

Anchorage Youth Risk Behavioral Survey Results:

2003-2013 Trends and Correlation Analysis of Selected Risk Behaviors,
Bullying, Mental Health Conditions, and Protective Factors

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EXECUTIVE SUMMARY

The aims of this study are to: (1) to assess the trend of selected risk behaviors (alcohol, marijuana use, drug use, school absenteeism), risk conditions (experience of bullying, poor mental health condition, and suicide ideation and attempt), and protective factors (family support and engagement, supportive adult relationships, meaningful opportunities, and community support and environment) among Anchorage high school students from 2003 to 2013; (2) to identify the relationship of the protective factors with the selected risk behaviors and risk conditions; and (3) to examine the strength of association between these factors and conditions. This study was requested by Anchorage Youth Development Coalition (AYDC), in partnership with United Way of Anchorage.

For this report, the 2003 to 2013 Youth Risk Behavioral Survey (YRBS) Anchorage dataset was analyzed. This dataset was obtained by permission from Alaska Department of Health and Human Services. The Anchorage YRBS data was specifically obtained from Anchorage School District's traditional high schools. Key findings of this study are as follows:

- Rates of alcohol use have significantly decreased from 2003 to 2013. Specifically, rates of...
 - Ever use of alcohol has decreased from 75% in 2003 to 61% in 2013.
 - Alcohol use prior to age 13 has decreased from 24% in 2003 to 16% in 2013.
 - Current alcohol use has decreased from 39% in 2003 to 24% in 2013.
 - Binge drinking has decreased from 26% in 2003 to 13% in 2013.
- Rates of ever use of marijuana, marijuana use prior to age 13, and current marijuana use are all on a downward trend, however, the decrease has not been statistically significant.
- How youth perceive alcohol and marijuana is significantly associated with actual use of these substances. Rates of current alcohol use and binge drinking decreases with increasing negative perceptions of alcohol. Likewise, rates of current marijuana use decreases with increasing negative perceptions of marijuana.
- Ever use of prescription drugs without prescription from a health care provider has significantly decreased from 22% in 2009 to 15% in 2013. However, rate of current use of prescription drugs without prescription from a health care provider has not significantly changed since 2011; it remains at around 8%.
- Rates of ever use of other drugs, including cocaine, solvents, heroin, methamphetamines, or ecstasy has been on a downward trend since 2003, but the decrease has not been statistically significant.
- Rates of absenteeism among students have not significantly changed since 2011. From 2011 to 2013, the proportion of students reporting missing class or school without permission is around 27%.
- Rates of being bullied in school (YRBS 2009 to 2013) and being bullied electronically (YRBS 2011 to 2013) the past 12 months have remained generally unchanged at around 20% and 15%, respectively.

- Youth reporting feeling sadness and hopeless have remained around 26% since 2003.
- There have been no significant changes in rates of suicide ideation and attempt since 2003. The proportion of students reporting having seriously considered suicide is around 16%, while the proportion of students who planned an attempt to commit suicide is around 14%. About 9% of students have reported attempting suicide, and less than 5% have attempted suicide that led to injury, poison, or overdose.
- The proportion of students who report feeling alone has significantly decreased from 66% in 2003 to 57% in 2013. The rates of several other protective factors have not significantly changed in the past 10 years. However, there is a decreasing trend in the proportion of students reporting spending at least an hour each week doing volunteer work (from about 66% in 2003 to 49% in 2013).
- Rates of the risk behaviors, bullying experience, feeling of sadness and hopelessness, and suicide ideation and attempt significantly decrease when youth have more than three of the eight protective factors assessed. On average, Anchorage youth report having four to five of the eight protective factors.
- For every one unit increase in the number of protective factors, youth are 15% less likely to currently drink alcohol; 16% less likely to binge drink; 20% less likely to currently smoke marijuana; 16% less likely to miss class without permission; 9% less likely to be bullied in school; 12% less likely to be bullied electronically; 18% less likely to feel sad or hopeless; 24% less likely to seriously consider suicide; and 22% less likely to plan an attempt to commit suicide.
- Family relationship and school environment are the strongest protective factors that decrease the likelihood of alcohol, drug use, absenteeism, while community, adult supportive relationships, and school environment are the strongest protective factors that decrease the likelihood of bullying experience, feeling of sadness and hopelessness, and suicide ideation and attempt.

The study has four key recommendations. First, it is important to make students constantly aware about the harmful consequences of alcohol and drugs. Second, it is important to find ways to support and encourage parents to keep talking to their kids every day. Third is to continue to support teachers in providing caring and encouraging environments for their students. Finally, the community, as a whole, plays an important part in making a positive change in the life of a youth. For example, community members should consider mentoring youth. Additionally, it is beneficial to find ways to create a community environment where youth know they are not alone and that they are valued and cared about.

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INTRODUCTION

The Youth Risk Behavior Survey (YRBS) is a nationwide survey established by the Centers for Disease Control and Prevention (CDC) and managed by the state health departments. YRBS monitors the prevalence of behaviors that most influence the health of youth from grades 9 to 12, such as the use of alcohol, tobacco, and/or drugs; dietary behaviors; physical activity practices; sexual behaviors; and behaviors that contribute to unintentional injuries and violence. The YRBS also monitors behaviors and protective factors that contribute to youth resiliency like engagement in meaningful activities; presence of supportive adults; feeling valued in the community; and talking with parents about school.

The YRBS was established in 1990, but it was not until 1995 when Alaska first participated. For more information on the history of YRBS implementation in Alaska, please visit the following: http://www.hss.state.ak.us/press/2007/YRBS_2007_fact_sheet.pdf. The YRBS is conducted every other year, and its methods and criteria ensure that its results are representative of the population in the national, state, and city/town level in the survey year it was conducted. At the completion of each YRBS survey year, the Section of Chronic Disease Prevention and Health Promotion of the Alaska Department of Health and Social Services (AK DHSS) provides a report of the most current YRBS results.

In 2012, two reports were published about the health risk behaviors and protective factors among high school youth in Anchorage based on the analysis of the 2007 to 2011 Youth Risk Behavioral Survey (YRBS) (Garcia & Sledge, 2012; Garcia, 2012). Two years later, the Alaska Department of Health and Human Services (AK DHHS) released a dataset that combines all the YRBS data available in the State from as early as 2003 to the most recent year YRBS was conducted, in 2013. The availability of this merged dataset allows for the investigation of the ten-year trend for several youth risk behaviors and protective factors. In addition to tracking the trends, having access to the ten-year merged YRBS dataset provide a robust, representative sample to conduct correlational analysis that can help identify specific behaviors and conditions that may either be hampering or helping its youth lead healthy and successful lives.

The Anchorage Youth Development Coalition (AYDC), in partnership with United Way of Anchorage, requested an analysis of the current YRBS dataset to update the results of the 2012 reports. In updating the 2012 reports, some variables analyzed previously were eliminated (i.e., variables related to violence) and others were added (i.e., variables related to bullying, mental health, and suicide). Additionally, a few protective factor variables were revised—for example, rather than assessing the proportion of youth volunteering three or more hours a week, this current report examines youth volunteer activity at one or more hours a week. Likewise, this report examines involvement in after school activities one or more days per week (as opposed to two or more days per week), and the protective factor of having one or more supportive adults besides their parents in their lives (as opposed to three or more supportive adults besides their parents in their lives). The main reason for reducing the minimal standards in these three protective factors is to set a more realistic expectation for today's youth.

This study has three aims: (1) to assess the trend of selected risk behaviors, risk conditions, and protective factors from 2003 to 2013; (2) to identify the relationship of the protective factors with the selected risk behaviors and risk conditions; and (3) to examine the strength of association between these factors and conditions. Findings from this study can help guide youth-serving organizations and stakeholders to identify opportunities for community and schools to continue to work together to support and guide youth to a successful future.

METHODS

YRBS Dataset

YRBS is conducted nationwide. It uses a two-stage cluster sample design to produce a representative sample of 9th to 12th grade students in each of the state. A weighing factor is applied to each of the students participating in the survey so that the final count matches the proportions of students in each grade with the population projections for each survey year. To ensure representativeness of the YRBS results, states must have a minimum response rate of 60%. For more details on the YRBS methods, please refer to CDC's publication in *MMWR* (CDC, 2004) and the state's fact sheet on YRBS at the following address:
http://www.hss.state.ak.us/press/2007/YRBS_2007_fact_sheet.pdf.

The Anchorage School District (ASD) has participated in YRBS in 1995, 2003, 2005, 2007, 2009, 2011 and 2013. There are three types of school in ASD that participated in YRBS: traditional, alternative, and McLaughlin School. This report focuses solely on ASD traditional schools and for years 2003 to 2013. The merged 2003-2013 YRBS dataset was obtained with AK DHSS approval on August 2014. The dataset received have been de-identified and cleaned for errors and inconsistencies. For more information on the Alaska-specific YRBS, such as methodology and statewide results, please visit the following address:
<http://www.hss.state.ak.us/dph/chronic/school/YRBSresults.htm>. The University of Alaska Anchorage Institutional Review Board has approved this research study on November 2014.

Variables of Interest

The number of questions asked in YRBS varies each year. For example, there were 99 questions in 2005, 108 questions in 2007, 99 questions in 2009, and 106 questions in 2011. Many of the questions asked in the YRBS remain consistent through the years, but there are some changes due to relevance of the issue in time or to improve the validity of the previous questions. Additionally, individual states can submit questions of their own relevant to the needs of their community. With recodes and transformations in the database, the 100-plus questions in YRBS can range from around 300 to 600 variables, depending on the survey year.

For the trends analysis, a total of 36 variables related to alcohol use, drug use, perceptions on alcohol and drugs, bullying, suicide and mental health, school and community engagement and support, and family support were examined. As mentioned previously, some of the variables assessed in the 2012 reports were either eliminated or revised based on the request of AYDC and United Way of Anchorage. The list of the 36 variables assessed in this report and any important notes about changes (if any) can be found on Table 1.

Table 1. List of variables assessed

ALCOHOL USE
Students who had at least one drink of alcohol on at least one day during their life
Students who had their first drink of alcohol other than a few sip before age 13
Students who had at least one drink of alcohol in the past 30 days (Current Alcohol Use)
Students who had five or more drinks of alcohol in a row within a couple of hours in at least one of the past 30 days
ALCOHOL ACCESS
Students who usually got the alcohol they drank by buying it during the past 30 days
Students who usually got the alcohol they drank by having someone buy it for them during the past 30 days
Students who usually got the alcohol they drank by having someone giving it to them during the past 30 days
ALCOHOL PERCEPTION
Students who think drinking one or two alcoholic beverages nearly every day has a moderate or great risk of harm
Students who think there is little or no chance of being seen as cool if they drink alcohol regularly
Students whose parents consider it very wrong for them to have one or two alcoholic drinks per day
MARIJUANA USE
Students who had used marijuana one or more times during their life
Students who had tried marijuana for the first time before age 13 years
Students who had used marijuana one or more times during the past 30 days
MARIJUANA PERCEPTION
Students who think people have moderate risk or great risk of harming themselves if they smoke marijuana occasionally (2007 YRBS only)
Students who think people have moderate risk or great risk of harming themselves if they smoke marijuana regularly (2009-2011 YRBS only)
Students who think people have moderate risk or great risk of harming themselves if they smoke marijuana once or twice a week (2013 YRBS only)
Students who think there is little chance or no chance of being seen as cool if they smoke marijuana
Students whose parents consider very wrong for them to smoke marijuana
OTHER DRUGS
Students who have ever taken a prescription drug without a prescription from a doctor during their life
Students who took a prescription drug without a prescription from a doctor one or more times during the past 30 days
Students who have ever used cocaine, solvents, heroin, methamphetamines, or ecstasy
BULLYING EXPERIENCE
Students who had been bullied on school property during the past 12 months
Students who had been bullied electronically during the past 12 months

Table 1. List of variables assessed, continue

MENTAL HEALTH AND SUICIDE
Students who felt so sad or hopeless almost every day or two weeks or more in a row that they stopped doing their usual activities during the past 12 months
Students who had seriously considered attempting suicide during the past 12 months
Students who made a plan about how they would attempt suicide during the past 12 months
Students who actually attempted suicide one or more times during the past 12 months
Students who made a suicide attempt during the past 12 months that resulted in an injury, poisoning, or overdose that had to be treated by a doctor or nurse
SCHOOL ENGAGEMENT
Students who missed classes or school without permission during the past 30 days
PROTECTIVE FACTORS
Students who had at least one parent who talked with them about what they were doing in school about every day
Students who would feel comfortable seeking help from at least one adult besides their parents if they had an important question affecting their lives
Students who spend one or more hours during an average week helping people without getting paid, or volunteering at school or in the community
Students who take part in organized after school, evening, or weekend activities one or more days during an average week
Students who agree or strongly agree that in their community they feel like they matter to people
Students who disagree or strongly disagree that they feel alone in their life
Students who agree or strongly agree that their teachers really care about them and give them a lot of encouragement
Students who agree or strongly agree that their school has clear rules and consequences for behavior

For the correlational analysis, a total of 19 variables were examined. Of the 19 variables, eight are protective factors; three are risk behaviors; three are mental health/suicide-related items; two are about bullying; one is about school engagement; and two are composite variables relating to perceptions about alcohol and marijuana use.

