Ex Officio

Chancellor

West Virginia Council for Community and Technical College Education

Steven L. Paine, Ex Officio

State Superintendent of Schools

West Virginia Department of Education

West Virginia Youth Risk Behavior Survey, 2015: Sexual Behavior Report

Birgit A. Shanholtzer, M.A.



West Virginia Department of Education

Division of Technology
Office of Research, Accountability, and Data Governance
Building 6, Suite 825, State Capitol Complex
1900 Kanawha Boulevard East
Charleston, WV 25305
<http://wvde.state.wv.us/research>

March 2017

Steven L. Paine, Ed.D.
State Superintendent of Schools

Warren Patterson
Chief Information Officer

Andy Whisman, Ph.D.
Executive Director
Office of Research, Accountability, and Data Governance

Suggested Citation

Shanholtzer, B. A. (2017). *West Virginia Youth Risk Behavior Survey, 2015: Sexual behavior*. Charleston, WV: West Virginia Department of Education, Division of Technology, Office of Research, Accountability, and Data Governance.

Content Contact

Birgit A. Shanholtzer, M.A.
Coordinator, Research and Evaluation
Office of Research, Accountability, and Data Governance
birgit.shanholtzer@k12.wv.us

This publication was supported by Cooperative Agreement Number 1U87PS004130 from the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.

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).

Table of Contents

Introduction	1
Methods	1
Results	1
Ever Had Sexual Intercourse	2
High school students	2
Had Sexual Intercourse Before Age 13.....	3
High school students	3
Had Sexual Intercourse with Four or More People.....	4
High school students	4
Sexually Active in the Past Three Months.....	5
High school students	5
Drank Alcohol or Used Drugs Before Last Sexual Intercourse.....	6
High school students	6
Used a Condom During Last Sexual Intercourse	7
High school students	7
Used Birth Control Pills Before Last Sexual Intercourse	8
High school students	8
Used an IUD or Implant Before Last Sexual Intercourse.....	9
High school students	9
Used a Shot, Patch, or Birth Control Ring During Last Sexual Intercourse	10
High school students	10
Used Birth Control Pills, IUD, Implant, Shot, Patch, or Birth Control Ring Before Last Sexual Intercourse	11
High school students	11
Used Both a Condom and Birth Control Pills, IUD, Implant, Shot, Patch, or Birth Control Ring Before Last Sexual Intercourse	12
High school students	12
Did Not Use Any Method to Prevent Pregnancy	13
High school students	13
Discussion.....	14
Appendix: Survey Methods.....	15
References.....	17

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 15, 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 Had Sexual Intercourse

Definition: Weighted percentage of high school students who ever had sexual intercourse.

High school students

The prevalence of ever had sexual intercourse among high school students was 46.7% in 2015. West Virginia ranked the third highest in the nation for the prevalence of ever had sexual intercourse (Kann et al., 2016).

Figure 1 presents the prevalence of this indicator among high school students for the years 1993-2015. The results indicate that the prevalence significantly decreased from 1993 to 2015 for the total population and among both males and females.

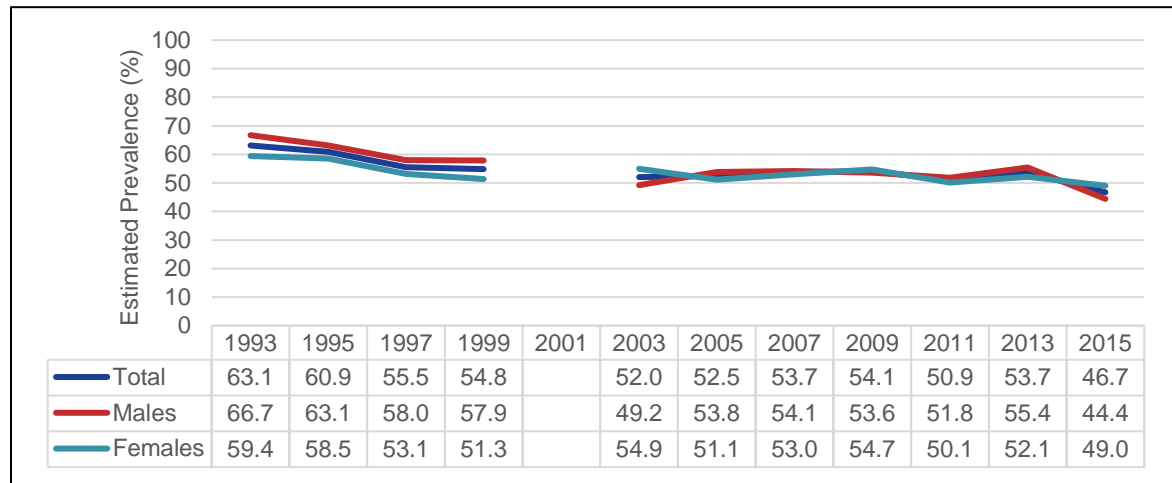


Figure 1. Prevalence of Ever Had Sexual Intercourse Among WV High School Students
Data source: WV Department of Education, Youth Risk Behavior Survey

Table 1 displays the prevalence of ever had sexual intercourse among high school students by demographic characteristics for 2015. While there was no significant gender difference, the results indicate the prevalence was significantly higher among 11th- and 12th-grade students than among 9th- and 10th-grade students.

