Missouri Youth and Tobacco, 2007-2017

Results from the Youth Tobacco Survey and Youth Risk Behavior Survey

Missouri Department of Health and Senior Services
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Introduction

Tobacco use continues to be a leading cause of death and disability in Missouri and the United States. From 2005-2015, an estimated 107,926 smoking attributable deaths occurred in Missouri.[1] Preventing young people from becoming addicted to tobacco is a priority health objective for Missouri and the nation. Nearly 9 out of 10 cigarette smokers first tried smoking before age 18.[2]

The Missouri Department of Health and Senior Services, in collaboration with the Missouri Department of Elementary and Secondary Education (DESE) and the U.S. Centers for Disease Control and Prevention (CDC) conducts biennial (every odd year) surveys of public middle and high school students to track progress in efforts to reduce youth tobacco use and exposure to secondhand smoke. Information about the methodology for the Youth Tobacco Survey (YTS) and Youth Risk Behavior Survey (YRBS) may be found on page 19.

This report summarizes key findings from the 2017 YTS and YRBS and includes results from previous years that demonstrate change over time. To view reports of YTS findings from previous years, go to http://health.mo.gov/data/yts/data.php. YRBS data may be found on the CDC website at https://www.cdc.gov/healthyyouth/data/yrbs/index.htm.

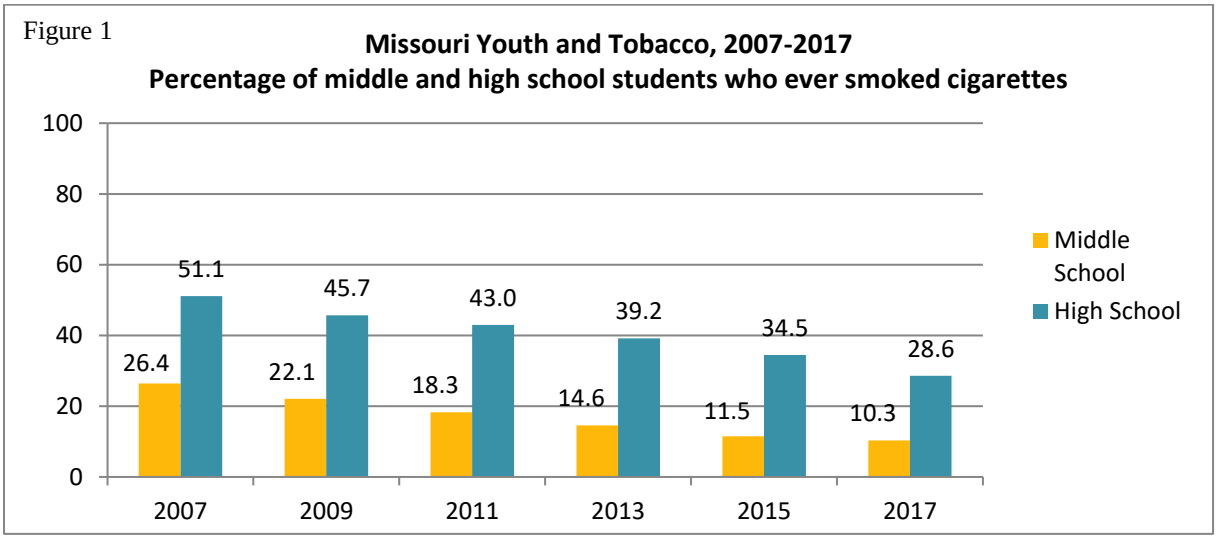
2017 Key Findings

- The percentage of middle and high school students that ever tried smoking cigarettes continued to decline.
- Current cigarette smoking among middle and high schools students continued to decline with the prevalence for both reduced by almost one-half since 2007.
- Daily cigarette smoking among high school students continued to decline.
- The percentage of males who used smokeless tobacco on one or more of the past 30 days significantly declined from 17.0 percent in 2015 to 8.1 percent in 2017.
- The percentage of middle school students who ever used any form of tobacco declined from 34.6 percent in 2007 to 15.1 percent in 2017.
- The percentage of high school students who ever used any form of tobacco increased significantly from 2013-2015 due to use of electronic vapor products.
- Forty percent of high school students and 14 percent of middle school students had ever tried a vapor product.
- There was a significant decrease in the percentage of high school students who currently used an electronic vapor product on one or more of the past 30 days from 22.0 percent in 2015 to 10.9 percent in 2017.
- About one-half of middle (49.6%) and high (47.8%) school current smokers tried to quit in the past year.
- Almost one-half of middle (44.6%) and high (50.6%) school students were exposed to secondhand smoke in a public indoor or outdoor place.
- More than 80 percent of middle school current smokers live with someone that smokes tobacco products.
- About one-third of middle (30.8%) and high (36.6%) school students rode in or drove family vehicles in which smoking was allowed, yet the vast majority thought smoking should never be allowed in vehicles.

Tobacco Use

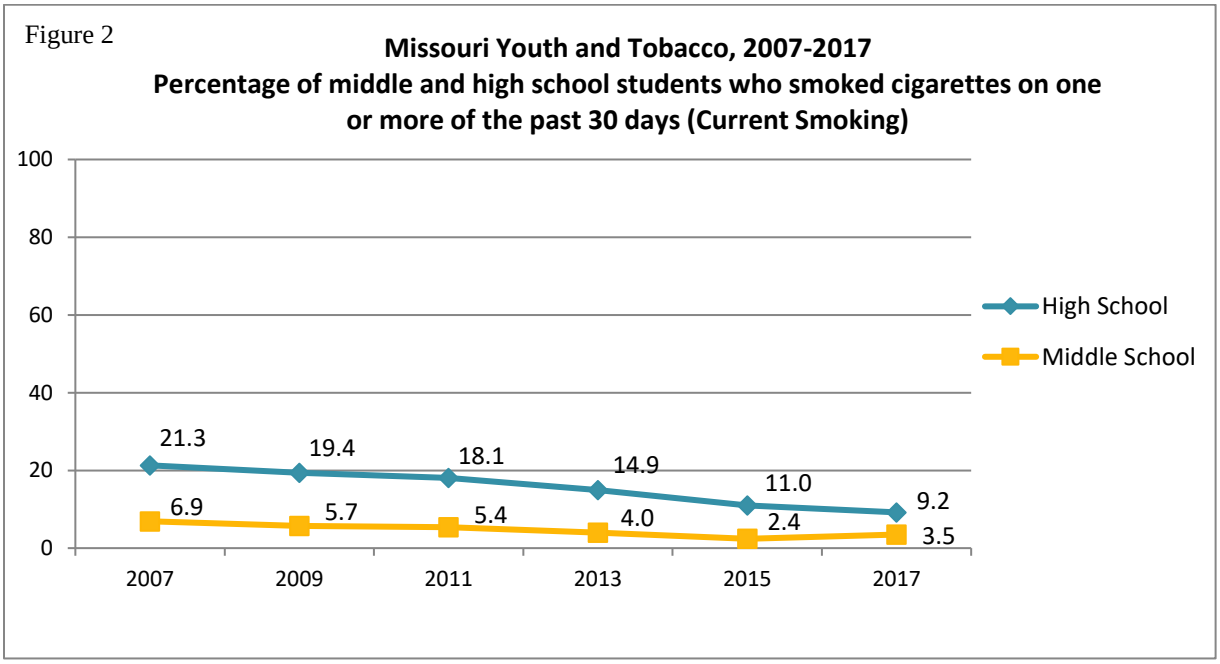
The percentage of middle and high school students who had ever tried smoking cigarettes declined significantly from 2007 to 2017 (Figure 1).

Figure 1



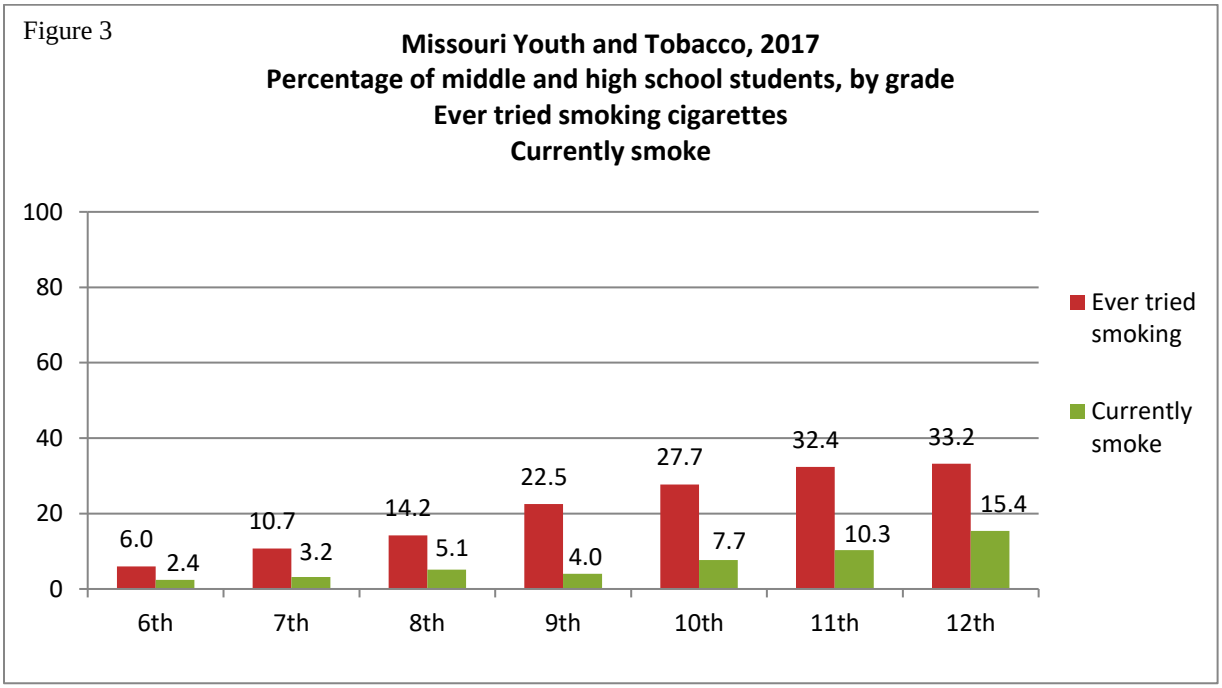
Current cigarette smoking among middle and high school students declined significantly from 2007 to 2017 (Figure 2).