The eight protective factors are as follows, categorized into five external developmental youth assets:

Family Support & Engagement

- Talking to parents about school about every day

Supportive Adult Relationships

- Having at least one adult besides their parents they are comfortable seeking help from

Meaningful Opportunities

- Spending at least an hour a week volunteering or helping at school or in the community
- Being involved in organized after school activities at least one day per week

Community Support and Environment

- Feeling like they matter to people in their community
- Feeling like they are not alone

School Environment

- Having teachers really care about them and give them a lot of encouragement
- Having school that has clear rules and consequences for behavior

All variables above were treated as dichotomous variables, having “yes” or “no” as their categories. Then, an assumption was made that each of the protective factors is additive and has a value of 1 for a “yes” response. All “yes” responses were added together, giving a range of score from 0 to 8, with 0 having no protective factor and 8 having all 8 protective factors.

The three risk behaviors assessed include the following:

- Current alcohol use (drinking alcohol in the past 30 days)
- Binge drinking (drinking 5 or more servings of alcohol in one sitting)
- Current marijuana use (smoking marijuana in the past 30 days)

The three mental health and suicide items assessed are as follows:

- Feel sad or hopeless almost every day
- Seriously considered suicide
- Plan an attempt to commit suicide

The two bullying items assessed include the following:

- Ever been bullied on school property during the past 12 months
- Ever been bullied electronically during the past 12 months

The one school engagement factor is as follows:

- Missing class without permission in the past 30 days

A composite variable relating to perception of alcohol use and a composite variable relating to perception of marijuana use were developed. Each composite variable came from the combination of three variables, with each variable category scored as either 0 or 1. Combined together, the alcohol perception score and marijuana perception score ranged from 0 to 3 points each, with 0 points indicating a positive perception of alcohol or marijuana use and 3 points indicating a negative perception of alcohol or marijuana use. The three alcohol perception variables and three marijuana perception variables with their corresponding scores are shown in Table 2 below. Note that not all of the alcohol and marijuana perception variables were available in all of the years that the YRBS was conducted. Questions related to self-perception of harm of drinking nearly everyday, as well as perception of being cool when drinking or using marijuana, were asked in years 2007 to 2013. Questions related to how wrong parents feel about drinking and use of marijuana were asked in years 2009 to 2013. Finally, questions related to self-perception of harm of smoking marijuana regularly were only asked in

2009 and 2011.

Table 2. Alcohol perception and marijuana perception variables

Variables	Points
<u>Alcohol Perception Variables:</u>	
Students think there is no or very little chance of drinking alcohol regularly as being seen as cool	0=No, 1=Yes
Students think their parents consider it very wrong for them to drink alcohol regularly	0=No, 1=Yes
Students who think one or two drink of alcohol nearly every day has moderate to great risk	0=No, 1=Yes
Total Possible Score	0-3 points
<u>Marijuana Perception Variables:</u>	
Students think there is no or very little chance of smoking marijuana as being seen as cool	0=No, 1=Yes
Students think their parents consider it very wrong for them to smoke marijuana	0=No, 1=Yes
Students who think smoking marijuana regularly has moderate to great risk	0=No, 1=Yes
Total Possible Score	0-3 points
Score ranges from 0 to 3, with 0 having positive perception of alcohol or marijuana use and 3 having negative perception of alcohol or marijuana use.	

Analysis

Trends analysis involved running frequencies and cross-tabulations of all variables of interest, using the Complex Sampling Module of SPSS Version 22. This Module helps to account for the population estimate errors brought about by YRBS's complex sampling design.

For the correlational analysis, frequencies and proportions of all of the variables of interest were determined. Then, the mean number of protective factors and mean score of alcohol and marijuana perceptions were assessed for each YRBS year, grade level, and sex. Cross-tabulations were also run between the number of protective factors and each of the risk behaviors, bullying, mental health/suicide items, and school engagement factor. Additionally, cross-tabulations between perceptions of risk behaviors and actual behaviors were examined. To determine whether the number of protective factors has an independent association with each of the risk behaviors, bullying, mental health/suicide items, and school engagement factor, controlling for the students' sex and grade level, multiple logistic regressions were run. Finally, to determine the strength of association of each protective factor, relative risk was calculated between each of the protective factors and each of the risk behaviors, bullying, mental health/suicide items, and school engagement factor.

RESULTS

Anchorage YRBS Sample Size and Population Represented

The combined total sample from 2003 to 2013 Anchorage YRBS dataset was 6,243. The combined total sample represents approximately 82,313 population of Anchorage high school students. The specific sample and population size for each given YRBS year can be found in Table 3 below.

Table 3. 2003 to 2013 YRBS Total Sample and Population Representation

YRBS Year	Unweighted Count (Sample Size)	Weighted Count (Population Size)
2003	559	13,155
2005	871	13,193
2007	1,252	14,178
2009	1,157	14,788
2011	1,298	13,706
2013	1,106	13,293
Total	6,243	82,313

Characteristics of Anchorage Youth Who Participated in YRBS

From 2003 to 2013, approximately 49.5% of Anchorage high school students who took the YRBS were boys and 48.7% were girls. The proportion of 9th, 10th, 11th, and 12th graders who took the survey was fairly evenly distributed through the years. Details of the characteristics of Anchorage youth who participated in YRBS can be found in Table 4 below.

Table 4. Characteristics of Anchorage Youth Who Participated in YRBS

Characteristics	2003 Percent	2005 Percent	2007 Percent	2009 Percent	2011 Percent	2013 Percent	Weighted % Total
Sex							
Boys	46.5%	45.0%	47.9%	48.4%	47.2%	46.8%	49.5%
Girls	48.6%	49.9%	48.4%	47.9%	48.8%	49.9%	48.7%
Grade Level							
9 th	28.5%	28.6%	26.4%	25.2%	25.1%	25.8%	26.6%
10 th	26.1%	26.5%	26.0%	24.8%	25.5%	25.2%	25.7%
11 th	23.8%	25.0%	24.9%	25.0%	24.3%	23.7%	24.5%
12 th	21.6%	19.9%	22.6%	24.8%	25.0%	25.3%	23.2%

Alcohol Use

YRBS asked several questions related to alcohol consumption, and they can be organized into three categories. The first category is alcohol consumption. For this category, both lifetime and current alcohol consumption was assessed, as well as age of alcohol consumption initiation. The second category is alcohol access. For this category, how youth are obtaining the alcohol they consume was examined. Finally, the third category is alcohol perceptions. Here, youth's perception on alcohol risk, whether they think drinking alcohol is cool, and whether their parents think of alcohol is wrong were examined.

Alcohol Consumption. The proportion of Anchorage youth who had at least one drink of alcohol at least one day during their life has significantly decreased from 75.8% in 2003 to 61.1% in 2013 (see Table 5 and Figure 1 for details). Likewise, rates of alcohol consumption before age 13 have significantly decreased—from 23.8% in 2003 to 15.1% in 2013 (see Table 6 and Figure 2 for details). A significant decrease is also observed for current alcohol use (drinking alcohol in the past 30 days) in the past decade. In 2003, 38.8% of Anchorage youth reported drinking alcohol in the past 30 days; and by 2013, this rate decreased to 24.2% (see Table 7 and Figure 3 for details). Rates of binge drinking (drinking five or more drinks of alcohol in a row within a couple of hours in the past 30 days) have significantly decreased as well. In 2003, the binge drinking rate was at 25.9%; and in 2013, the binge drinking rate was at 12.8% (see Table 8 and Figure 4 for details). Alcohol consumption rates (both ever and current alcohol use and binge drinking) for boys and girls are about the same, while alcohol consumption rates generally increases with increasing grade level.

Table 5. Percentage of students who had at least one drink of alcohol on at least one day during their life [Ever use of alcohol]

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	75.1%	75.8%	75.0%	67.2%	67.5%	59.0%
95% Confidence interval	(70.6%--79.1%)	(70.7%--80.2%)	(70.6%--79.0%)	(63.0%--71.2%)	(63.2%--71.5%)	(55.0%--62.9%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	73.8%	72.9%	74.0%	64.4%	67.1%	57.0%
Girls	76.5%	78.6%	76.2%	70.3%	67.9%	61.1%
9th Grade	64.0%	60.7%	68.0%	57.6%	59.8%	47.3%
10th Grade	76.7%	78.4%	77.7%	59.3%	62.6%	57.1%
11th Grade	81.5%	80.9%	81.3%	79.9%	68.9%	62.2%
12th Grade	80.0%	86.2%	73.3%	71.9%	78.7%	70.1%

Figure 1. Graph showing the proportion of students who had at least one drink of alcohol on at least one day during their life each YRBS year

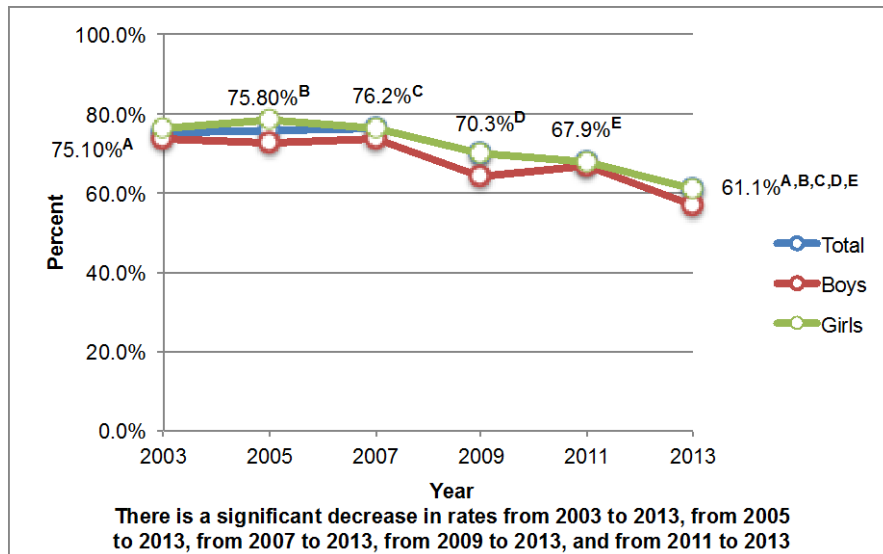


Table 6. Percentage of students who had their first drink of alcohol other than a few sip before age 13

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	23.8%	24.4%	21.0%	20.6%	19.9%	15.1%
95% Confidence interval	(19.5%–28.6%)	(20.8%–28.4%)	(17.4%–25.1%)	(17.7%–23.9%)	(17.2%–22.9%)	(12.8%–17.8%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	26.9%	25.0%	23.2%	19.9%	21.6%	16.1%
Girls	20.3%	23.7%	18.5%	21.4%	18.1%	14.2%
9th Grade	31.6%	24.7%	25.0%	29.9%	20.0%	18.4%
10th Grade	24.9%	23.3%	28.9%	17.8%	20.9%	16.2%
11th Grade	19.4%	28.9%	17.1%	17.9%	21.4%	14.3%
12th Grade	17.4%	19.5%	11.0%	16.8%	17.4%	11.5%