Table 1. Prevalence of Ever Had Sexual Intercourse Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	46.7	40.9-52.5	33,376
Male	44.4	38.8-49.9	15,389
Female	49.0	42.0-56.0	17,948
9th	26.9	20.8-33.0	5,169
10th	39.0	30.6-47.4	7,036
11th	55.8	50.4-61.1	9,762
12th	68.9	60.7-77.1	11,283

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

Had Sexual Intercourse Before Age 13

Definition: Weighted percentage of students who had sexual intercourse before age 13.

High school students

The prevalence of had sexual intercourse before age 13 among high school students was 5.1% in 2015.

Figure 2 shows the prevalence of this indicator among high school students significantly decreased from 1993 to 2015 for the total population and among both males and females.

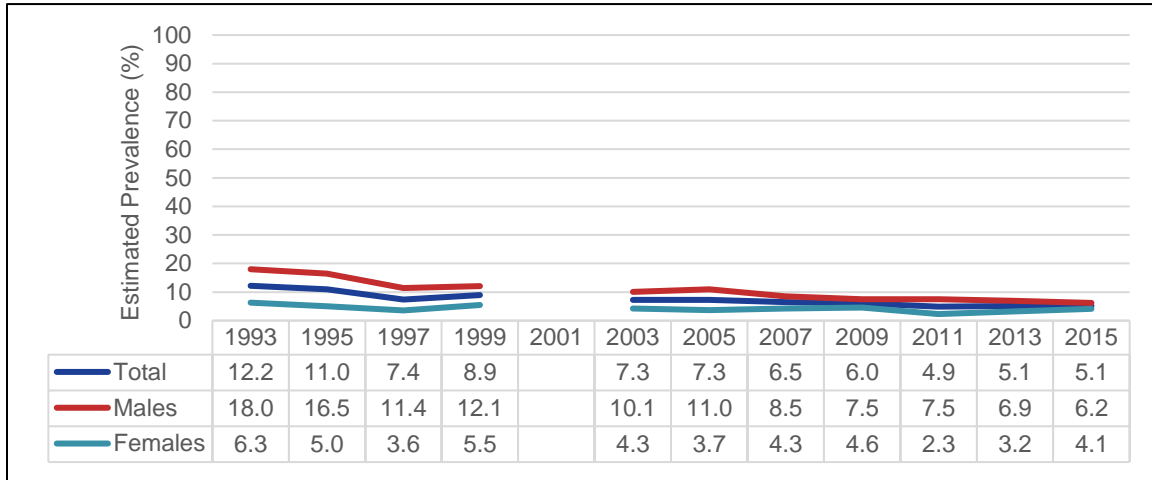


Figure 2. Prevalence of Had Sexual Intercourse Before Age 13 Among WV High School Students

Data source: WV Department of Education, Youth Risk Behavior Survey

Table 2 displays the prevalence of had sexual intercourse before age 13 among high school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences in the prevalence of this indicator.

Table 2. Prevalence of Had Sexual Intercourse Before Age 13 Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	5.1	3.6-6.7	3,633
Male	6.2	4.0-8.4	1,477
Female	4.1	2.5-5.6	2,142
9th	6.2	3.7-8.7	1,187
10th	5.4	1.8-9.1	965
11th	3.6	1.6-5.7	634
12th	4.8	0.9-8.7	777

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

Had Sexual Intercourse with Four or More People

Definition: Weighted percentage of students who had sexual intercourse with four or more people in their lifetime.

High school students

The prevalence of had sexual intercourse with four or more people in their lifetime among high school students was 13.4% in 2015.

Figure 3 displays the prevalence of this indicator among high school students significantly decreased from 1993 to 2015 for the total population and among both males and females.

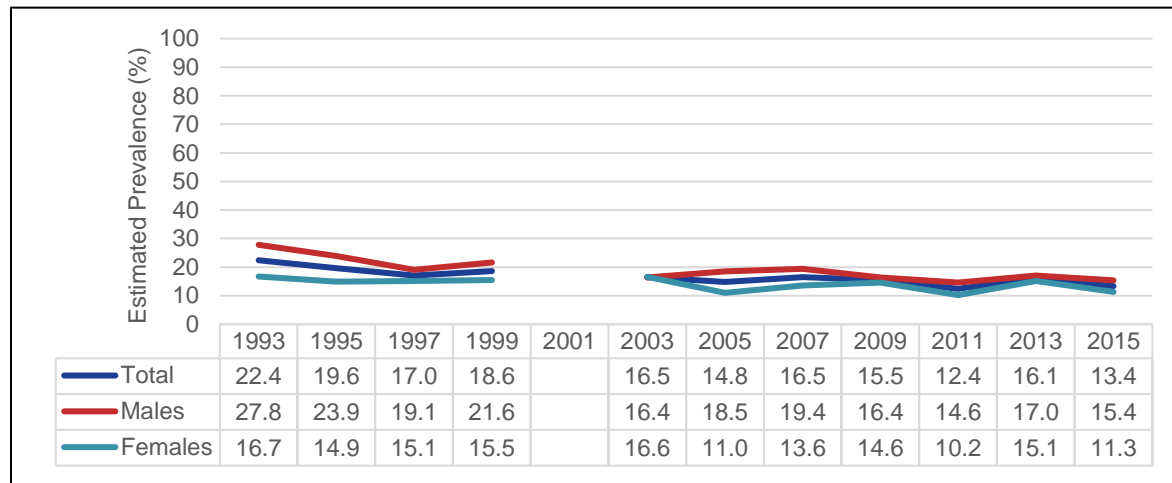


Figure 3. Prevalence of Had Sexual Intercourse With Four or More People Among WV High School Students