Figure 2



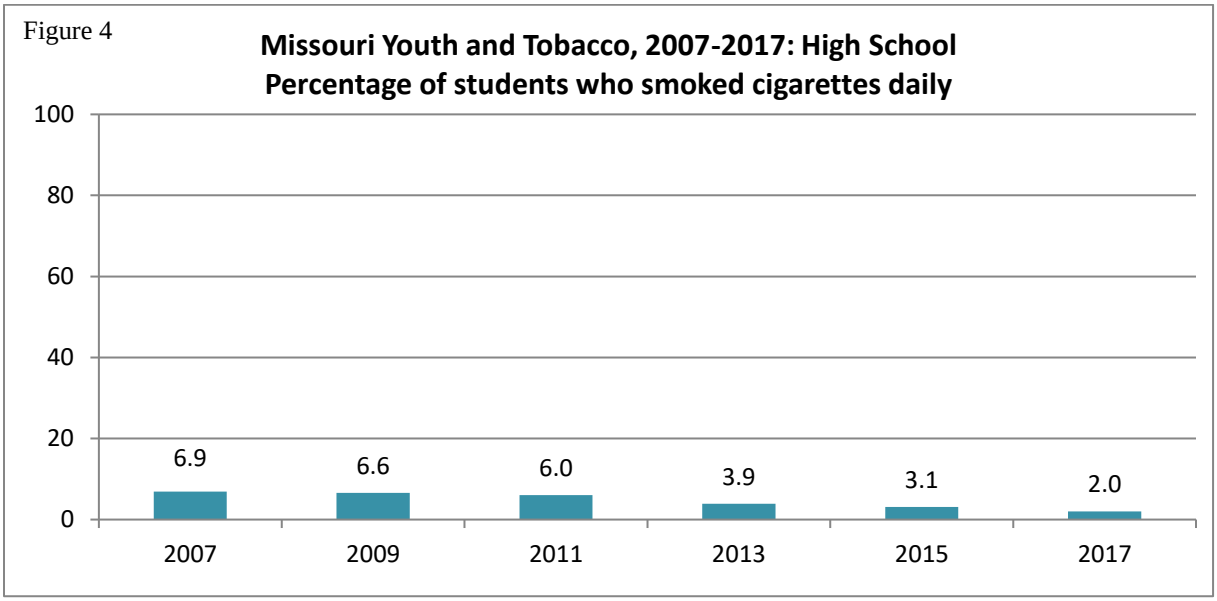
In 2017, there was a higher percentage of 12th grade students who had ever tried smoking cigarettes (33.2%) than 6th grade students (6.0%). Current cigarette smoking among 6th grade students was 2.4 percent while the percentage of 12th grade students was 15.4 percent (Figure 3).

Figure 3



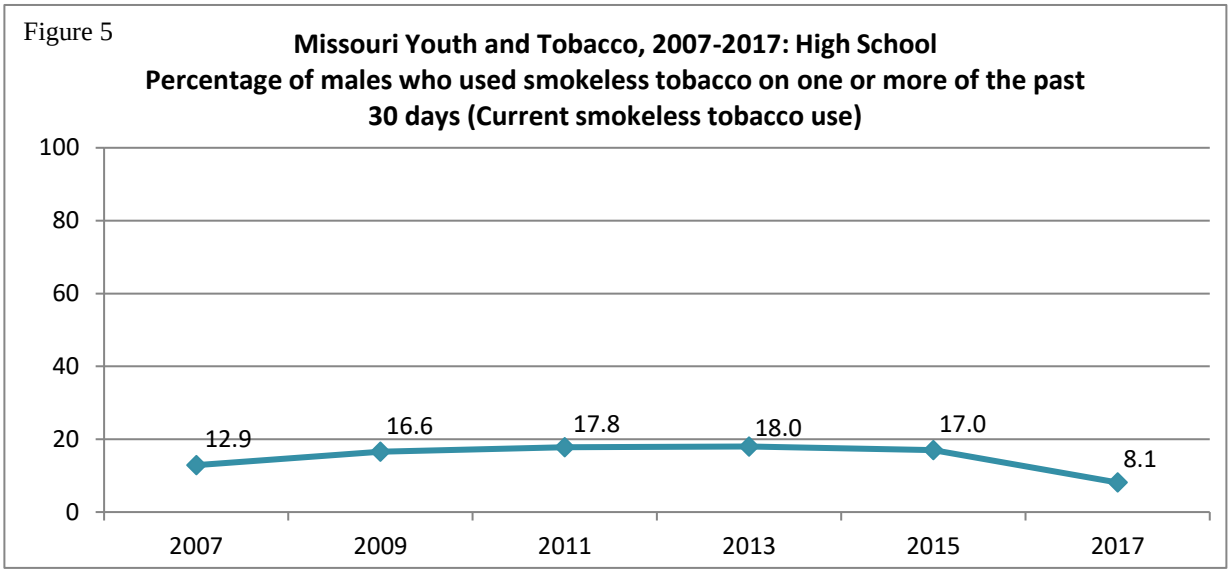
The percentage of high school students who smoked cigarettes daily declined significantly from 6.9 percent in 2007 to 2.0 percent in 2017 (Figure 4).

Figure 4



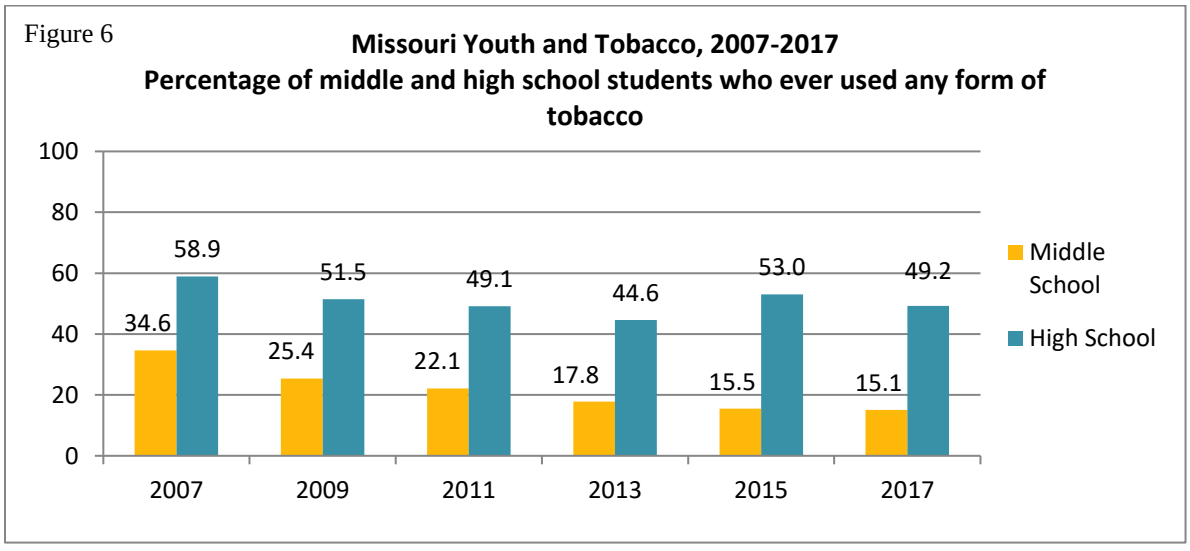
The percentage of males who used smokeless tobacco on one or more of the past 30 days significantly increased from 2007 to 2013 before significantly declining from 17.0 percent in 2015 to 8.1 percent in 2017 (Figure 5).

Figure 5



The percentage of middle school students who had ever used any form of tobacco declined significantly from 2007 to 2017 (Figure 6). Among high school students, who ever used any form of tobacco also declined significantly from 2007 to 2013, but increased significantly in 2015 due to the increase in trying electronic vapor products (see page 8).

Figure 6

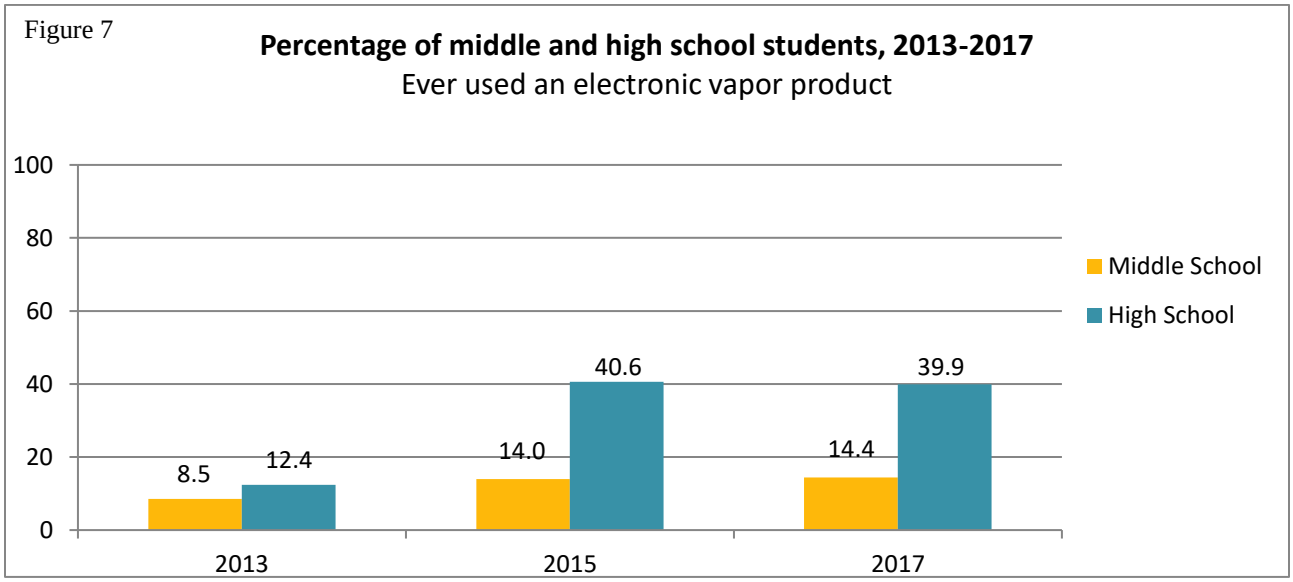


***Note**: From 2005-2011, any form of tobacco included cigarettes, cigars, smokeless, pipe, bidis, and kreteks. For middle school students, e-cigarettes were added in 2013 and electronic vapor products were added in 2015. Any form of tobacco used by high school students in 2013 was limited to cigarettes, cigars, chewing tobacco, and e-cigarettes and in 2015 electronic vapor products were added.*