Figure 2. Graph showing the proportion of students who had their first drink of alcohol other than a few sips before age 13 each YRBS year

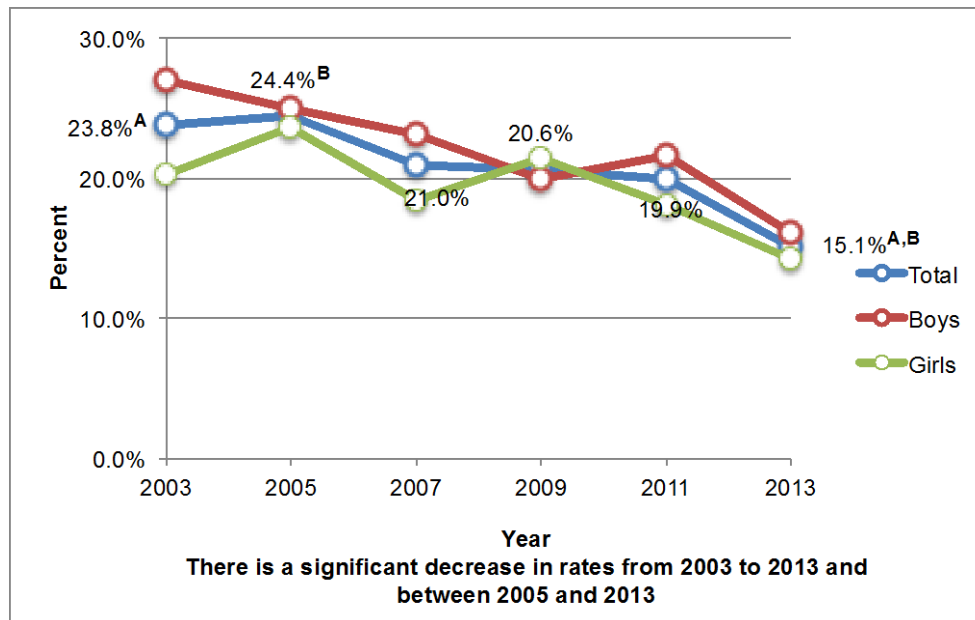


Table 7. Percentage of students who had at least one drink of alcohol in the past 30 days [Current Alcohol Use]

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	38.8%	41.3%	41.3%	35.5%	35.1%	24.2%
95% Confidence Interval	(33.5%--44.4%)	(34.6%--48.4%)	(35.4%--47.4%)	(31.3%--40.0%)	(30.6%--39.9%)	(20.3%--28.6%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	37.8%	38.5%	44.1%	35.2%	33.6%	24.1%
Girls	39.9%	44.1%	38.4%	35.9%	36.6%	24.2%
9th Grade	27.9%	29.4%	33.0%	27.2%	26.4%	12.2%
10th Grade	38.5%	37.6%	44.8%	29.7%	33.2%	23.4%
11th Grade	44.7%	48.9%	41.7%	44.7%	34.0%	24.8%
12th Grade	47.1%	53.9%	45.4%	40.1%	46.8%	35.9%

Figure 3. Graph showing the proportion of students who had at least one drink of alcohol in the past 30 days each YRBS year [Current Alcohol Use]

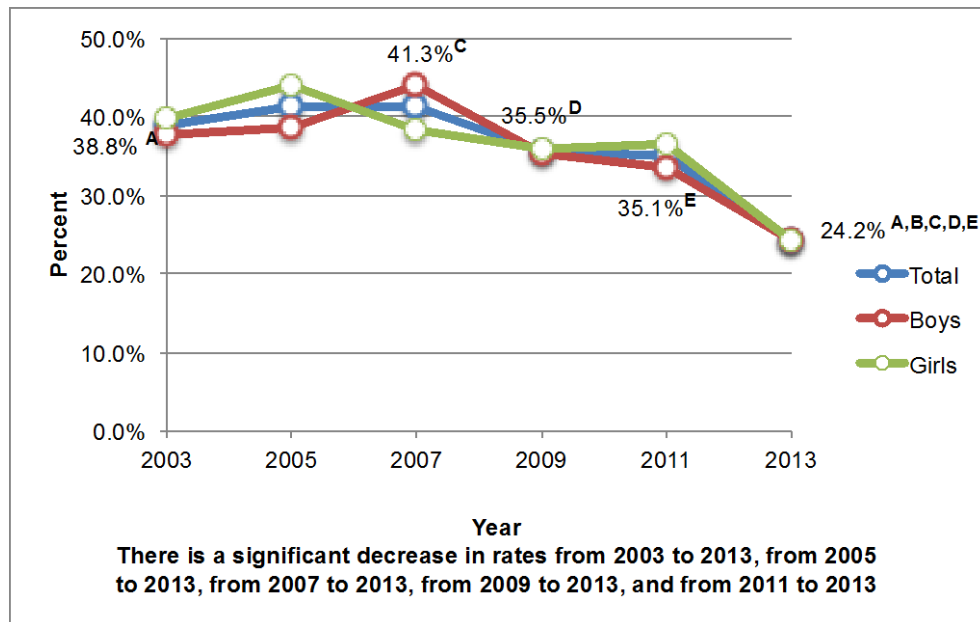
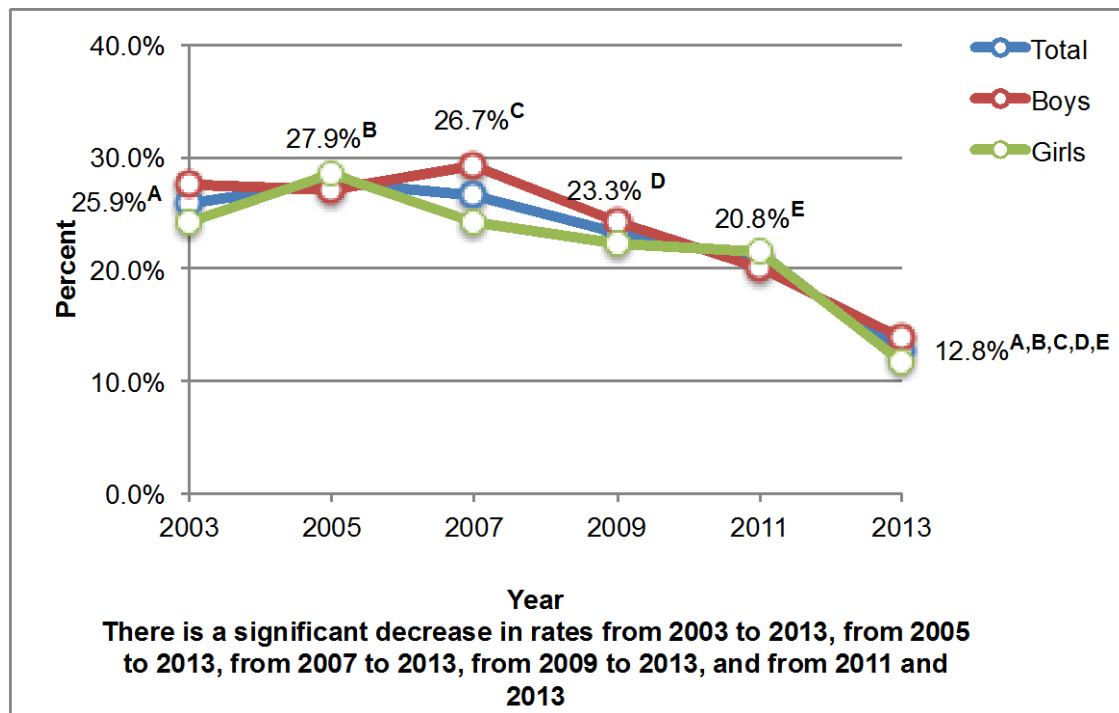


Table 8. Percentage of students who had five or more drinks of alcohol in a row within a couple of hours in at least one of the past 30 days [Binge Drinking]

	ADS: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	25.9%	27.9%	26.7%	23.3%	20.8%	12.8%
95% Confidence Interval	(20.8%–31.8%)	(22.1%–34.5%)	(21.7%–32.3%)	(19.8%–27.2%)	(17.8%–24.2%)	(10.3%–15.8%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	27.6%	27.1%	29.1%	24.1%	20.1%	13.8%
Girls	24.1%	28.6%	24.2%	22.3%	21.6%	11.7%
9th Grade	14.1%	19.0%	16.7%	18.5%	15.0%	5.5%
10th Grade	28.9%	24.0%	28.0%	18.6%	20.1%	12.2%
11th Grade	32.8%	35.8%	29.1%	27.5%	21.0%	13.3%
12th Grade	30.4%	35.9%	33.9%	28.6%	27.2%	20.2%

Figure 4. Graph showing the proportion of students who had five or more drinks of alcohol in a row within a couple of hours in at least one of the past 30 days each YRBS year [Binge Drinking]



Alcohol Access. Among youth who reported current alcohol use, the proportion who usually got the alcohol they drank by buying it (see Table 9 and Figure 5) or by having someone else buy it (see Table 10 and Figure 6) has not significantly changed since 2005. Around 5% reported being able to buy the alcohol they drank, and around 30% reported having someone buy alcohol for them. Most youth who reported current alcohol use obtain the alcohol they drank from someone who gave it to them (see Table 11 and Figure 7). Rates of youth reporting obtaining alcohol from someone who gave it to them significantly increased from 2005 (18.5%) to 2011 (43.6%), but significantly decreased by 2013 (29.7%). Generally, greater proportion of boys than girls reported obtaining alcohol they drank by buying it on their own; but greater proportion of girls than boys reported obtaining alcohol they drank by having someone give it to them.

Table 9. Among students who reported current alcohol use, the percentage who usually got the alcohol they drank by buying it during the past 30 days

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	DNC	5.0%	3.7%	4.8%	2.3%	5.7%
95% Confidence Interval	DNC	(2.5%–9.7%)	(1.8%–7.4%)	(2.8%–8.2%)	(1.1%–4.8%)	(3.1%–10.1%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	DNC	10.6%	5.5%	8.9%	2.7%	7.2%
Girls	DNC	0.4%	1.6%	0.7%	2.0%	4.2%
9th Grade	DNC	5.2%	3.8%	2.9%	3.1%	NR
10th	DNC	3.8%	5.2%	8.8%	NR	2.4%
11th Grade	DNC	5.5%	2.8%	2.7%	2.9%	4.7%
12th Grade	DNC	5.4%	2.8%	5.6%	3.2%	10.4%

Figure 5. Graph showing the proportion of students who currently drink alcohol who usually got the alcohol they drank by buying it during the past 30 days each YRBS year

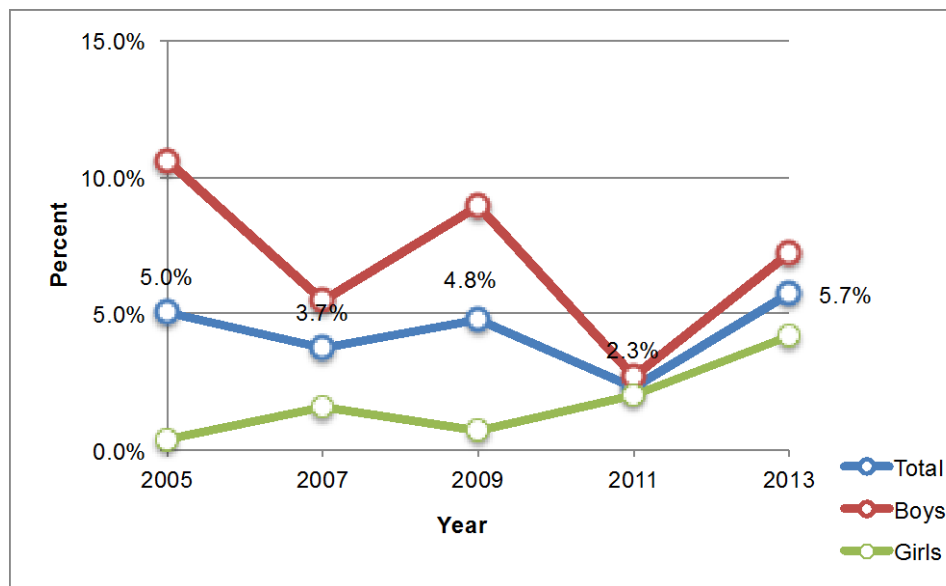


Table 10. Among students who reported current alcohol use, the percentage who usually got the alcohol they drank by having someone buy it for them during the past 30 days