Data source: WV Department of Education, Youth Risk Behavior Survey

Table 3 displays the prevalence of had sexual intercourse with four or more people in their lifetime among high school students by demographic characteristics for 2015. There was no significant gender difference in the prevalence of this indicator. The prevalence was significantly higher among 12th-grade students than among 9th- and 10th-grade students and was significantly higher among 11th-grade students than among 9th-grade students.

Table 3. Prevalence of had Sexual Intercourse With Four or More People in Their Lifetime Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	13.4	10.8-15.7	9,512
Male	15.4	11.9-19.0	5,339
Female	11.3	8.1-14.5	4,134
9th	5.9	2.8-9.0	1,130
10th	10.6	8.0-13.2	1,908
11th	14.5	10.7-18.3	2,524
12th	23.6	17.2-30.1	3,867

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

Sexually Active in the Past Three Months

Definition: Weighted percentage of students who were currently sexually active (had intercourse with at least one person during the 3 months before the survey).

High school students

The prevalence of currently sexually active among high school students was 35.5% in 2015. West Virginia had the highest prevalence of currently sexually active in the nation (Kann et al., 2016).

Figure 4 displays the prevalence of currently sexually active among high school students significantly decreased from 1993 to 2015 for the total population and among males and females.

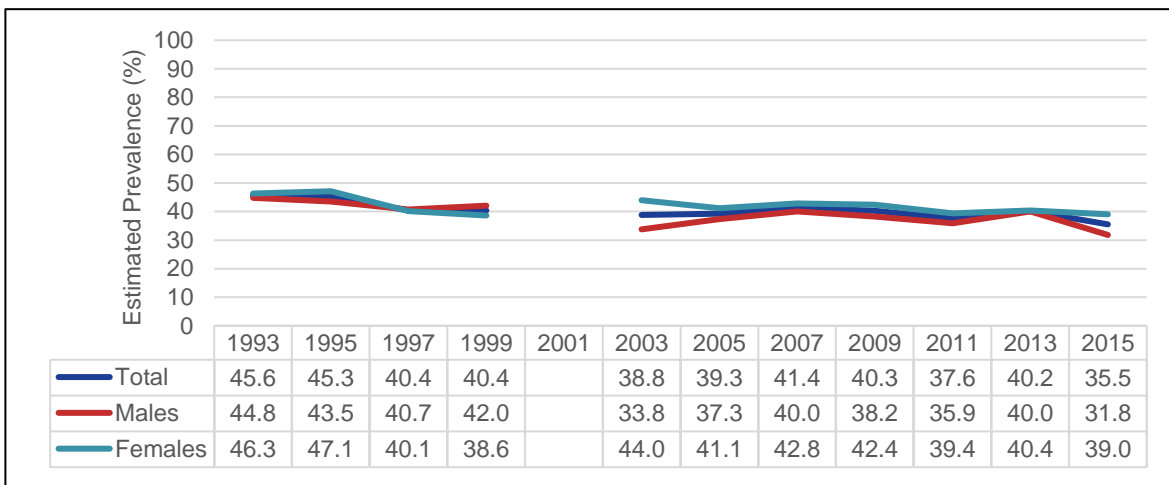


Figure 4. Prevalence of Currently Sexually Active Among WV High School Students

Data source: WV Department of Education, Youth Risk Behavior Survey

Table 4 displays the prevalence of currently sexually active among high school students by demographic characteristics for 2015. There was no significant gender difference for this indicator. The prevalence was significantly higher among 12th-grade students than among students in other grades. The prevalence was significantly higher among 11th-grade students than among 9th-grade students.

Table 4. Prevalence of Currently Sexually Active Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	35.5	30.3-40.7	25,252
Male	31.8	26.5-37.1	10,941
Female	39.0	32.8-45.3	14,284
9th	20.9	15.4-26.5	4,011
10th	29.3	21.0-37.5	5,280
11th	40.8	36.3-45.3	7,118
12th	53.8	46.5-61.2	8,731

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

Drank Alcohol or Used Drugs Before Last Sexual Intercourse

Definition: Weighted percentage of students who drank alcohol or used drugs before last sexual intercourse.

High school students

The prevalence of drank alcohol or used drugs before last sexual intercourse among high school students was 18.5% in 2015.

Figure 5 displays the prevalence of this indicator for the years 1993-2015. The prevalence significantly increased from 1993 to 1999 and significantly decreased from 1999 to 2015 for the total population. The prevalence significantly decreased from 1993 to 1999 among both males and females.