Electronic Vapor Products

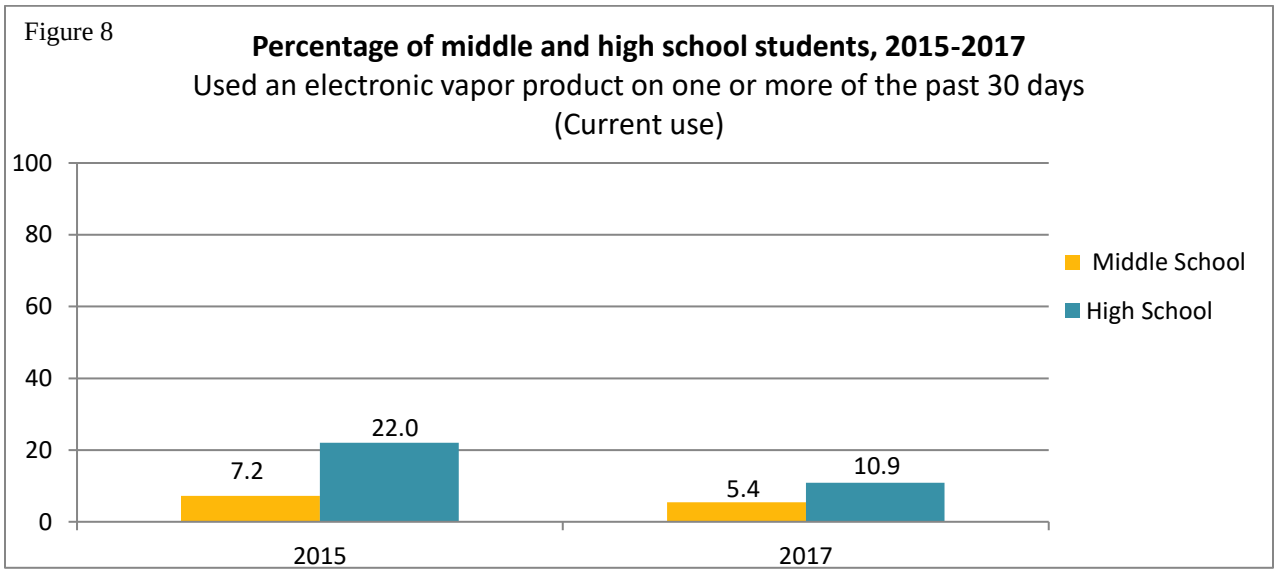
In 2017, the prevalence of ever used an electronic cigarette or electronic vapor product was at 14.4 percent among middle school students and 39.9 percent among high school students. This prevalence significantly increased from 2013 to 2015 among middle and high school students, but there was no significant change from 2015 to 2017 (Figure 7).

Figure 7



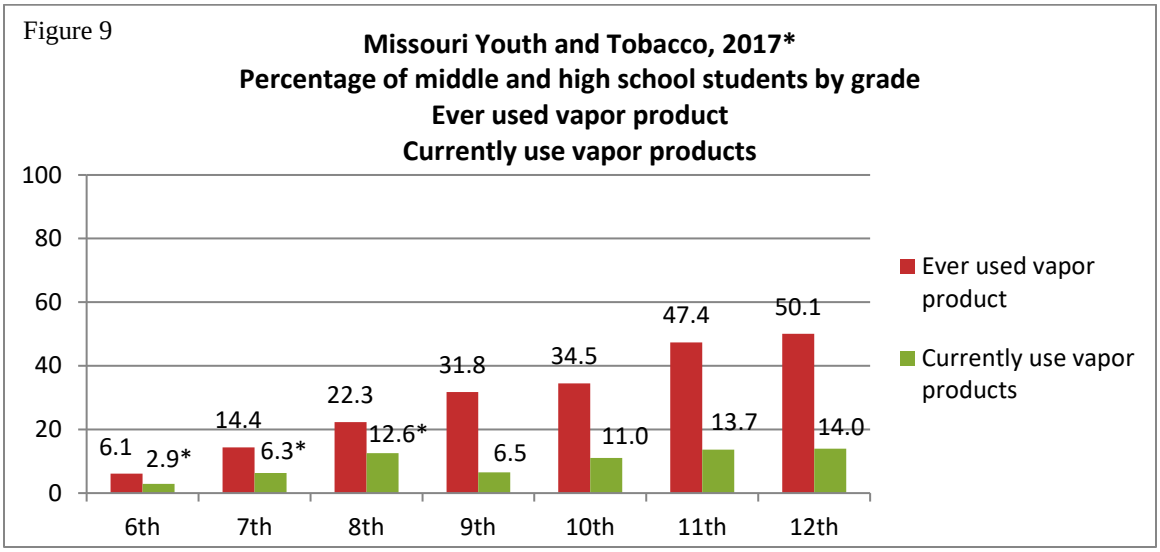
There was a significant decrease from 2015 to 2017 in the percentage of high school students who currently used an electronic vapor product on one or more of the past 30 days (Figure 8).

Figure 8



The percentage of 6th grade students who ever tried vapor products was 6.1 percent compared to 50.1 percent of 12th grade students (Figure 9). Fourteen percent of 12th grade students currently use vapor products.

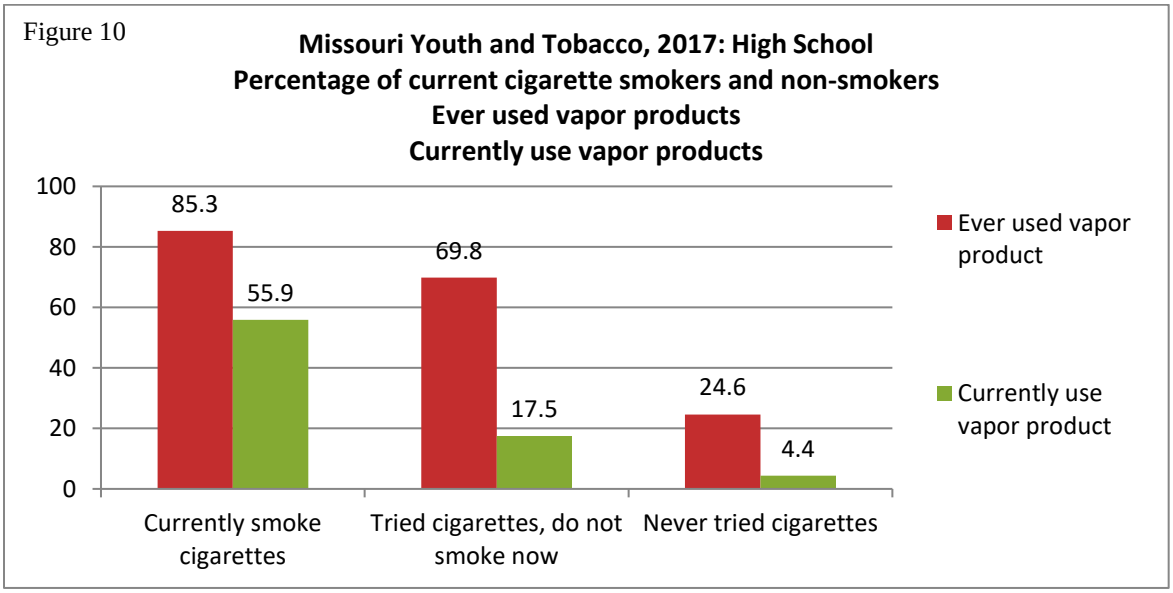
Figure 9



*Middle school current use data from 2015, question was not asked on the 2017 survey.

Among high school current cigarette smokers, 85.3 percent had ever used a vapor product and 55.9 percent currently used vapor products (Figure 10). Among students who had tried cigarettes, but did not smoke now, 69.8 percent had ever used a vapor product and 17.5 percent were current vapor users. Among students who had never tried smoking cigarettes, 24.6 percent had ever used a vapor product and only 4.4 percent currently used the products. This indicates that current smokers are more likely than former and non-smokers to ever try or currently use vapor products.