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	DNC	34.6%	35.3%	29.7%	23.9%	24.8%
95% Confidence Interval	DNC	(27.1%–43.0%)	(26.3%–45.4%)	(24.4%–35.5%)	(18.9%–29.8%)	(19.3%–31.4%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	DNC	32.0%	39.3%	28.5%	27.7%	25.6%
Girls	DNC	36.8%	30.6%	30.8%	20.5%	24.1%
9th Grade	DNC	28.5%	19.2%	24.4%	9.0%	25.6%
10th	DNC	30.9%	28.7%	23.7%	19.9%	28.5%
11th Grade	DNC	35.8%	39.6%	32.0%	23.8%	20.8%
12th Grade	DNC	40.9%	50.6%	34.8%	34.9%	24.5%

Figure 6. Graph showing the proportion of students who currently drink alcohol who usually got the alcohol they drank by having someone buy it for them during the past 30 days each YRBS year

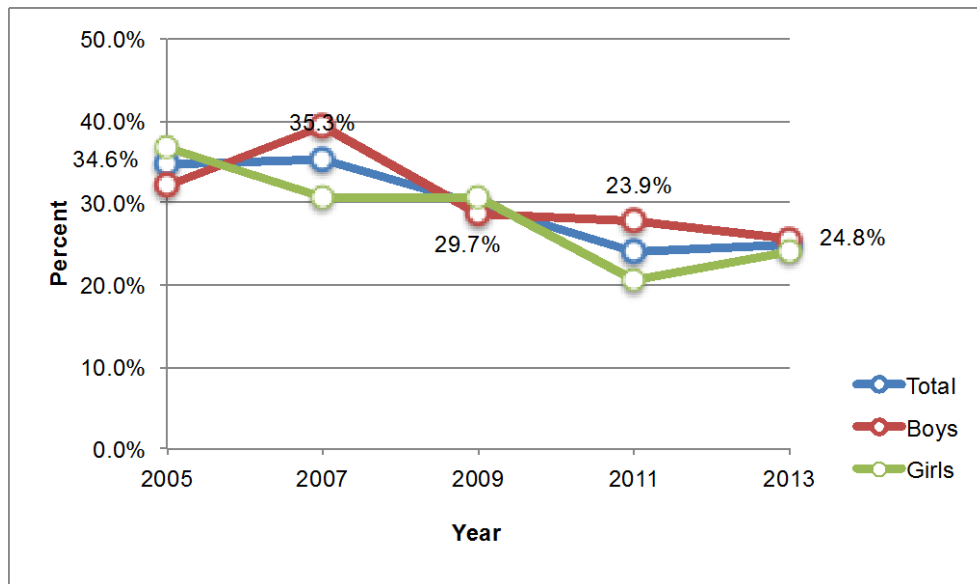
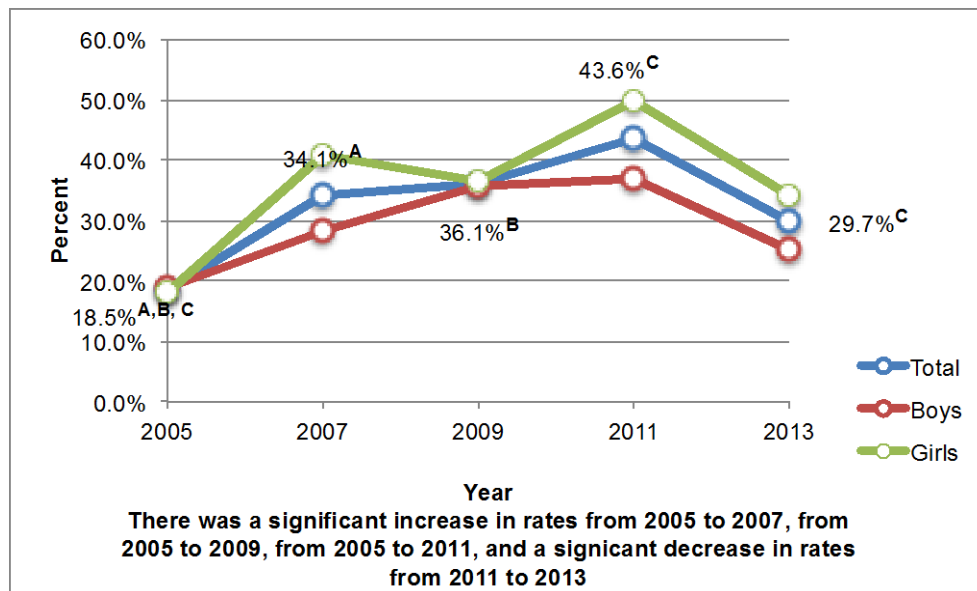


Table 11. Among students who reported current alcohol use, the percentage who usually got the alcohol they drank by having someone giving it to them during the past 30 days

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	DNC	18.5%	34.1%	36.1%	43.6%	29.7%
95% Confidence Interval	DNC	(12.9%–25.7%)	(26.7%–42.4%)	(29.9%–42.9%)	(38.9%–48.5%)	(22.7%–37.8%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	DNC	18.9%	28.4%	35.8%	37.0%	25.1%
Girls	DNC	18.1%	40.8%	36.4%	49.7%	34.1%
9th Grade	DNC	17.6%	28.4%	32.3%	48.1%	17.2%
10th	DNC	21.6%	39.5%	32.2%	47.0%	21.3%
11th Grade	DNC	23.8%	31.9%	37.5%	40.7%	38.7%
12th Grade	DNC	10.2%	35.0%	40.2%	40.8%	33.5%

Figure 7. Graph showing the proportion of students who currently drink alcohol who usually got the alcohol they drank by having someone giving it to them during the past 30 days each YRBS year



Alcohol Perception. The proportion of students who think drinking one or two alcoholic beverages nearly every day has a moderate or great risk of harm has increased from 56.9% to 65.4% but not by statistically significant amounts (see Table 12 and Figure 8). The proportion of students who perceive drinking alcohol regularly has little or no chance of being seen as cool has significantly increased from 2007 (59.2%) to 2013 (73.7%) (see Table 13 and Figure 9). However, rates of students who perceive that their parents consider it very wrong for them to have one or two alcohol drinks per day has significantly decreased from 78.7% in 2009 to 63.5% in 2013 (see Table 14 and Figure 10).

Table 12. Percentage of students who think drinking one or two alcoholic beverages nearly every day has a moderate or great risk of harm

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	DNC	DNC	56.9%	65.2%	65.5%	65.4%
95% Confidence Interval	DNC	DNC	(52.4%--61.3%)	(60.8%--69.%)	(62.2%--68.6%)	(62.2%--68.5%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	DNC	DNC	52.5%	59.4%	57.9%	61.3%
Girls	DNC	DNC	61.9%	71.5%	73.4%	69.6%
9th Grade	DNC	DNC	57.6%	65.9%	63.5%	67.5%
10th Grade	DNC	DNC	59.3%	62.4%	70.7%	64.9%
11th Grade	DNC	DNC	61.4%	66.5%	63.8%	66.2%
12th Grade	DNC	DNC	48.0%	65.9%	63.7%	63.1%

Figure 8. Graph showing the proportion of students who think drinking one or two alcoholic beverages nearly every day has a moderate or great risk of harm each YRBS year

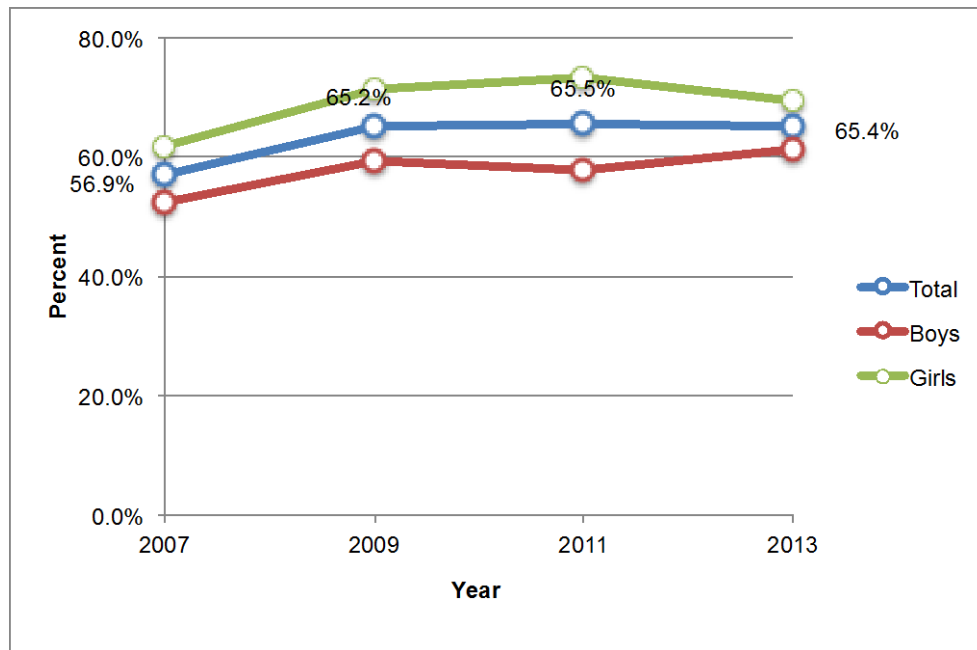


Table 13. Percentage of students who think there is little or no chance of being seen as cool if they drink alcohol regularly

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	DNC	DNC	59.2%	71.5%	66.4%	73.7%
95% Confidence interval	DNC	DNC	(55.1%–63.2%)	(67.2%–75.6%)	(62.7%–69.9%)	(70.1%–76.9%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	DNC	DNC	62.9%	73.1%	69.9%	78.9%
Girls	DNC	DNC	55.1%	69.9%	62.8%	68.4%
9th Grade	DNC	DNC	60.2%	80.8%	70.4%	78.1%
10th Grade	DNC	DNC	57.1%	69.3%	64.0%	71.5%
11th Grade	DNC	DNC	64.8%	66.4%	68.0%	73.5%
12th Grade	DNC	DNC	53.9%	69.6%	63.3%	71.5%

Figure 9. Graph showing the proportion of students who think there is little or no chance of being seen as cool if they drink alcohol regularly each YRBS year