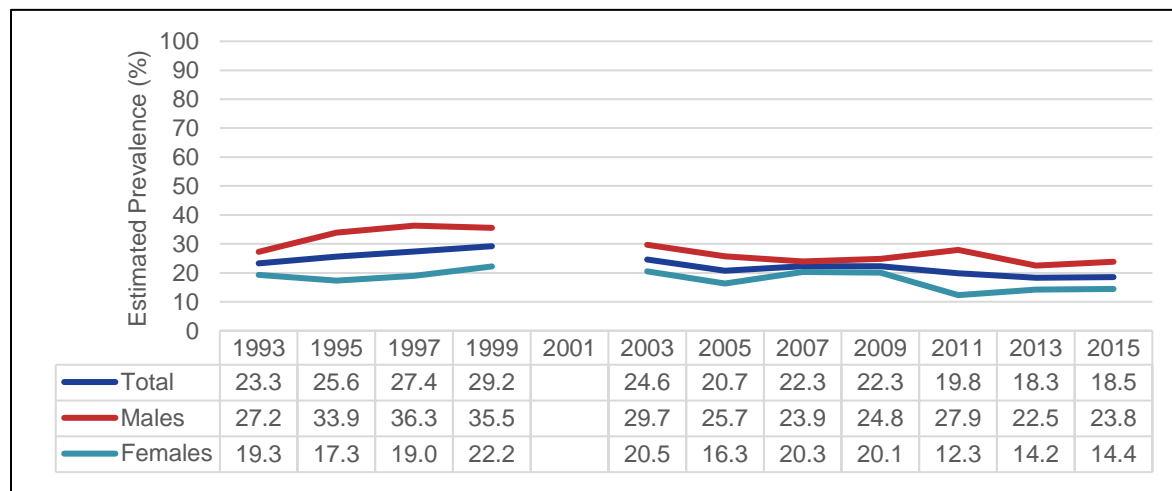


Figure 5. Prevalence of Drank Alcohol or Used Drugs Before Last Sexual Intercourse Among WV High School Students

Data source: WV Department of Education, Youth Risk Behavior Survey

Table 5 displays the prevalence of drank alcohol or used drugs before last sexual intercourse among high school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences for this indicator.

Table 5. Prevalence of Drank Alcohol or Used Drugs Before Last Sexual Intercourse Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	18.5	14.5-22.5	4,611
Male	23.8	17.7-29.8	2,578
Female	14.4	9.8-18.9	2,020
9th	29.1	14.6-43.6	1,124
10th	16.5	10.3-22.7	861
11th	19.7	12.3-27.1	1,382
12th	13.8	5.8-21.8	1,202

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

Used a Condom During Last Sexual Intercourse

Definition: Weighted percentage of students who used a condom during last sexual intercourse (among those who were currently sexually active).

High school students

The prevalence of used a condom during last sexual intercourse among high school students was 51.5% in 2015.

Figure 6 displays the prevalence of this indicator among high school students significantly increased from 1993 to 2003 and has significantly decreased since 2003 for the total population and among both males and females.

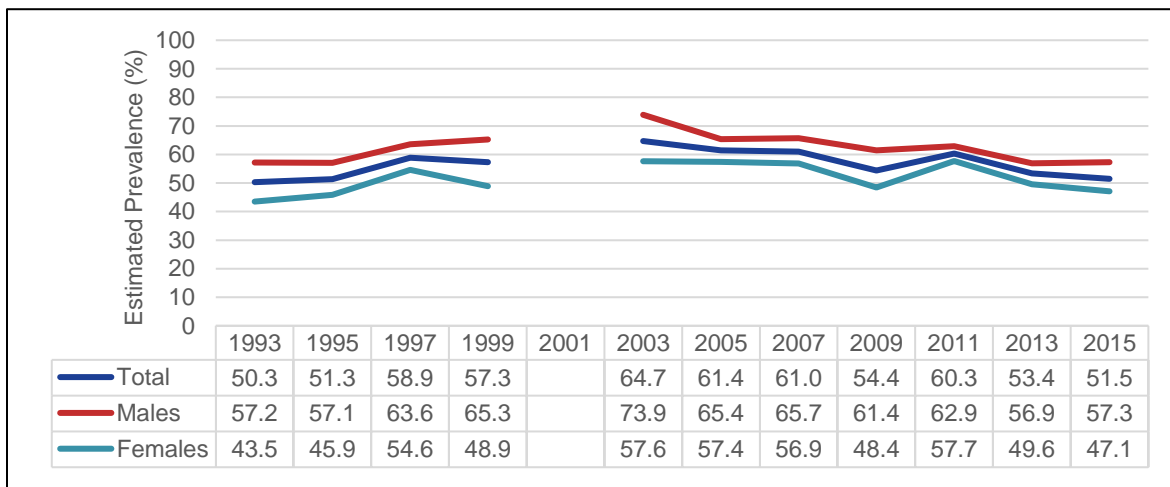


Figure 6. Prevalence of Used a Condom During Last Sexual Intercourse Among WV High School Students

Data source: WV Department of Education, Youth Risk Behavior Survey

Table 6 displays the prevalence of used a condom during last sexual intercourse among high school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences for this indicator.