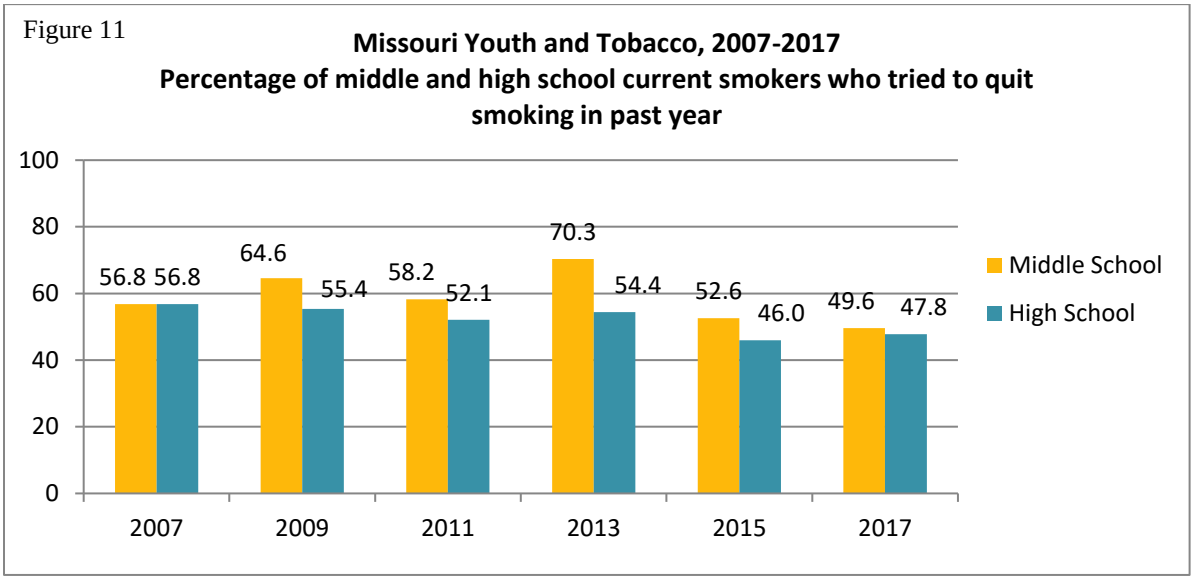
Figure 10



Quit Attempts and Assistance

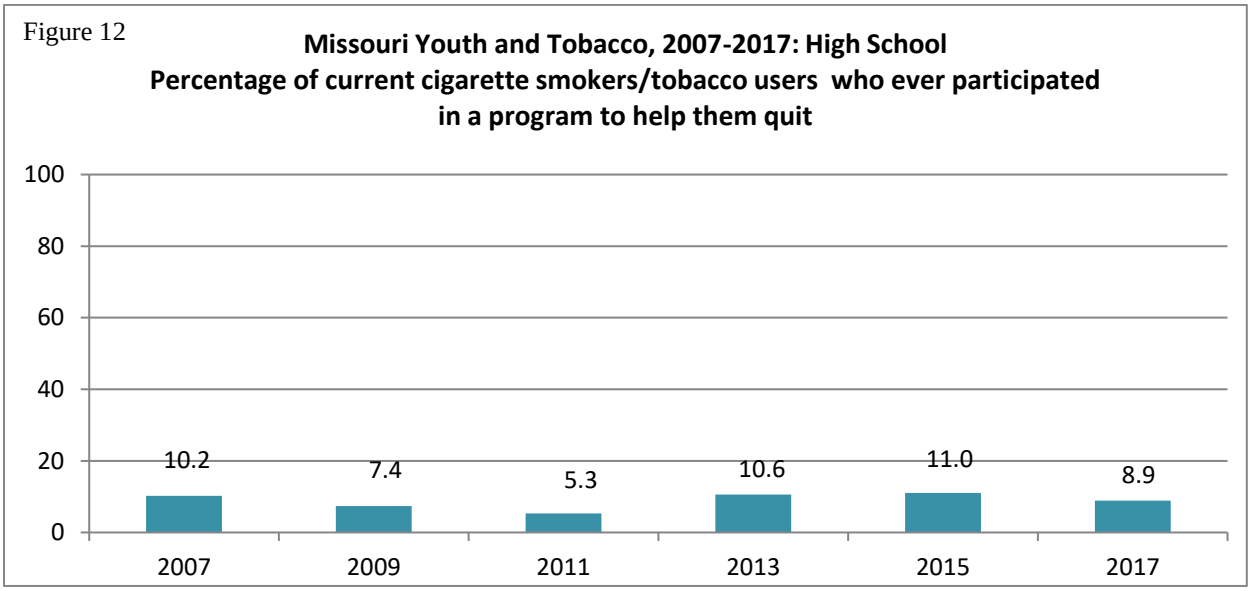
About one-half of middle and high school current smokers tried to quit each year from 2007-2017 (Figure 11).

Figure 11



Few high school students who currently smoked or were a tobacco user (2007-2017) had participated in a program to help them quit (Figure 12). In 2017, only 4.1 percent of high school students had special groups or classes at school for students who wanted to quit using tobacco.

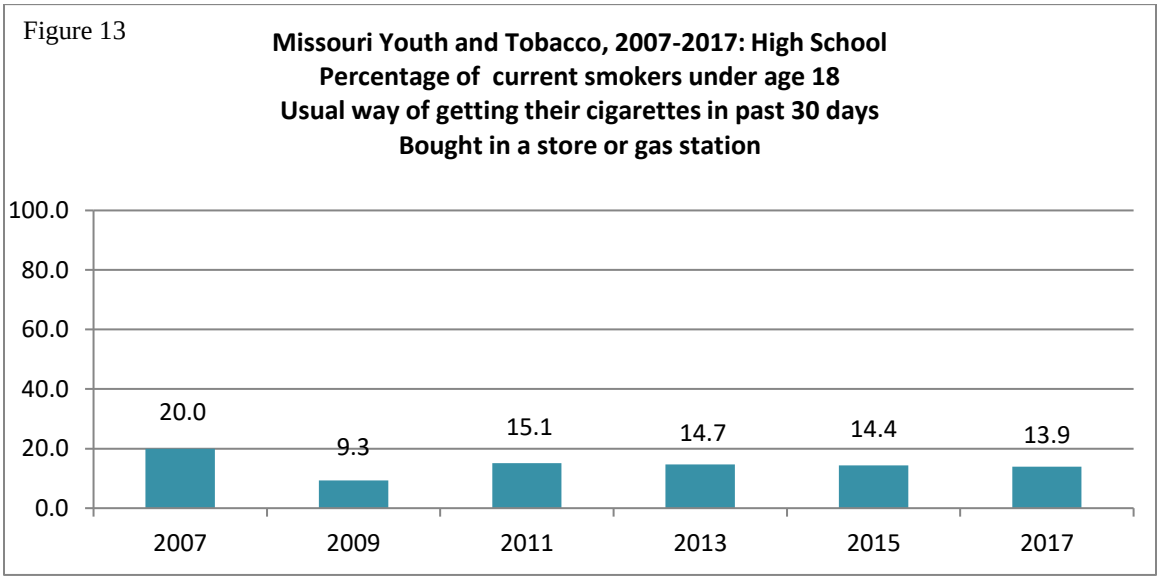
Figure 12



Youth Access to Cigarettes

In 2017, among high school smokers younger than 18 years of age, 13.9 percent usually got their cigarettes by buying them in a store or gas station in the 30 days prior to the survey (Figure 13).

Figure 13

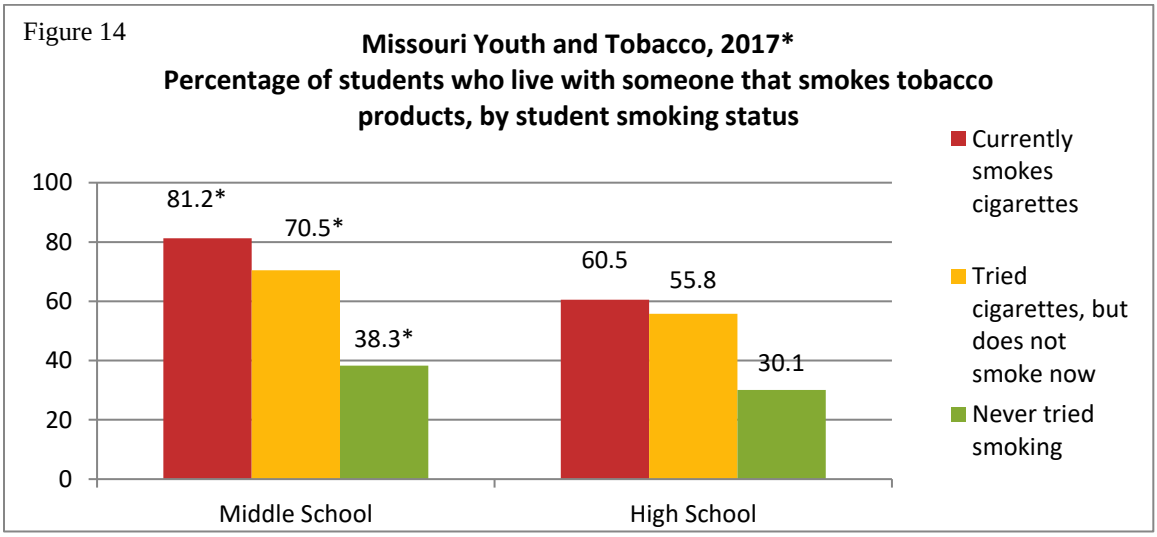


Influences to Use Tobacco

Living with someone who smokes

A significantly greater percentage of middle and high school students who smoked lived with someone that smoked compared to students who had never tried smoking (Figure 14). This is particularly true for middle school students (81.2%) compared to high school students (60.5%).