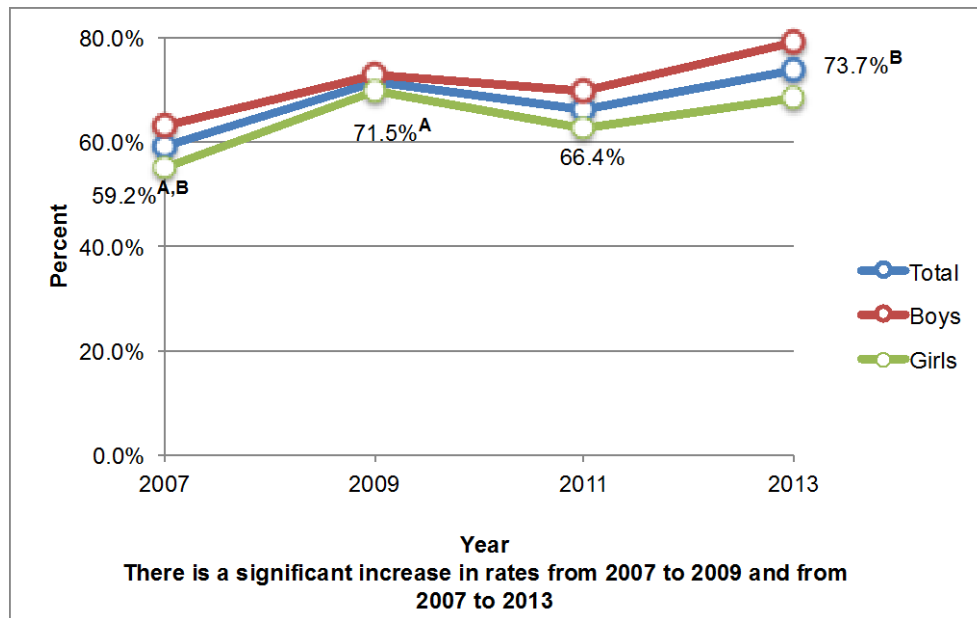
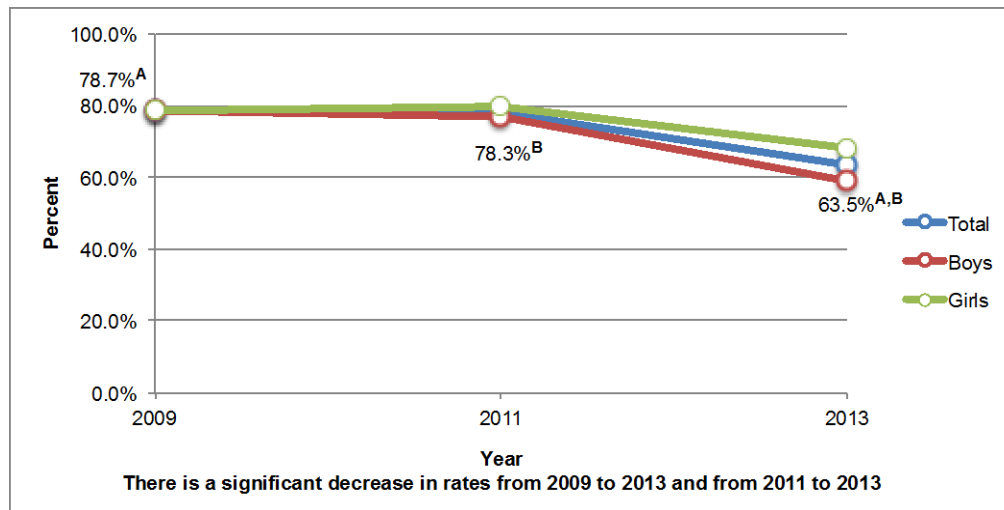


Table 14. Percentage of students whose parents consider it very wrong for them to have one or two alcoholic drinks per day

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	DNC	DNC	DNC	78.7%	78.3%	63.5%
95% Confidence Interval	DNC	DNC	DNC	(75.5%--81.6%)	(75.5%--80.8%)	(59.1%--67.7%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	DNC	DNC	DNC	78.6%	77.1%	58.8%
Girls	DNC	DNC	DNC	78.9%	79.5%	68.2%
9th Grade	DNC	DNC	DNC	78.7%	79.4%	68.8%
10th Grade	DNC	DNC	DNC	81.1%	78.5%	64.4%
11th Grade	DNC	DNC	DNC	76.5%	80.3%	65.1%
12th Grade	DNC	DNC	DNC	78.9%	75.2%	55.7%

Figure 10. Graph showing the proportion of students whose parents consider it very wrong for them to have one or two alcoholic drinks per day each YRBS year



Marijuana Use

YRBS asked several questions related to the use of marijuana, and they can be organized into two categories. The first category is marijuana use. For this category, both lifetime and current marijuana use was assessed, as well as age of first use of marijuana. The second category is perception related to marijuana use. Here, youth's perception of risk of marijuana use, whether they think using marijuana is cool, and whether their parents think using marijuana is wrong were examined.

Marijuana Use. The proportion of youth reporting ever using marijuana in their lifetime has not significantly changed since 2003; rate has remained around 36% (see Table 15 and Figure 11). Likewise, the proportion of youth who first tried marijuana before the age of 13 and the proportion of youth who currently use marijuana have remained virtually unchanged at around 9% for the former (see Table 16 and Figure 12) and around 17% for the latter (see Table 17 and Figure 13). Rates of marijuana use (both ever use and current use) are about the same for boys and girls. However, for each increase in grade level rates of marijuana use (both ever use and current use) increases.

Table 15. Percentage of students who had used marijuana one or more times during their life [Ever Use of Marijuana]

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	40.7%	44.9%	37.4%	40.1%	42.0%	35.6%
95% Confidence interval	(36.4%–45.0%)	(39.3%–50.6%)	(31.7%–43.4%)	(36.2%–44.0%)	(37.1%–47.1%)	(31.4%–40.0%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	46.7%	44.8%	37.9%	41.7%	44.0%	36.1%
Girls	34.4%	45.0%	36.9%	38.3%	40.0%	35.1%
9th Grade	26.4%	31.4%	26.3%	35.9%	30.0%	25.8%
10th Grade	40.7%	49.2%	43.6%	36.4%	41.0%	36.1%
11th Grade	53.0%	50.7%	35.6%	45.4%	46.4%	37.1%
12th Grade	45.8%	51.8%	44.9%	42.4%	50.9%	43.5%

Figure 11. Graph showing the proportion of students who had used marijuana one or more times during their life each YRBS year

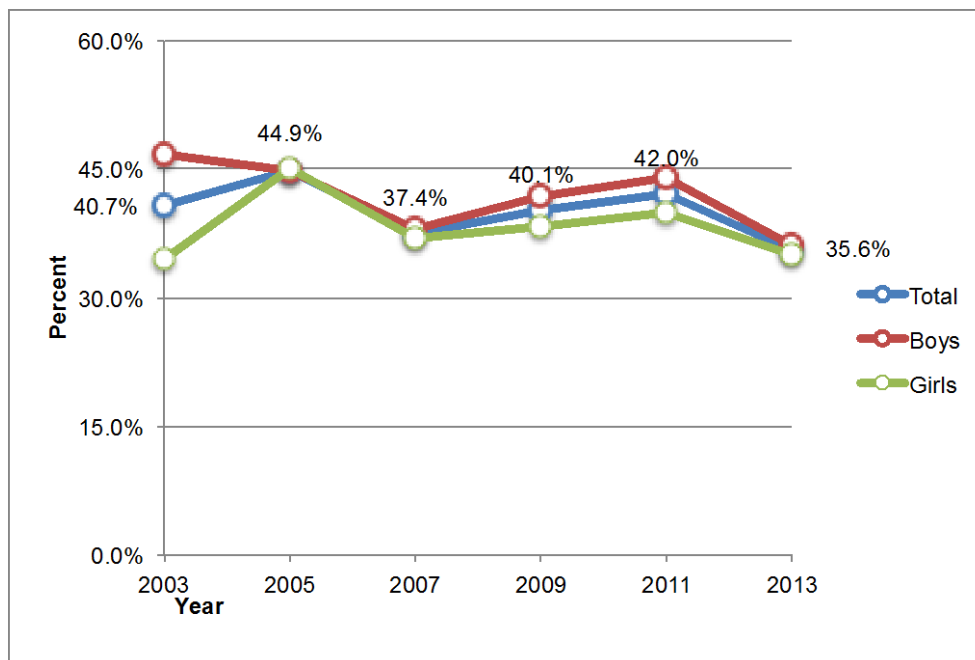


Table 16. Percentage of students who had tried marijuana for the first time before age 13 years

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	10.5%	10.8%	10.9%	10.5%	8.8%	8.4%
95% Confidence interval	(8.3%–13.2%)	(8.2%–14.2%)	(6.8%–17.0%)	(8.2%–13.3%)	(6.8%–11.3%)	(6.5%–10.6%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	13.6%	12.2%	14.7%	10.2%	9.7%	8.6%
Girls	7.3%	9.4%	6.8%	10.8%	7.9%	8.0%
9th Grade	12.2%	11.4%	10.1%	13.4%	8.0%	11.0%
10th Grade	14.2%	11.8%	9.9%	10.8%	13.1%	8.4%
11th Grade	6.3%	11.2%	9.7%	8.4%	8.5%	6.6%
12th Grade	8.5%	8.4%	13.9%	9.1%	5.5%	7.2%

Figure 12. Graph showing the proportion of students who had tried marijuana for the first time before age 13 years each YRBS year

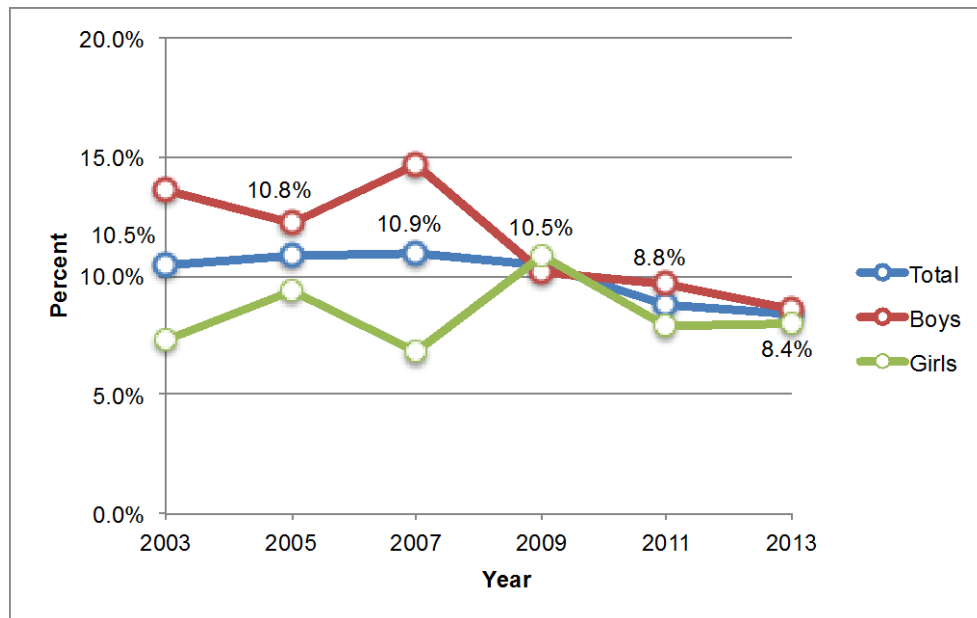
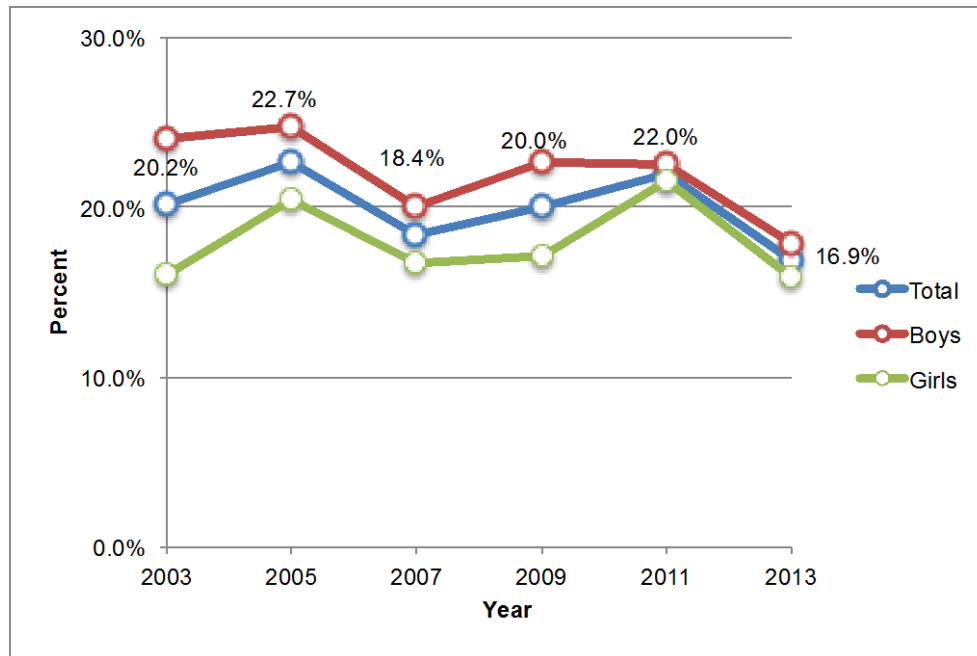


Table 17. Percentage of students who had used marijuana one or more times during the past 30 days [Current Marijuana Use]

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	20.2%	22.7%	18.4%	20.0%	22.0%	16.9%
95% Confidence interval	(16.4%--24.7%)	(17.7%--28.6%)	(13.8%--24.1%)	(17.2%--23.3%)	(18.5%--26.0%)	(14.2%--20.0%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	24.1%	24.8%	20.1%	22.7%	22.6%	17.9%
Girls	16.1%	20.5%	16.7%	17.2%	21.5%	15.9%
9th Grade	15.0%	13.9%	16.4%	15.3%	16.8%	10.9%
10th Grade	20.1%	19.6%	17.0%	17.6%	22.2%	20.4%
11th Grade	26.6%	30.6%	17.8%	26.4%	24.3%	15.0%
12th Grade	20.3%	29.3%	22.7%	20.8%	24.8%	21.4%

Figure 13. Graph showing the proportion of students who had used marijuana one or more times during the past 30 days [Current Marijuana Use]



Perception of Marijuana Use. Perception of harm for using marijuana has been asked in different ways in different years in YRBS. In 2007, YRBS asked whether students think smoking marijuana occasionally poses moderate or great risk of harm; approximately 58.7% had this perception (see Figure 14). In 2009 and 2011, the term “occasionally” was replaced with the term, “regularly”. With this change, rate of perceived harm decreased to around 50% (see Table 18 and Figure 15). In 2013, the term “regularly” was replaced with the term “once or twice a week”. With this change, the rate decreased further to around 37% (see Figure 16). Regardless of how the question of perceived harm was asked, however, greater proportion of girls compared to boys and greater proportion of 9th graders compared to 12th graders perceive marijuana to be harmful to themselves.