Table 6. Prevalence of Used a Condom During Last Sexual Intercourse Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	51.5	46.3-56.6	12,674
Male	57.3	48.8-65.8	6,106
Female	47.1	41.6-52.6	6,568
9th	47.9	33.4-62.4	1,777
10th	54.4	41.6-67.2	2,799
11th	54.8	44.1-65.5	3,858
12th	49.2	42.1-56.3	4,240

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

Used Birth Control Pills Before Last Sexual Intercourse

Definition: Weighted percentage of students who used birth control pills before last sexual intercourse to prevent pregnancy (among those who were currently sexually active).

High school students

The prevalence of used birth control pills before last sexual intercourse among high school students was 28.2% in 2015.

Figure 7 displays the prevalence of this indicator among high school students significantly increased from 1993 to 2015 for the total population and among males and females.

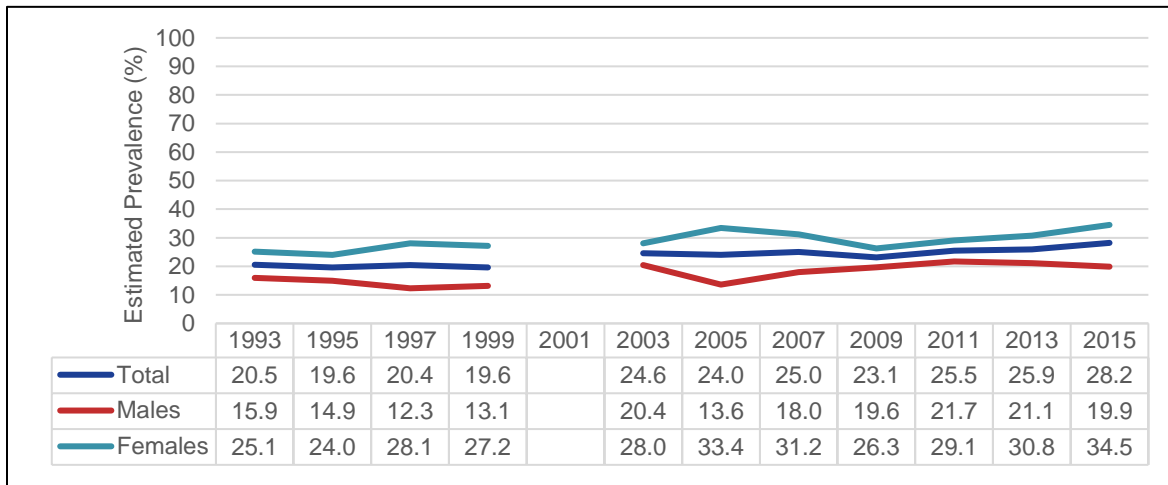


Figure 7. Prevalence of Used Birth Control Pills Before Last Sexual Intercourse Among WV High School Students

Data source: WV Department of Education, Youth Risk Behavior Survey

Table 7 displays the prevalence of used birth control pills before last sexual intercourse among high school students by demographic characteristics for 2015. While there was no significant grade difference, the prevalence was significantly higher among females than among males.

Table 7. Prevalence of Used Birth Control Pills Before Last Sexual Intercourse Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	28.2	23.4-33.0	6,740
Male	19.9	14.6-25.1	2,059
Female	34.5	28.7-40.4	4,668
9th	23.7	13.8-33.5	889
10th	16.4	6.0-26.9	768
11th	32.7	25.3-40.0	2,234
12th	32.6	23.7-41.5	2,777

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

Used an IUD or Implant Before Last Sexual Intercourse

Definition: Weighted percentage of students who used an IUD (e.g., Mirena or ParaGard) or implant (e.g., Implanon or Nexplanon) before last sexual intercourse to prevent pregnancy (among those who were currently sexually active).

High school students

The prevalence of used an IUD or implant among high school students was 3.4% in 2015.

Figure 8 displays the prevalence of this indicator among high school students for 2013 and 2015 significantly increased for the total population, with no change among males or females.

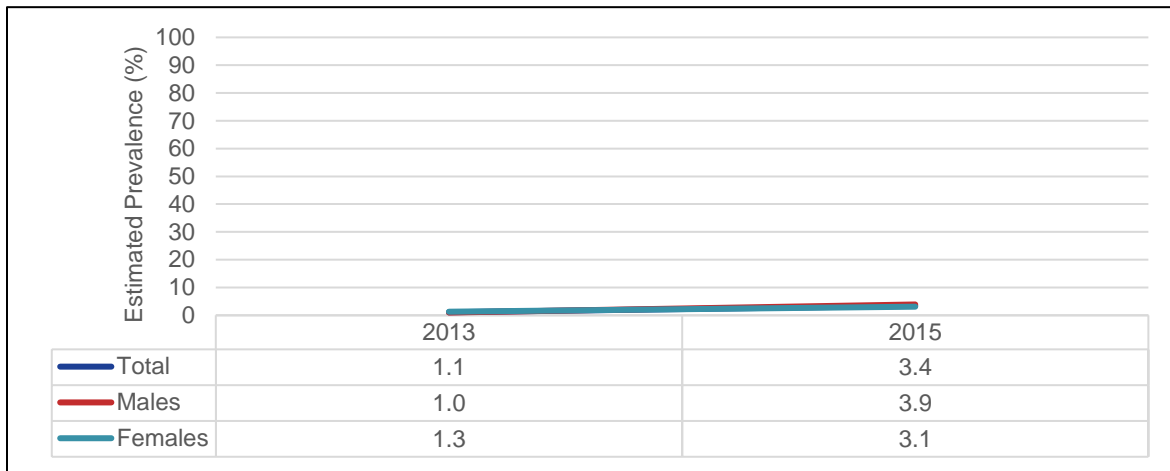


Figure 8. Prevalence of Used an IUD or Implant Before Last Sexual Intercourse Among WV High School Students

Data source: WV Department of Education, Youth Risk Behavior Survey

Table 8 displays the prevalence of used an IUD or implant among high school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences in the prevalence of this indicator.