Figure 14

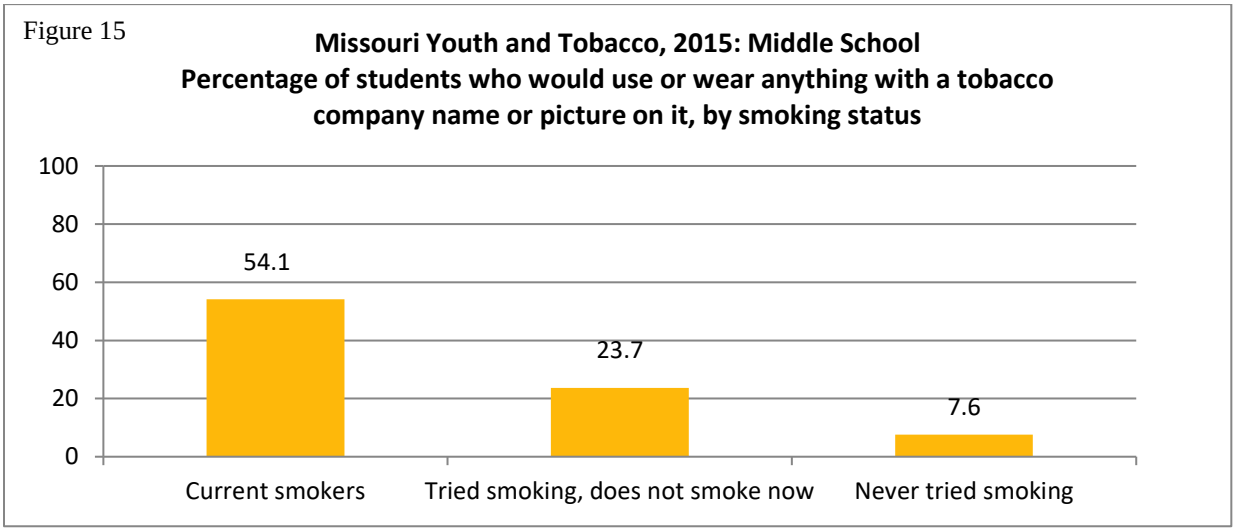


*Middle school data from 2015, question was not asked on the 2017 survey.

Tobacco Product Promotion

In 2015, a significantly greater percentage of middle school smokers would wear or use something with a tobacco company name or picture on it than students who tried, but did not smoke now or students who had never tried smoking (Figure 15).

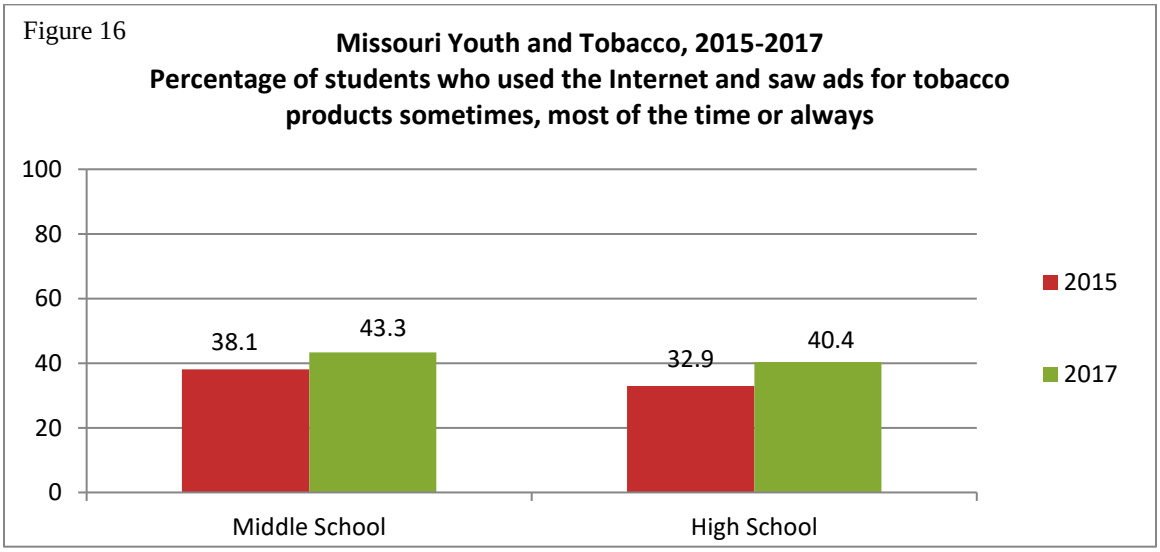
Figure 15



*Question was not asked on the 2017 survey.

There was a significant increase from 2015 to 2017 in the percent of middle and high school students who used the Internet and saw ads for tobacco products sometimes, most of the time or always (Figure 16).

Figure 16

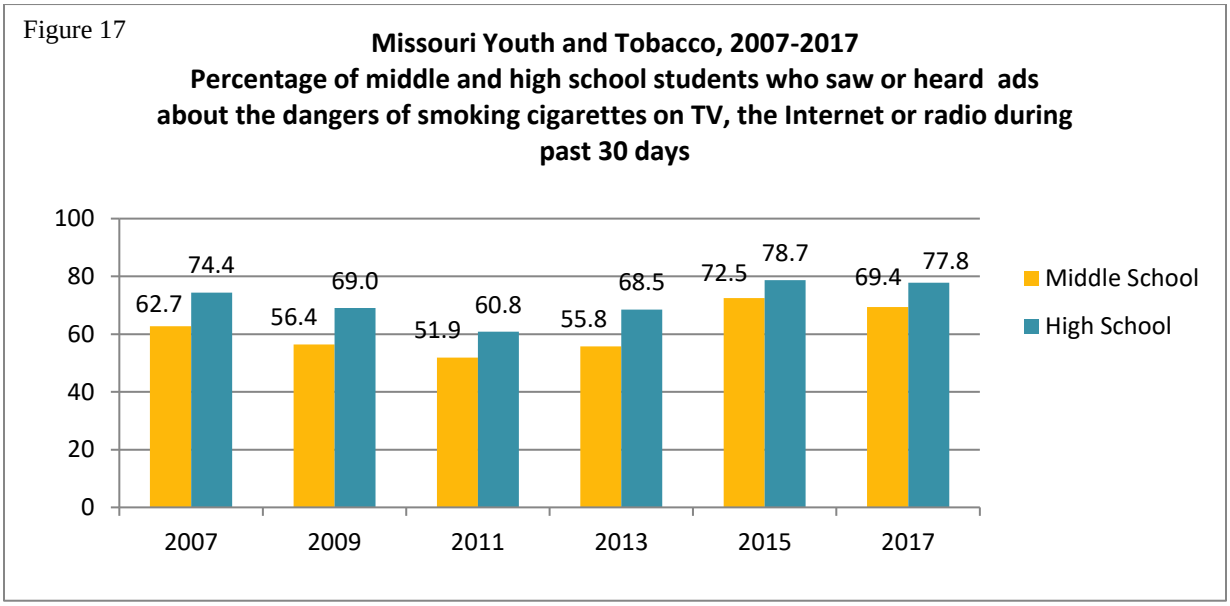


Dangers of Tobacco Use Education

Media Messages

There was no significant change in the percentage of high school students who saw or heard anti-smoking ads during the past 30 days between 2007 to 2017 (Figure 17). The percentage of middle school students who saw or heard ads about the dangers of smoking increased significantly from 2013 to 2015.

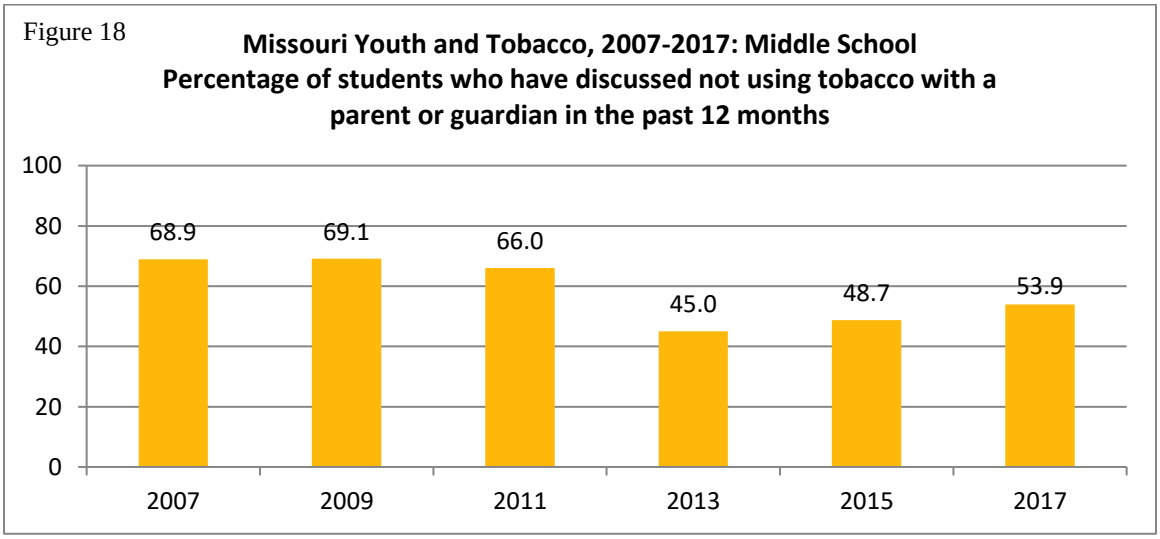
Figure 17



Talking with parent or guardian

The percentage of middle school students whose parents or guardians talked with them, about not using any type of tobacco product in the past 12 months, declined significantly from 2011 to 2013 (Figure 18).