Figure 14. Proportion of students who think people have moderate risk or great risk of harming themselves if they smoke marijuana occasionally

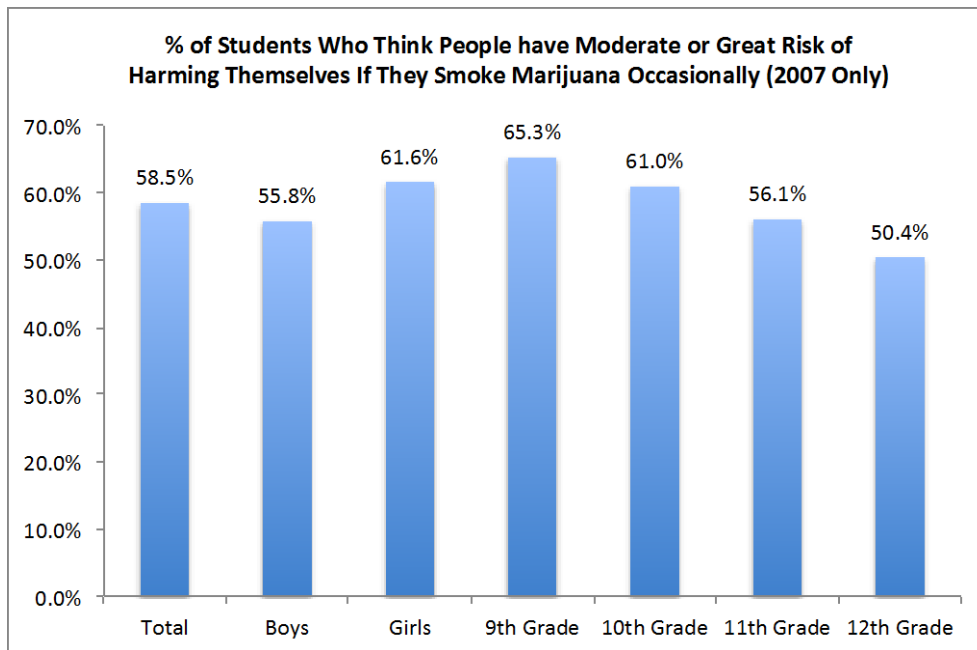


Table 18. Percentage of students who think people have moderate risk or great risk of harming themselves if they smoke marijuana regularly

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	DNC	DNC	DNC	54.0%	50.1%	DNC
95% Confidence Interval	DNC	DNC	DNC	(49.6%–58.3%)	(46.4%–53.9%)	DNC
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	DNC	DNC	DNC	47.3%	41.9%	DNC
Girls	DNC	DNC	DNC	61.2%	58.7%	DNC
9th Grade	DNC	DNC	DNC	59.3%	55.8%	DNC
10th Grade	DNC	DNC	DNC	57.8%	50.2%	DNC
11th Grade	DNC	DNC	DNC	51.5%	48.6%	DNC
12th Grade	DNC	DNC	DNC	47.4%	46.0%	DNC

Figure 15. Graph showing the proportion of students who think people have moderate risk or great risk of harming themselves if they smoke marijuana regularly each YRBS year

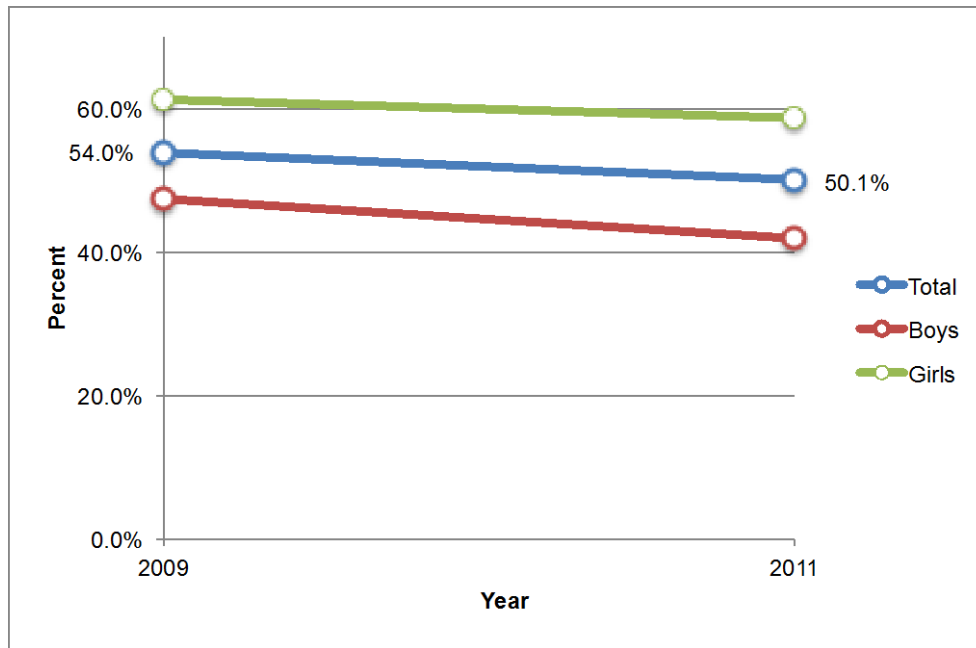
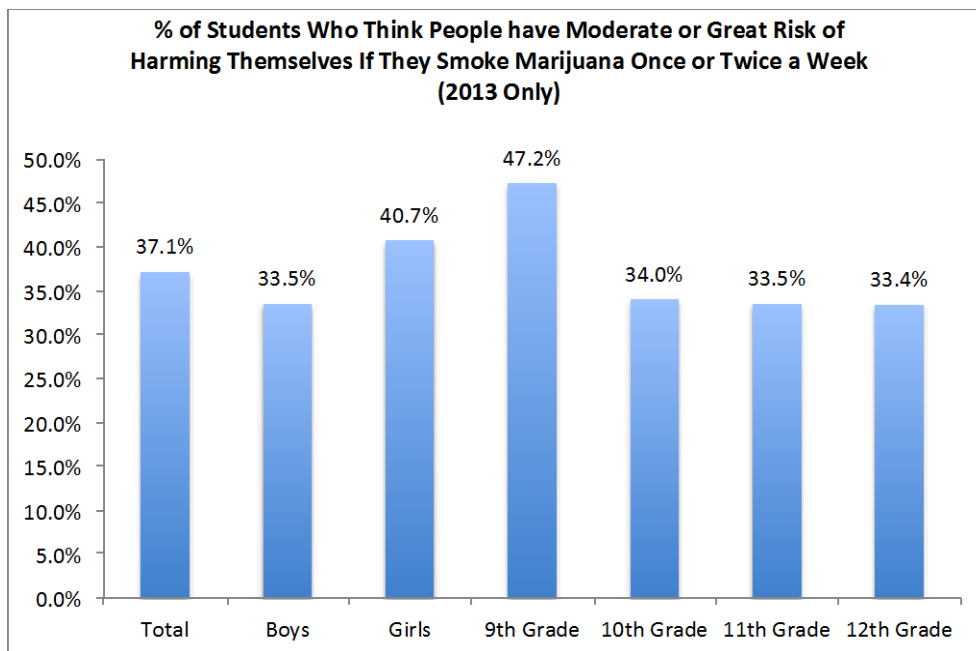


Figure 16. Proportion of students who think people have moderate risk or great risk of harming themselves if they smoke marijuana once or twice a week (2013 Only)



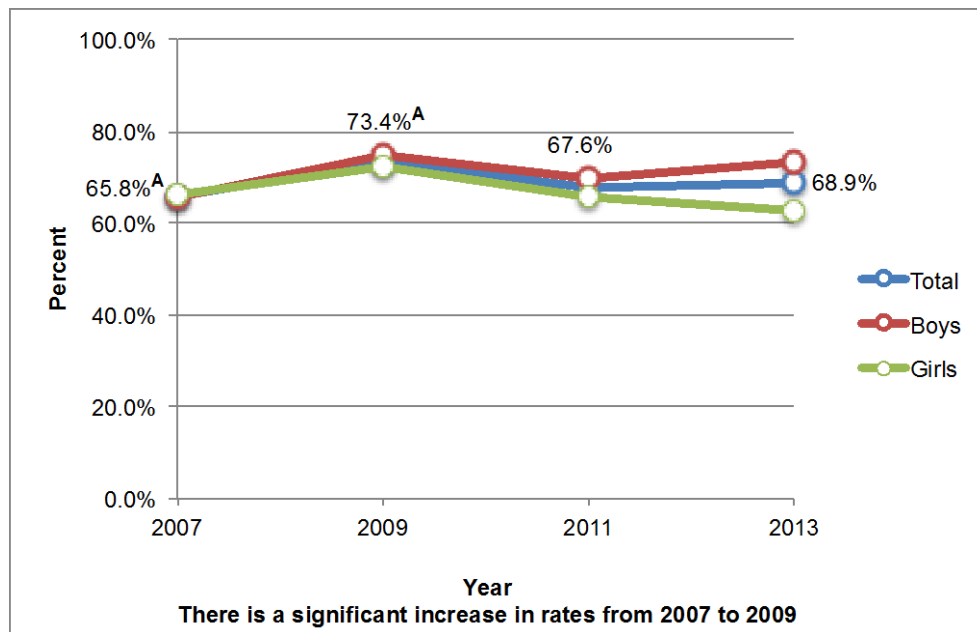
The question of whether smoking marijuana is cool has been asked in YRBS since 2007. The proportion of students who think there is little or no chance of being seen as cool if they smoke

marijuana significantly increased from 65.8% in 2007 to 73.4% in 2009. Since then, there have been no significant changes in this perception. See Table 19 and Figure 17 for details.