Table 8. Prevalence of Used an IUD or Implant Before Last Sexual Intercourse Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	3.4	1.9-5.0	824
Male	3.9	2.2-5.6	408
Female	3.1	0.5-5.6	417
9th	0.3	0.0-1.1	13
10th	6.2	0.0-12.9	289
11th	3.4	0.9-6.0	233
12th	3.4	0.0-8.0	290

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

Used a Shot, Patch, or Birth Control Ring During Last Sexual Intercourse

Definition: Weighted percentage of students who used a shot (e.g., Depo-Provera), patch (e.g., Ortho Evra), or birth control ring (e.g., NuvaRing) during last sexual intercourse (among those who were currently sexually active).

High school students

The prevalence of used a shot, patch, or birth control ring among high school students was 5.0% in 2015.

Figure 9 shows the prevalence of this indicator among high school students remained stable from 2013 to 2015.

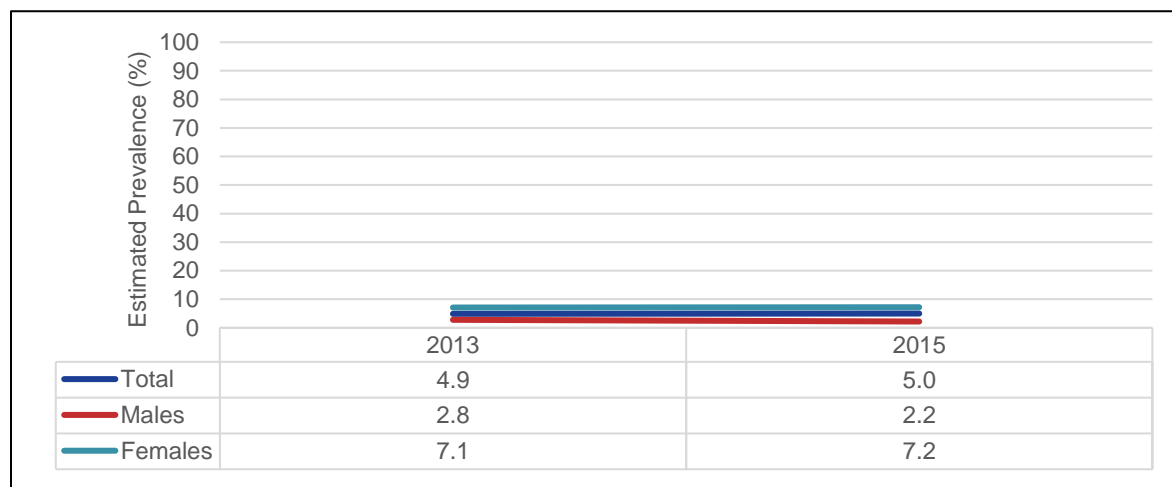


Figure 9. Prevalence of Used a Shot, Patch, or Birth Control Ring During Last Sexual Intercourse Among WV High School Students

Data source: WV Department of Education, Youth Risk Behavior Survey

Table 9 displays the prevalence of used a shot, patch, or birth control ring among high school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences in the prevalence of this indicator.

Table 9. Prevalence of Used a Shot, Patch, or Birth Control Ring During Last Sexual Intercourse Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	5.0	2.4-7.6	1,198
Male	2.2	0.0-4.4	228
Female	7.2	3.4-11.0	970
9th	5.4	0.0-12.0	205
10th	4.7	0.2-9.2	221
11th	5.2	1.5-8.9	356
12th	4.9	0.2-9.5	417

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

Used Birth Control Pills, IUD, Implant, Shot, Patch, or Birth Control Ring Before Last Sexual Intercourse

Definition: Weighted percentage of students who used birth control pills, IUD, implant, shot, patch, or birth control ring before last sexual intercourse to prevent pregnancy (among those who were currently sexually active).

High school students

The prevalence of used birth control pills, IUD, implant, shot, patch, or birth control ring among high school students was 36.6% in 2015.

Figure 10 displays the prevalence of this indicator among high school students remained stable from 2013 to 2015 for the total population as well as among both males and females.