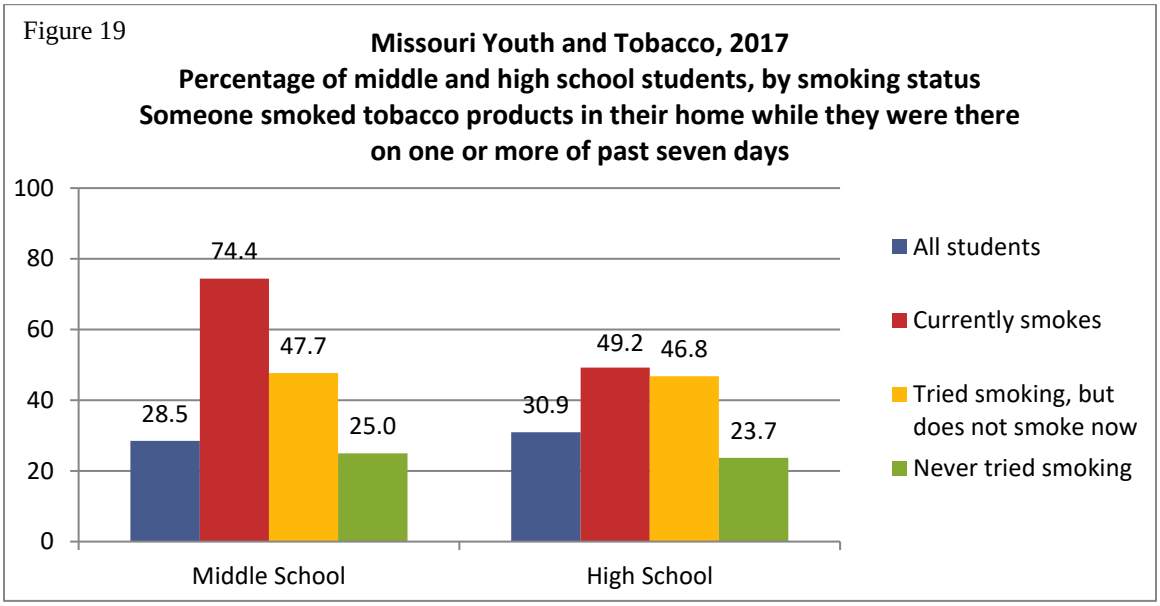
Figure 18



Secondhand Smoke Exposure

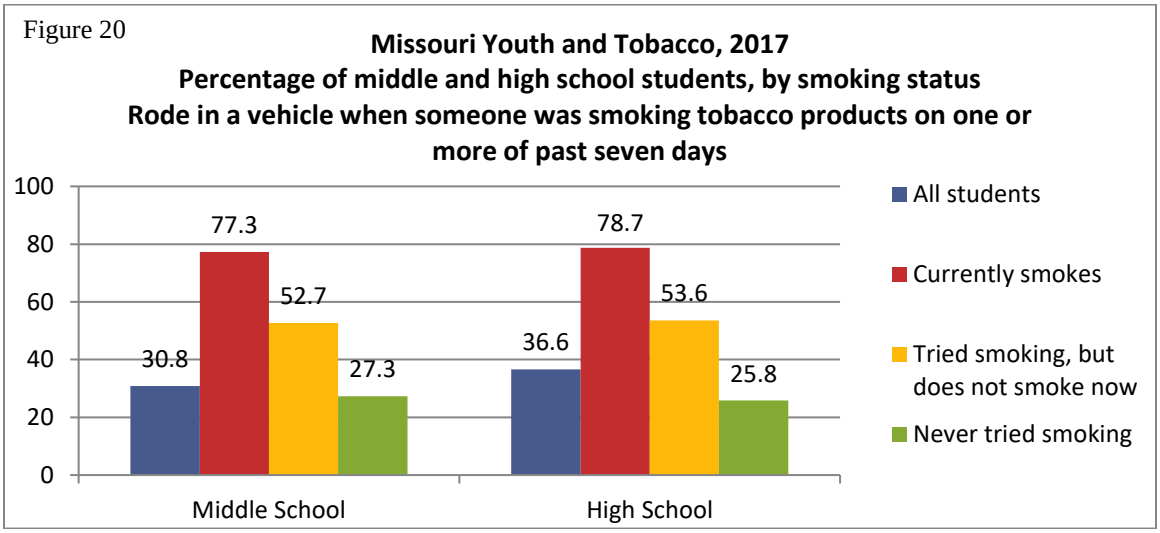
In 2017, 28.5 percent of middle and 30.9 percent of high school students had someone smoke in their home while they were there on one or more of the past seven days (Figure 19). The prevalence of both middle and high school students who were exposed to secondhand smoke in their home was significantly greater for students who had tried cigarettes than for those who had never tried smoking.

Figure 19



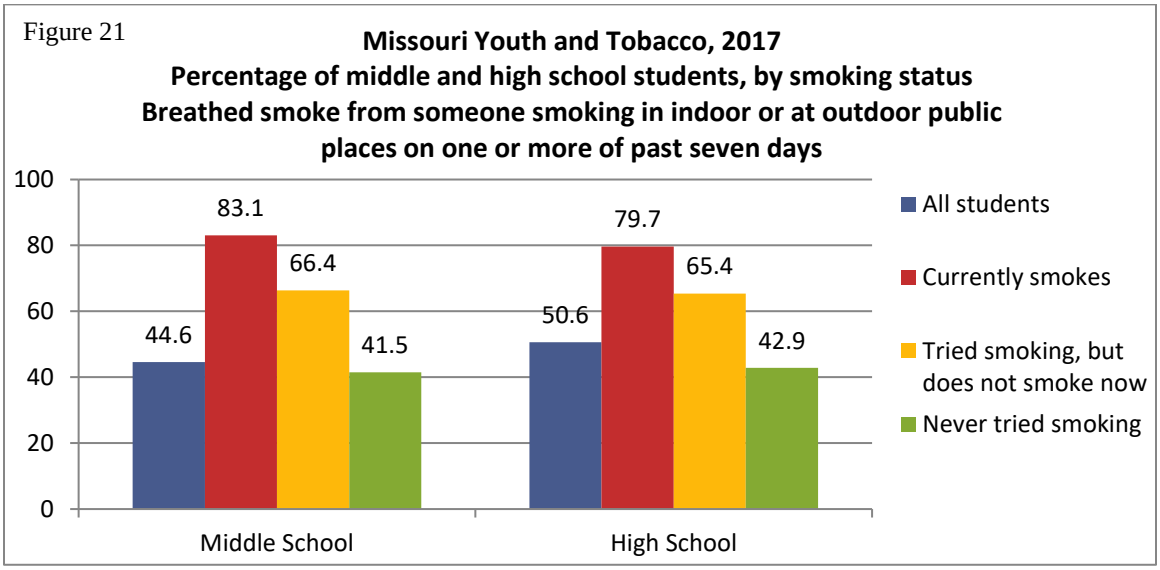
In 2017, 30.8 percent of middle and 36.6 percent of high school students rode in a vehicle when someone who was smoking on one or more of the past seven days (Figure 20). The prevalence of both middle and high school students who were exposed to secondhand smoke in a car was significantly greater for individuals who had ever tried cigarettes than for those who had never tried smoking.

Figure 20



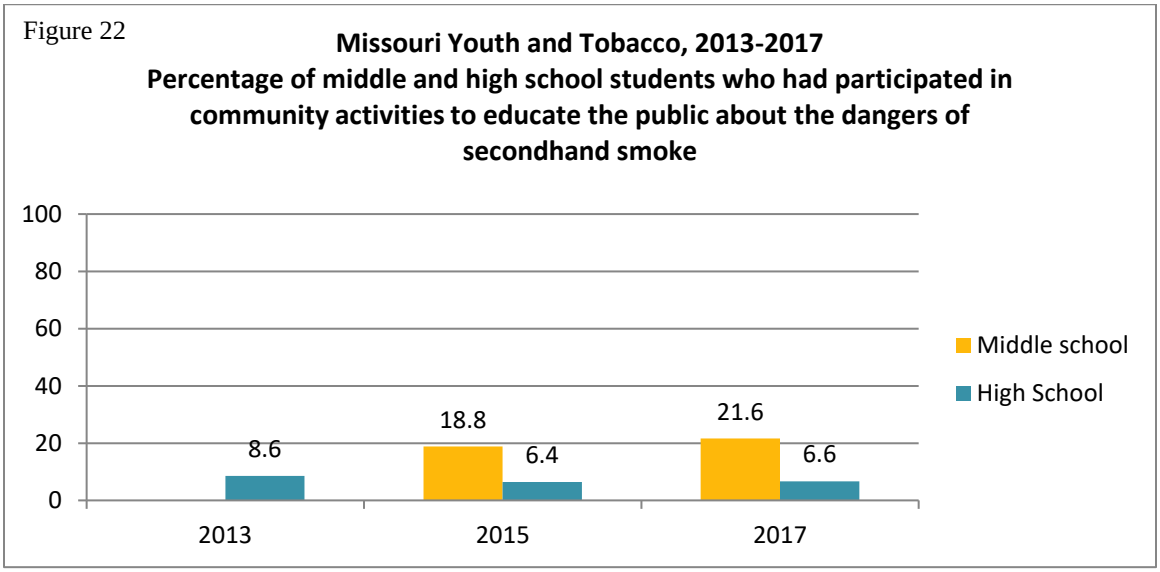
About one-half of middle (44.6%) and high school (50.6%) students breathed smoke from someone who was smoking at a public indoor or outdoor place on one or more of the past seven days during 2017 (Figure 21). Among students who had never tried smoking cigarettes, 41.5 percent of middle and 42.9 percent of high school students were exposed to secondhand smoke in a public place.

Figure 21



In 2017, 21.6 percent of middle and 6.6 percent of high school students had participated in community activities to educate the public about the dangers of secondhand smoke (Figure 22). No data was available for middle school students in 2013.