Table 19. Percentage of students who think there is little chance or no chance of being seen as cool if they smoke marijuana

	ASD: 2003	ASD: 2005	ASD 2007	ASD 2009	ASD 2011	ASD 2013
Total	DNC	DNC	65.8%	73.4%	67.6%	68.9%
95% Confidence Interval	DNC	DNC	(62.1%--69.3%)	(69.4%--77.1%)	(64.6%--70.5%)	(64.4%--71.4%)
By Categories	ASD: 2003	ASD: 2005	ASD 2007	ASD 2009	ASD 2011	ASD 2013
Boys	DNC	DNC	65.4%	74.5%	69.6%	73.3%
Girls	DNC	DNC	66.3%	72.2%	65.5%	62.7%
9th Grade	DNC	DNC	69.8%	77.7%	68.3%	72.7%
10th Grade	DNC	DNC	60.6%	74.4%	65.6%	64.4%
11th Grade	DNC	DNC	67.7%	68.8%	70.7%	67.8%
12th Grade	DNC	DNC	65.0%	72.7%	65.8%	66.9%

Figure 17. Graph showing the proportion of students who think there is little chance or no chance of being seen as cool if they smoke marijuana each YRBS year

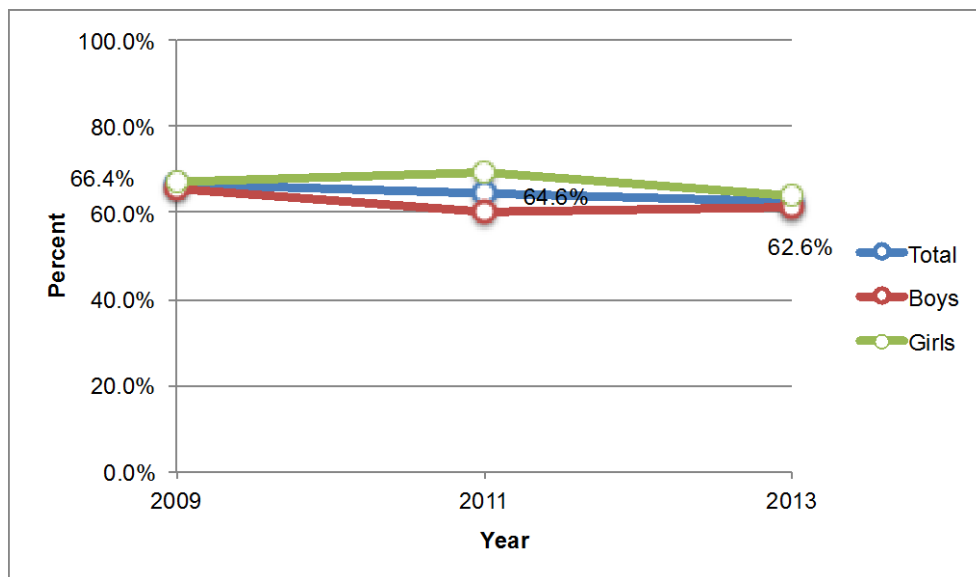


The proportion of students who perceive that their parents consider it very wrong for them to smoke marijuana has not significantly changed since 2009. The rate from 2009 to 2013 has remained around 65% (see Table 20 and Figure 18).

Table 20. Percentage of students whose parents consider it very wrong for them to smoke marijuana

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	DNC	DNC	DNC	66.4%	64.6%	62.6%
95% Confidence interval	DNC	DNC	DNC	(62.1%--70.4%)	(60.9%--68.2%)	(59.4%--65.7%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	DNC	DNC	DNC	65.6%	60.2%	61.4%
Girls	DNC	DNC	DNC	67.2%	69.1%	63.8%
9th Grade	DNC	DNC	DNC	71.6%	68.3%	68.9%
10th	DNC	DNC	DNC	68.4%	64.9%	62.7%
11th Grade	DNC	DNC	DNC	68.1%	69.5%	62.1%
12th Grade	DNC	DNC	DNC	57.5%	56.1%	56.6%

Figure 18. Graph showing the proportion of students whose parents consider it very wrong for them to smoke marijuana each YRBS year



Relationship between Perceptions of Alcohol and Marijuana and Actual Use

A composite alcohol perception score and a composite marijuana perception score are not all available from 2003 to 2013 because, as previously discussed, some of the questions categorized within these aforementioned composite variables were not asked in specific YRBS years. Specifically, alcohol composite perception score is only available for years 2009 to 2013 because the question related to parental perception of alcohol was not asked until 2009. On the other hand, the composite marijuana perception score is only available for 2009 to 2011 because the question related to self-perceived harm of using marijuana regularly was only asked in 2009 and 2011 (but not 2013). Given this limitations, analysis of the YRBS data shows that there is significantly higher mean alcohol perception score in 2013 compared to 2011 and among girls compared to boys. With regard to marijuana perception, girls have a significantly higher marijuana perception score compared to boys. There is no significant difference in the

mean alcohol perception score and the mean marijuana perception score between different grade levels. Note that higher alcohol and marijuana perception scores mean negative perception of alcohol and marijuana, respectively. For more details, please see Table 21.

Table 21. Mean Number of Alcohol and Marijuana Perception Score by Year, Grade Level, and Sex

Item	Mean Alcohol Perception Score ^a	Mean Marijuana Perception Score ^a
Year		
2003	Not Available	Not Available
2005	Not Available	Not Available
2007	Not Available	Not Available
2009	1.85	1.77
2011	1.81 ^b	1.62
2013	1.96 ^b	Not Available
Grade		
9 th	2.01	1.82
10 th	1.84	1.71
11 th	1.87	1.69
12 th	1.76	1.53
Sex		
Boys	1.78 ^c	1.52 ^d
Girls	1.96 ^c	1.79 ^d

^aHigher mean score indicates negative perception of alcohol and marijuana use.

^bMean alcohol perception score is significantly higher in 2013 than 2011.

^cMean alcohol perception score is significantly higher among girls than boys.

^dMean marijuana perception score is significantly higher among girls than boys.

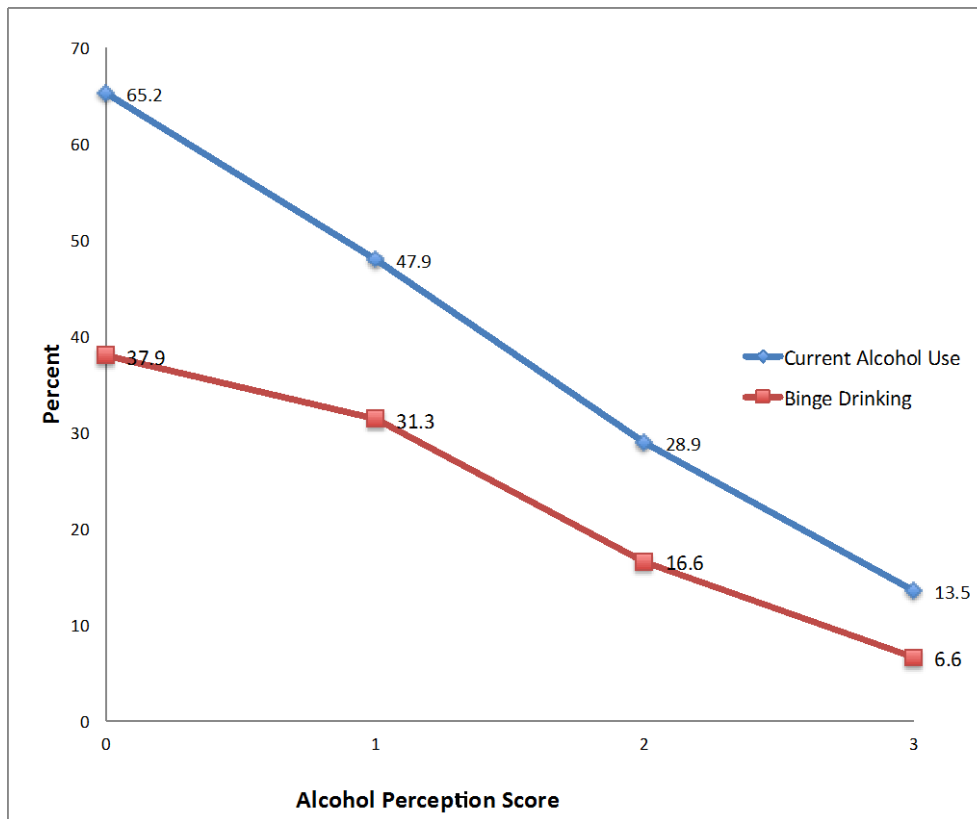
Correlation between mean alcohol perception score and alcohol use are analyzed. Data shows that the proportion of current alcohol use decreases with increasing alcohol perception score, with the alcohol perception score of 1 being the point of significant change. Rates of binge drinking also decrease with increasing alcohol perception score, with the alcohol perception score of 2 being the point of significant change. For details, please see Table 22 and Figure 19.

Table 22. Alcohol Perception Score and Alcohol Use, 2009 to 2013

Alcohol Perception Score	Current Alcohol Use (Percent)	Binge Drinking (Percent)
0	65.2	37.9
1	47.9	31.3
2	28.9	16.6
3	13.5	6.6

Green Font: Point of significance, p<0.05.

Figure 19. Graph showing the relationship of alcohol perception and use, 2009 to 2013



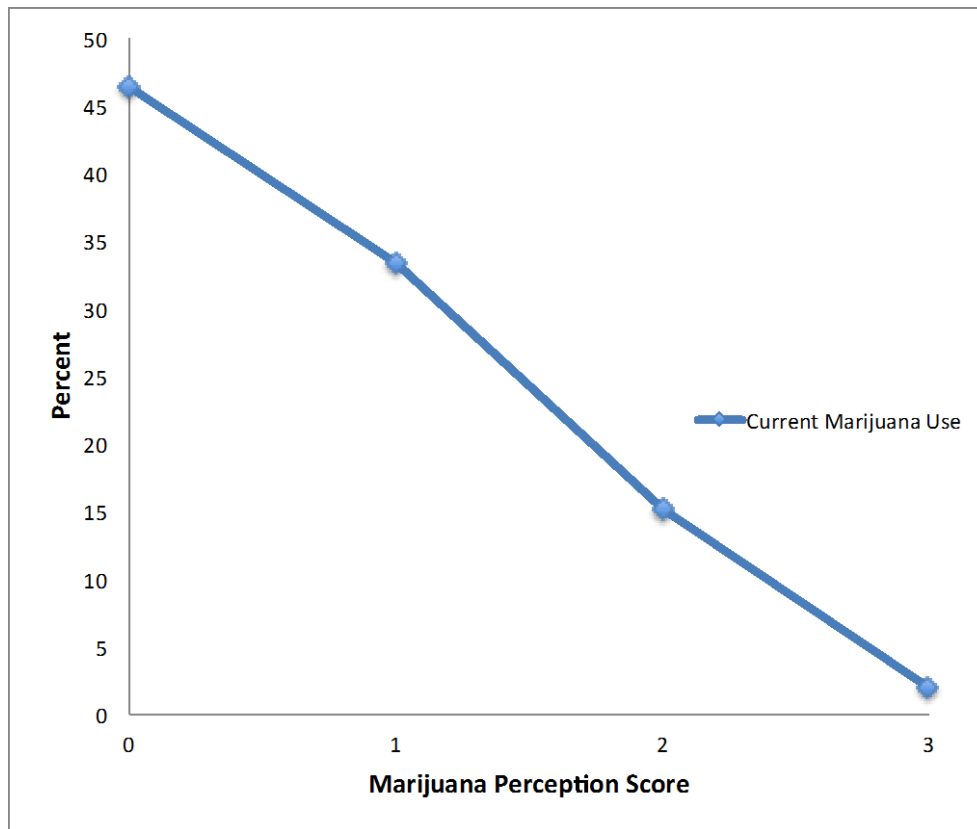
In analyzing the correlation of marijuana perception score and marijuana use, a similar pattern is observed. Data show that rates of current marijuana use decrease with an increasing marijuana perception score, with the score of 1 being the point of significant change. For details, see Table 23 and Figure 20.

Table 23. Marijuana Perception Score and Current Marijuana Use, 2009 to 2011

Marijuana Perception Score	Current Marijuana Use (Percent)
0	46.4
1	33.3
2	15.1
3	2.0

Green Font: Point of significance, $p < 0.05$.