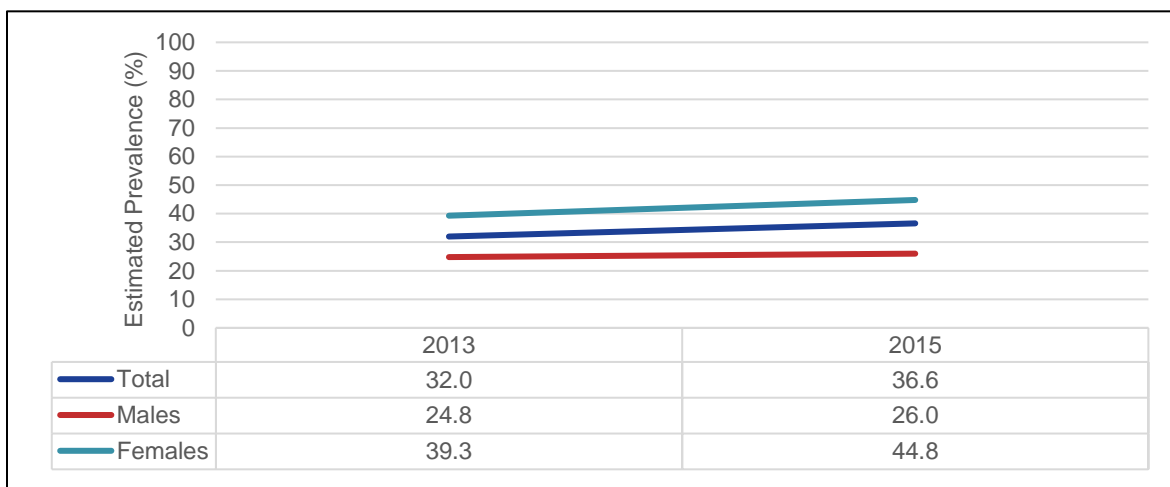


Figure 10. Prevalence of Used Birth Control Pills, IUD, Implant, Shot, Patch, or Birth Control Ring Before Last Sexual Intercourse Among WV High School Students

Data source: WV Department of Education, Youth Risk Behavior Survey

Table 10 displays the prevalence of used birth control pills, IUD, implant, shot, patch, or birth control ring among high school students by demographic characteristics for 2015. The results indicate the prevalence was significantly higher among females than among males. There was no significant grade difference for this indicator.

Table 10. Prevalence of Used Birth Control Pills, IUD, Shot, Patch, or Birth Control Ring Before Last Sexual Intercourse Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	36.6	30.4-42.9	8,761
Male	26.0	19.1-32.8	2,694
Female	44.8	36.1-53.5	6,054
9th	29.4	18.4-40.5	1,107
10th	27.3	18.5-36.1	1,278
11th	41.3	32.2-50.3	2,823
12th	40.9	29.1-52.7	3,483

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

Used Both a Condom and Birth Control Pills, IUD, Implant, Shot, Patch, or Birth Control Ring Before Last Sexual Intercourse

Definition: Weighted percentage of students who used both a condom and birth control pills, IUD, implant, shot, patch, or birth control ring before last sexual intercourse to prevent STD and pregnancy (among those who were currently sexually active).

High school students

The prevalence of used both a condom and birth control pills, IUD, implant, shot, patch, or birth control ring among high school students was 11.6% in 2015.

Figure 11 displays the prevalence of this indicator among high school students remained stable from 2013 to 2015.

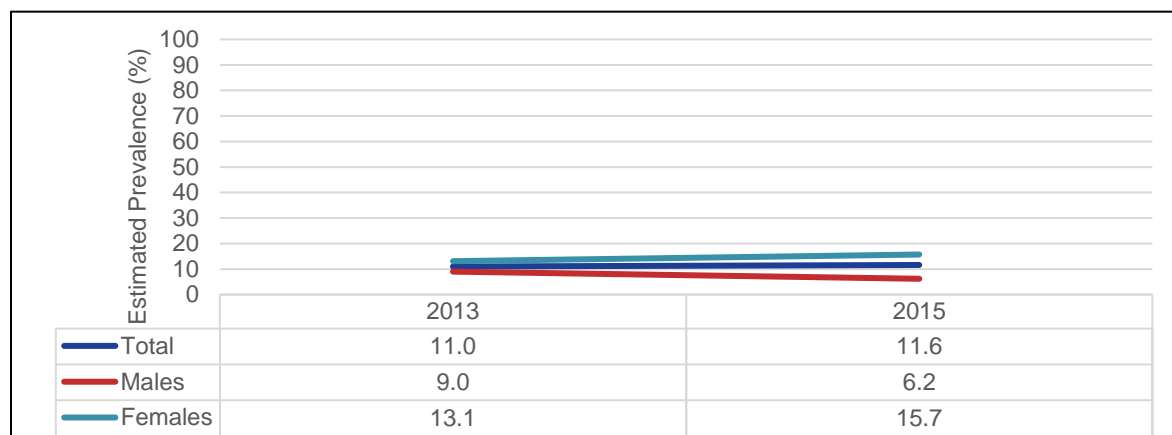


Figure 11. Prevalence of Used Both a Condom and Birth Control Pills, IUD, Implant, Shot, Patch, or Birth Control Ring Before Last Sexual Intercourse Among WV High School Students

Data source: WV Department of Education, Youth Risk Behavior Survey

Table 11 displays the prevalence of used both a condom and birth control pills, IUD, implant, shot, patch, or birth control ring among high school students by demographic characteristics for 2015. The results indicate the prevalence was significantly higher among females than among males. There was no significant grade difference for this indicator.