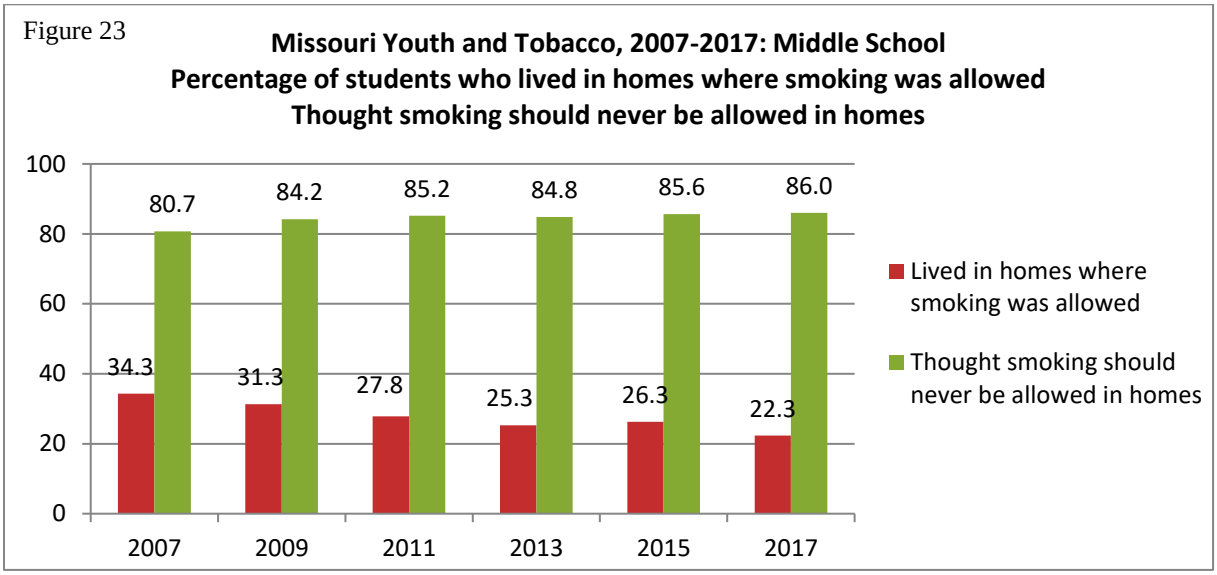
Figure 22



Secondhand Smoke Policies and Beliefs

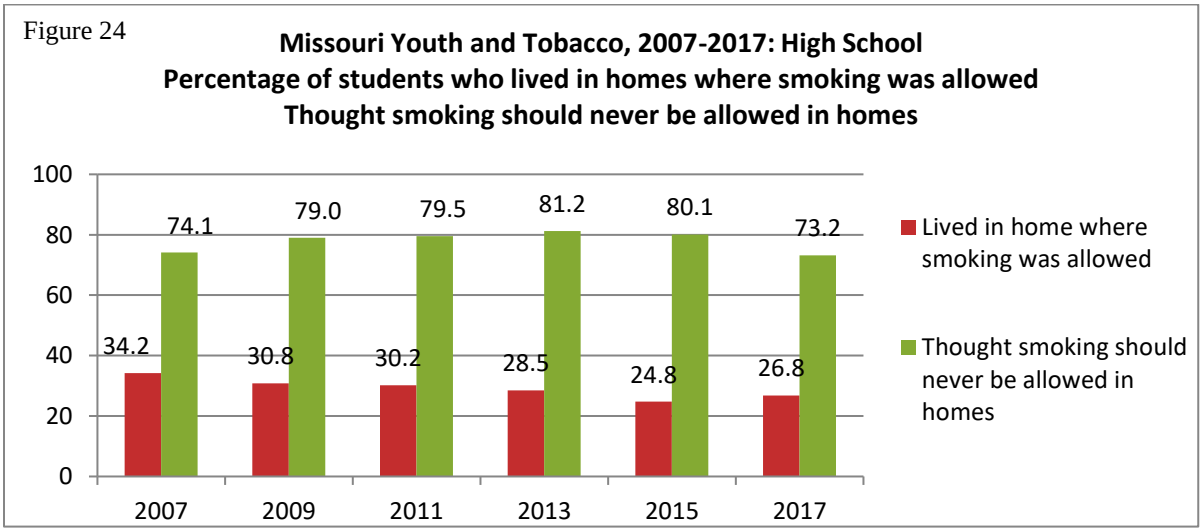
The percentage of middle school students who lived in homes where smoking was allowed significantly decreased from 34.3 percent in 2007 to 22.3 percent in 2017 (Figure 23). The percentage of middle school students who thought smoking should never be allowed in homes increased significantly from 80.7 percent in 2007 to 86.0 percent in 2017.

Figure 23



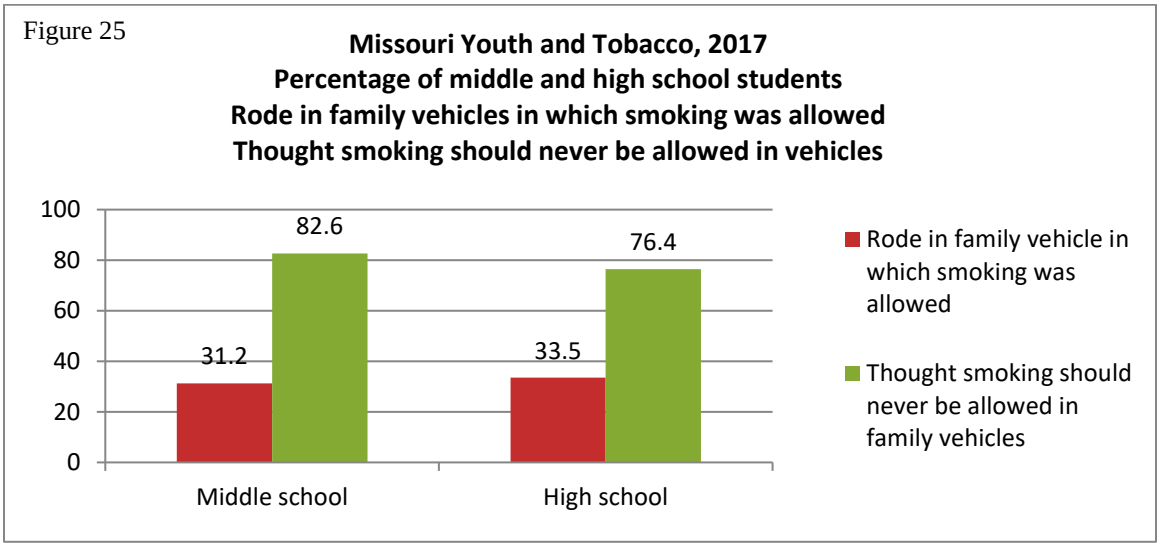
The percentage of high school students who lived in homes where smoking was allowed decreased significantly from 34.2 percent in 2007 to 26.8 percent in 2017 (Figure 24).

Figure 24



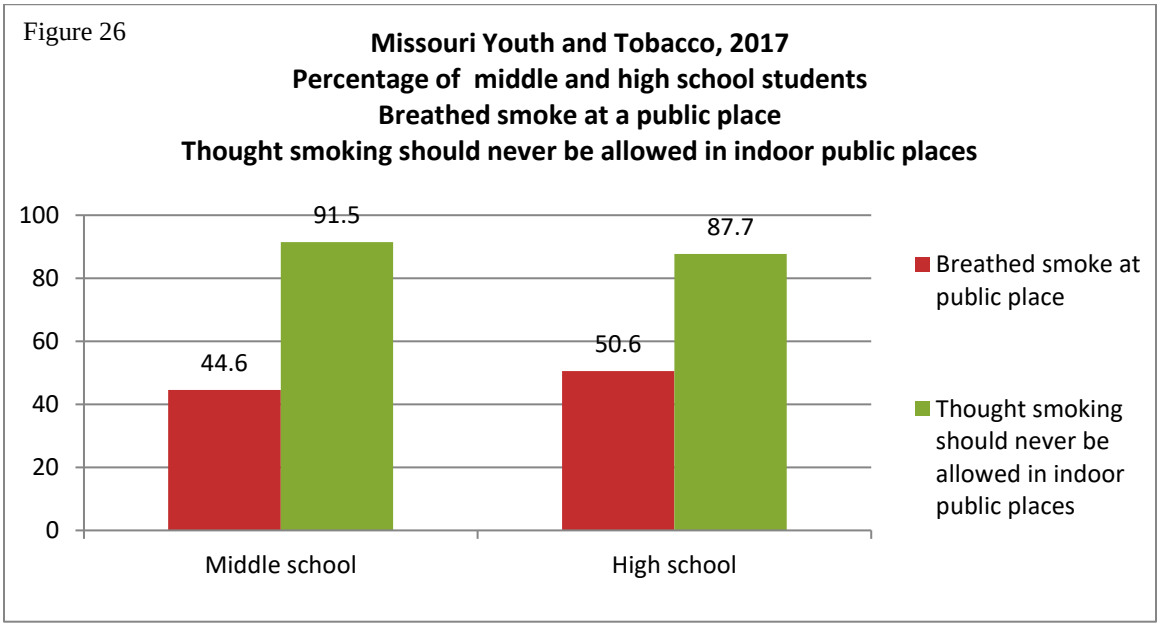
In 2017, about one-third of middle and high school students rode in or drove family vehicles in which smoking was allowed and the vast majority thought that smoking should never be allowed in vehicles (Figure 25).

Figure 25



In 2017, almost half of middle and high school students breathed smoke from someone who was smoking in indoor or outdoor public places (such as school buildings, stores, restaurants, stadiums, school grounds, parking lots, and parks) on one or more of the past seven days (Figure 26). The majority of middle (91.5%) and high school (87.7%) students thought smoking should never be allowed in indoor public places.

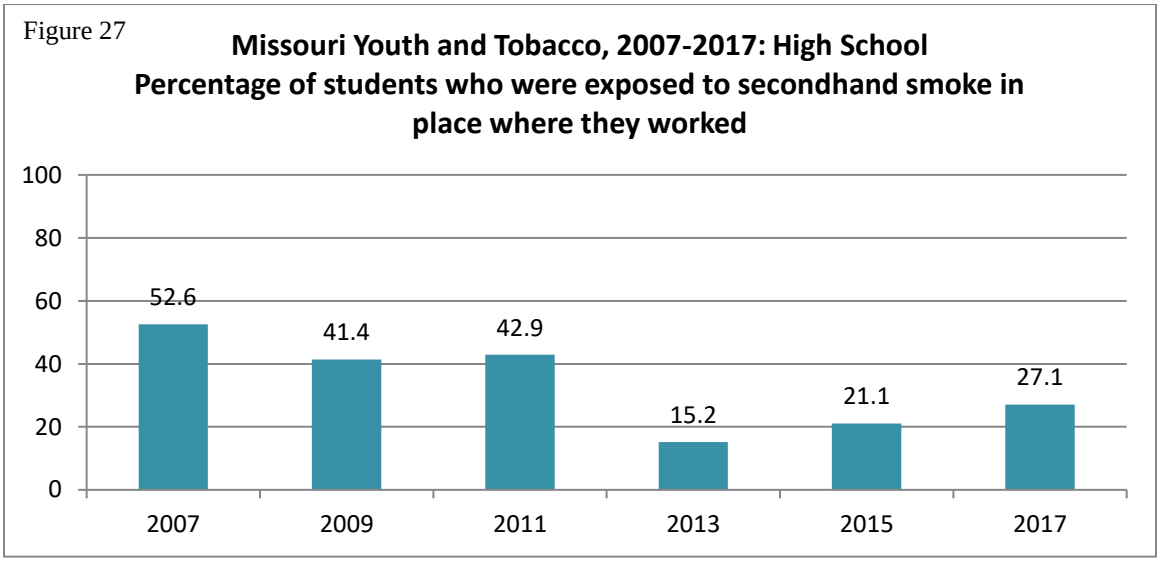
Figure 26



Secondhand Smoke in the Workplace

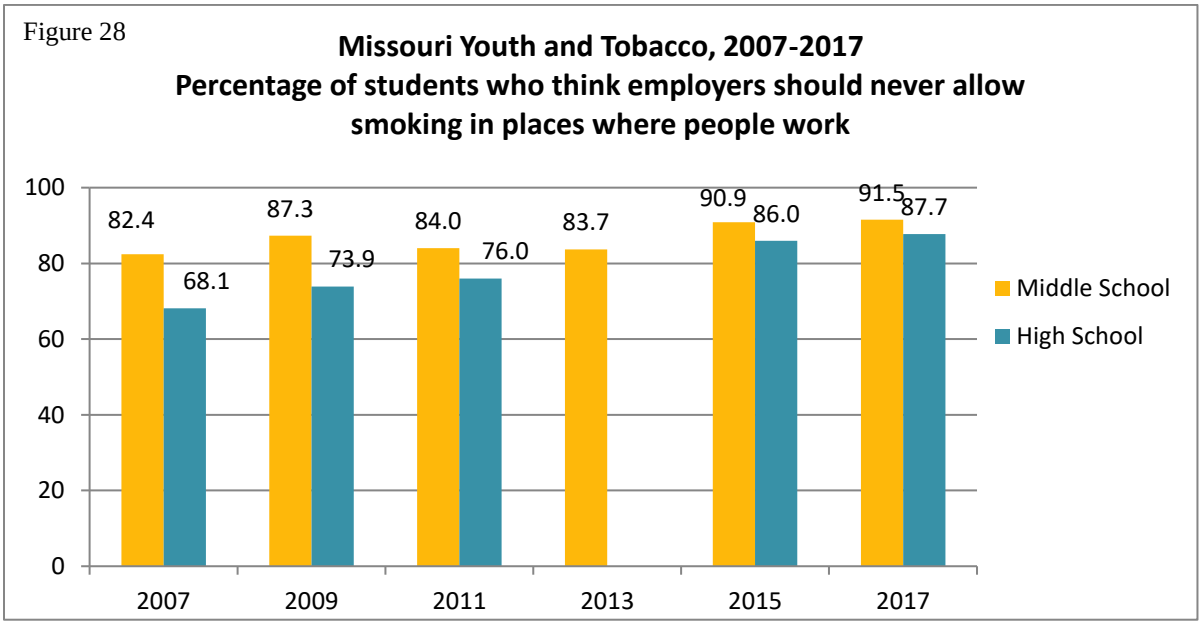
In 2017, among high school students who worked during the seven days before the survey, 27.1 percent breathed smoke from someone who was smoking tobacco products in the place where they worked (Figure 27). The percentage of students who were exposed to secondhand smoke in the place where they worked declined significantly from 2007 to 2015; however, the percentage increased significantly from 2015-2017.

Figure 27



The percentage of high school students who thought employers should never allow smoking in workplaces increased significantly from 68.1 percent in 2007 to 87.7 percent in 2017 and among middle school students from 82.4 percent in 2007 to 91.5 percent in 2017 (Figure 28).

Figure 28



***Note**: 2013 data for high school students are not available.*

Survey Methodology

The Missouri Youth Tobacco Survey (YTS) was conducted by the Missouri Department of Health and Senior Services (DHSS) with middle and high school students every odd-numbered spring from 2003 through 2011 and with middle school students only from 2013 through 2017. The Missouri Youth Risk Behavior Survey (YRBS) was administered by the Missouri Department of Elementary and Secondary Education (DESE) with high school students in odd-numbered springs from 1995 through 2011, and then by DHSS from 2013 through 2017.

Both paper and pencil surveys were supported by the CDC, which provided funding for survey administration, and performed school sampling, data tabulation, weighting and primary analysis. DHSS staff administered the surveys by obtaining participation of randomly selected schools, securing class schedules and randomly selecting classes for participation, providing survey materials to participating schools, and collecting and processing completed surveys for shipping to the CDC.

Sampling Design

All regular and charter public schools in Missouri containing grades 6-8 in which 6th grade was not the highest grade in the building were included in the sampling frame for middle schools. Buildings containing grades 9-12 were included in the sampling frame for high schools. A two-stage cluster sample design was used to produce a separate representative sample of students for middle and high school.

In the first-stage sampling, schools were randomly selected with probability proportional to the school enrollment size. In the second stage, systematic equal probability sampling with a random start was used to select classes from each school that participated in the survey. All classes in the selected schools were included in the second-stage sampling frame. All students in the selected classes were eligible to participate in the survey. School and student participation was anonymous and confidential. Passive parental permission was utilized unless the school district required active permission.

Response rates

Response rates were calculated by multiplying the school participation rate by the student participation rate for middle schools and high schools. The response rate must be equal to or greater than 60 percent for data to be weighted to adjust for unequal probability selection of each student and to reduce bias by compensating for differing patterns of non-response.

Sufficient responses for weighting the data have been obtained each year the YTS was conducted in Missouri. In 2017, 33 of 42 (78.6%) sampled middle schools participated with 1,813 of 1,957 (91.8%) sampled middle school students completing usable questionnaires. The overall response rate was 72.8 percent.

Sufficient responses for weighting the data have been obtained each year the YRBS was conducted in Missouri, except in 2011. In 2017, 28 of 39 (71.8%) sampled high schools and 1,864 of 2,199 (84.8%) sampled high school students completed usable questionnaires. The overall response rate was 60 percent.

Strategies for Reducing Tobacco Use among Missouri Youth

Results from the 2017 Missouri Youth Tobacco Survey and Youth Risk Behavior Survey showed continued progress in reducing cigarette smoking that was first reported in "Missouri Youth Tobacco Survey 2003-2009." To continue the progress, the following evidence-based strategies should be fully implemented.

Promote quitting by adults and youth

These survey results show significant differences between youth that have never tried smoking cigarettes and those that are current smokers with regard to influences to smoke. One such influence is living with someone that smokes. In 2015, 81.2 percent of middle school smokers lived with someone that smoked compared to 38.3 percent of students who had never tried smoking cigarettes. Among high school smokers in 2017, 60.5 percent lived with someone that smoked compared to 30.1 percent of students who had never tried smoking cigarettes. Missouri's adult smoking prevalence in 2016 was 22.1 percent.[3] To continue reducing smoking among young people, efforts to promote quitting among adult smokers should continue, such as through the cessation assistance provided by the Missouri Tobacco Quitline (1-800-QUIT- NOW) or www.quitnow.net/Missouri. Although the Missouri Tobacco Quitline does not currently offer services to individuals under 18 years of age, tobacco cessation services should be promoted and provided to youth tobacco users. The Adolescent Cessation in Every School (ACES) is a toolkit for schools interested in providing evidence-based tobacco cessation services to adolescents in a school setting and can be found at http://www.cessationineveryschool.com. Smokefree Teen **(**https://teen.smokefree.gov) offers free tools and tips that can increase teen's chances of quitting successfully. There is also a free smartphone app for teens who want to quit smoking called quitSTART available at https://smokefree.gov/apps-quitstart. The app takes the information smokers provide about their smoking history and gives them tailored tips, inspiration, and challenges to help them become smoke-free and live a healthier life.

Increase the price of tobacco products

Increasing the price of tobacco products is one of the most effective methods of decreasing use among both adults and youth.[4] Missouri's state tax of 17 cents on a package of cigarettes is the lowest of all states. The state has not increased its tax rate for over 10 years.[5] Increasing the cost would make cigarettes less affordable for youth as well as adults.

Create tobacco free environments

Creating smokefree environments not only reduces exposure to secondhand smoke, but has also been shown to contribute to less smoking initiation by youth due to less modeling of the behavior by adults. An 11-year longitudinal study found that 100 percent smokefree workplace laws were associated with significantly lower odds of initiating smoking among adolescents and young adults.[6] Efforts to increase the number of smokefree workplaces in Missouri have resulted in 42 municipalities enacting smokefree ordinances covering one or more of these: public places,

workplaces, restaurants, and bars. Forty of the 42 are comprehensive covering public places, workplaces, restaurants and bars.[7] The 2017 YRBS revealed that among high school students who worked in the past seven days, 27.1 percent were exposed to secondhand tobacco smoke while at work. Efforts to create smokefree workplaces should increase, and involve youth in advocating for tobacco free environments.

Decrease social acceptability of tobacco

The percentage of middle and high school students who saw or heard anti-smoking ads in the past 30 days had not significantly changed from 2007-2017. In 2017, 69.4 percent of middle school students and 77.8 percent of high school students saw or heard anti-smoking ads in the past 30 days. Mass-reach health communication interventions, particularly through television, have been shown to reduce tobacco use initiation among youth.[8] Efforts should be made to secure funding to support strong anti-tobacco mass communication interventions that counter tobacco product promotions. Additionally, mass communication interventions should be expanded to include other media platforms such as digital and internet media to reach more young people.

References

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