Table 11. Prevalence of Used Both a Condom and Birth Control Pills, IUD, Implant, Shot, Patch, or Birth Control Ring Before Last Sexual Intercourse Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	11.6	8.8-14.3	2,751
Male	6.2	2.7-9.6	637
Female	15.7	12.2-19.2	2,115
9th	10.5	2.3-18.8	389
10th	7.0	0.6-13.4	327
11th	15.1	9.7-20.5	1,023
12th	11.9	5.9-17.8	1,012

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

Did Not Use Any Method to Prevent Pregnancy

Definition: Weighted percentage of students did not use any method to prevent pregnancy during last sexual intercourse (among those who were currently sexually active).

High school students

The prevalence of did not use any method to prevent pregnancy among high school students was 12.0% in 2015.

Figure 12 displays the prevalence of this indicator from 1993 to 2015. The results indicate the prevalence significantly decreased from 1993 to 1997 and has remained stable since 1997 for the total population. The prevalence among males significantly decreased from 1993 to 2009 with no significant change from 2009 to 2015. The prevalence among females has remained stable since 1993.

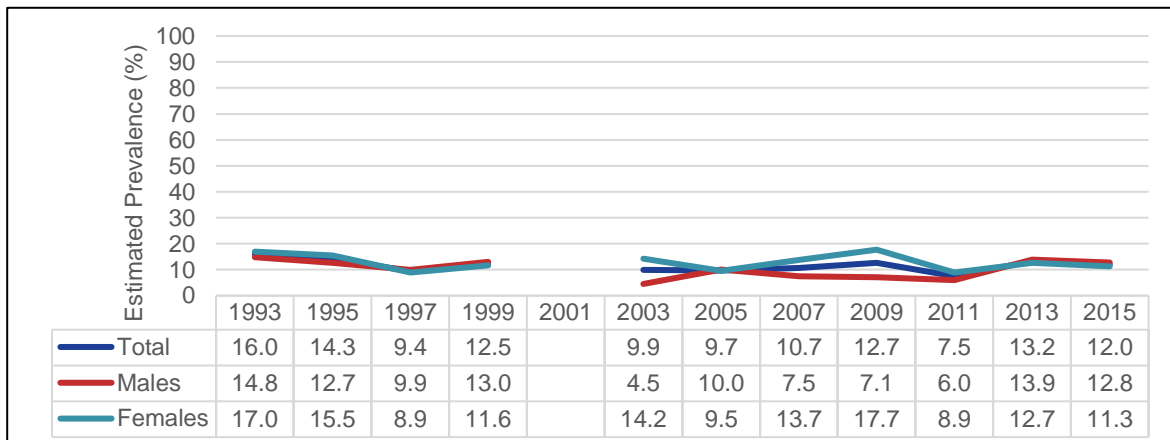


Figure 12. Prevalence of Did Not Use Any Method to Prevent Pregnancy Among WV High School Students

Data source: WV Department of Education, Youth Risk Behavior Survey

Table 12 displays the prevalence of did not use any method to prevent pregnancy among high school students by demographic characteristics for 2015. The results indicate no significant gender or grade differences in the prevalence of this indicator.

Table 12. Prevalence of Did Not Use Any Method to Prevent Pregnancy Among WV High School Students by Gender and Grade Level, 2015

Characteristic	Estimated prevalence (%)	95% confidence interval	Weighted frequency
Total	12.0	8.8-15.2	2,873
Male	12.8	6.4-19.2	1,329
Female	11.3	8.1-14.6	1,530
9th	17.8	8.2-27.3	668
10th	16.4	5.9-26.9	766
11th	10.4	5.1-15.6	709
12th	8.6	2.8-14.4	730

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, Sipsma, Ickovics, Lin, and Kershaw (2015) found that drinking behavior among adolescents is highly associated with sexual behavior and inconsistent contraception use. This puts teenagers at higher risk for pregnancy and STD exposure.

Research has also found that several other factors influence adolescent behavior. Jeon and Goodson (2015) 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 has 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.

References

- Banspach, S., Zaza, S., Dittus, P., Michael, S., Brindis, C. D., & Thorpe, P. (2016). CDC grand rounds: adolescence – preparing for lifelong health and wellness. *Morbidity and Mortality Weekly Report*, 65(30), 759-762.
- Jeon, K. C. & Goodson, P. (2015). U.S. adolescents' friendship networks and health risk behaviors: a systematic review of studies using social network analysis and Add Health data. *PeerJ*, 3:e1052; DOI 10.7717/peerj.1052.
- Kann, L., McManus, T., Harris, W. A., Shanklin, S. L., Flint, K. H., Hawkins, J., Queen, B., Lowry, R., O'Malley Olsen, E., Chyen, D., Whittle, L., Thornton, J., Lim, C., Yamakawa, Y., Brener, N., & Zaza, S. (2016). Youth risk behavior surveillance – United States, 2015. *MMWR Surveillance Summaries*, 65(5), 1-174.
- Sipsma, H. L., Ickovics, J. R., Lin, J., & Kershaw, T. S. (2015). The impact of future expectations on adolescent sexual risk behavior. *Journal of Youth and Adolescence*, 44(1), 170-183.



Steven L. Paine, Ed.D.
State Superintendent of Schools