Figure 20. Graph showing the relationship of marijuana perception and use, 2009 to 2011



Prescription Drugs

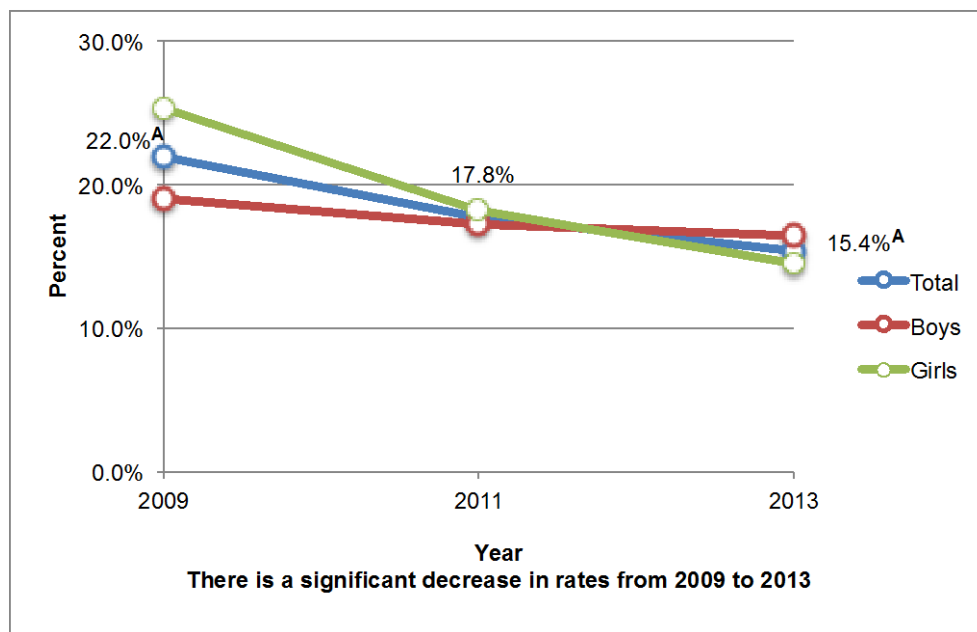
YRBS has two questions related to the use of prescription drugs. One is whether the student has ever taken prescription drugs without a prescription from a doctor during their lifetime. The other question is whether they have taken prescription drugs without prescription from a doctor during the past 30 days. The first question has been asked on YRBS since 2009, while the second has just been added in 2011.

Ever Use Prescription Drugs. Students' use of prescription drugs without a doctor's prescription during their lifetime has significantly decreased from 22% in 2009 to 15% in 2013. Ever use of prescription drugs among boys and girls are not significantly different, but its rate increases with increasing grade level. For more details see Table 24 and Figure 21.

Table 24. Percentage of students who have ever taken a prescription drug without a prescription from a doctor during their life

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	DNC	DNC	DNC	22.0%	17.8%	15.4%
95% Confidence interval	DNC	DNC	DNC	(18.9%--25.4%)	(15.5%--20.3%)	(12.8%--18.5%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	DNC	DNC	DNC	19.0%	17.3%	16.4%
Girls	DNC	DNC	DNC	25.3%	18.3%	14.5%
9th Grade	DNC	DNC	DNC	19.2%	11.2%	9.7%
10th Grade	DNC	DNC	DNC	16.2%	21.0%	13.2%
11th Grade	DNC	DNC	DNC	27.4%	19.2%	19.2%
12th Grade	DNC	DNC	DNC	25.0%	19.8%	19.9%

Figure 21. Graph showing the proportion of students who have ever taken a prescription drug without a prescription from a doctor during their life each YRBS year

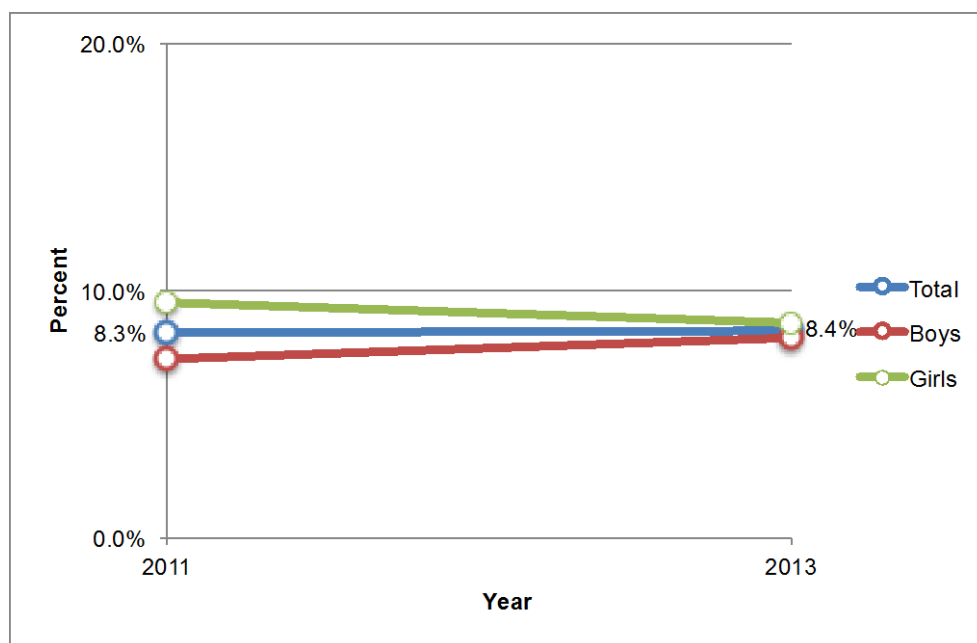


Current Use of Prescription Drugs. The proportion of students who took a prescription drug without a doctor's prescription during the past 30 days has not significantly changed from 2011 to 2013. Its rate remains at around 8%. Rates for current prescription drug use without a doctor's prescription are not significantly different for boys and girls, but there seem to be an increasing rate of current use from 9th to 12th grade. For details see Table 25 and Figure 22.

Table 25. Percentage of students who took a prescription drug without a prescription from a doctor one or more times during the past 30 days

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	DNC	DNC	DNC	DNC	8.3%	8.4%
95% Confidence Interval	DNC	DNC	DNC	DNC	(6.7%--10.3%)	(6.5%--10.8%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	DNC	DNC	DNC	DNC	7.2%	8.1%
Girls	DNC	DNC	DNC	DNC	9.5%	8.7%
9th Grade	DNC	DNC	DNC	DNC	6.1%	5.4%
10th Grade	DNC	DNC	DNC	DNC	9.5%	9.1%
11th Grade	DNC	DNC	DNC	DNC	7.1%	6.4%
12th Grade	DNC	DNC	DNC	DNC	10.5%	12.7%

Figure 22. Graph showing the proportion of students who took a prescription drug without a prescription from a doctor one or more times during the past 30 days each YRBS year



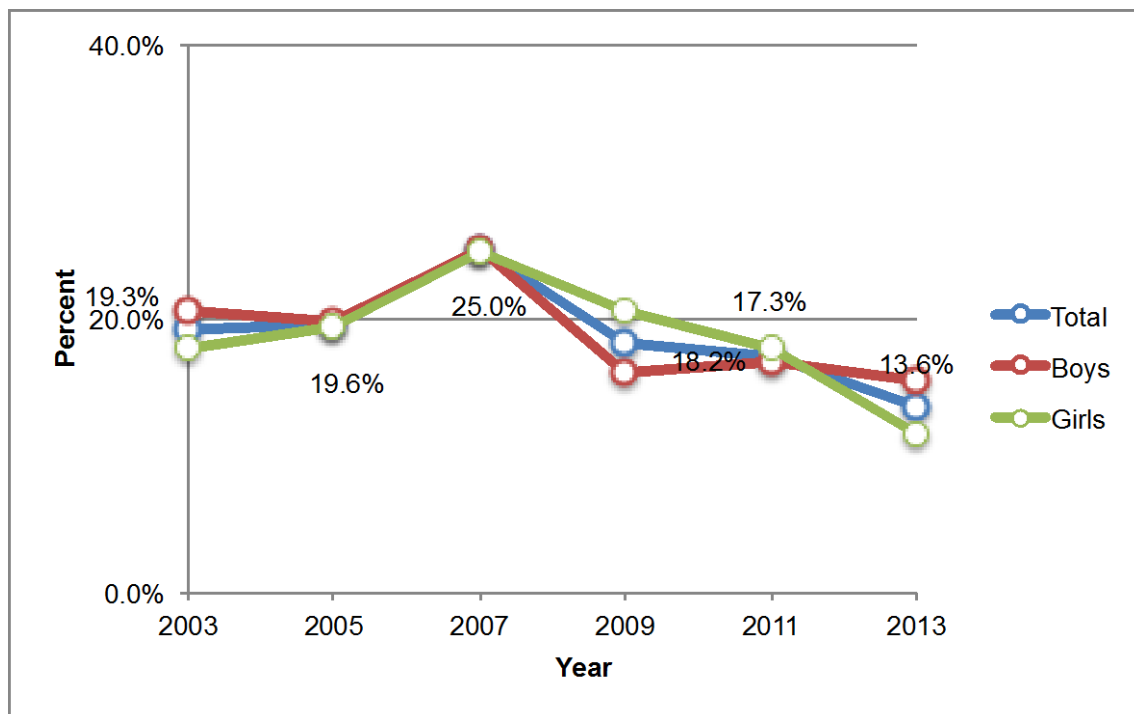
Other Drugs

Besides marijuana and prescription drugs, ever use of other illicit drugs—including cocaine, solvents, heroin, methamphetamines, or ecstasy—was also asked among youth in the YRBS. Although lifetime use rates of these drugs may seem to be declining from 2003 (19.3%) to 2013 (13.6%), these declines are not statistically significant due to the small number of youth reporting this and wide confidence intervals between the rate of use each YRBS year. For details, please see Table 26 and Figure 23.

Table 26. Percentage of students who have ever used cocaine, solvents, heroin, methamphetamines, or ecstasy

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	19.3%	19.6%	25.0%	18.2%	17.3%	13.6%
95% Confidence interval	(15.4%–23.9%)	(15.9%–23.9%)	(21.1%–29.4%)	(15.5%–21.3%)	(14.6%–20.4%)	(11.1%–16.7%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	20.5%	19.8%	25.1%	16.0%	16.8%	15.5%
Girls	17.9%	19.4%	24.9%	20.6%	17.8%	11.6%
9th Grade	11.6%	12.9%	21.7%	16.0%	14.3%	10.1%
10th Grade	24.3%	19.6%	26.1%	15.7%	17.3%	13.2%
11th Grade	21.5%	25.6%	21.0%	19.7%	19.0%	14.0%
12th Grade	20.8%	21.8%	32.0%	21.5%	18.6%	17.2%

Figure 23. Graph showing the proportion of students who have ever used cocaine, solvents, heroin, methamphetamines, or ecstasy each YRBS year



Bullying

YRBS has two questions related to bullying. One is whether the youth has ever been bullied on school property in the past 12 months; and the other is whether the youth has ever been electronically bullied in the past 12 months. The former has been part of the YRBS questionnaire since 2009, while the latter was added in the survey two years later in 2011.

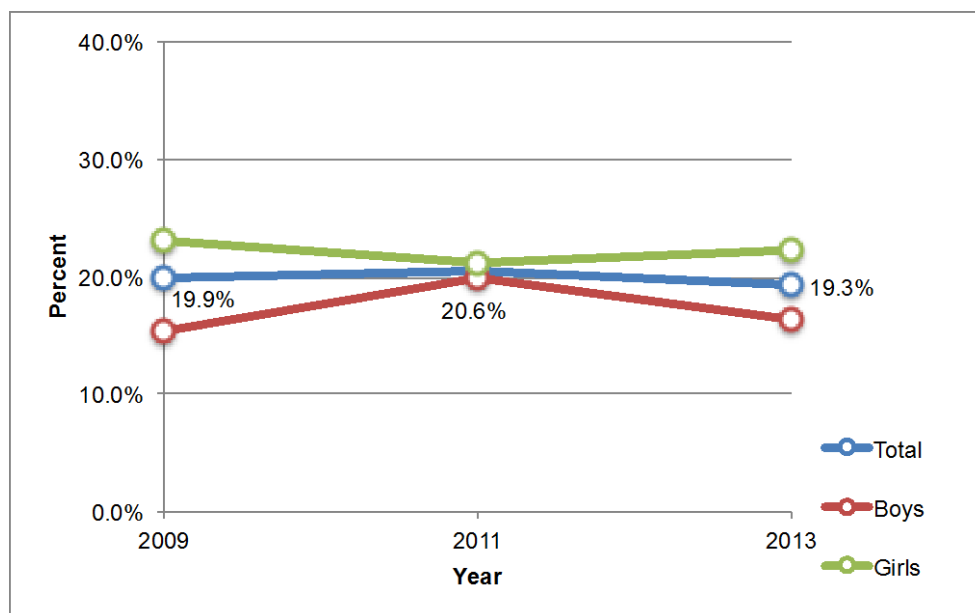
Bullying in School. Rates of being bullied in school since 2009 have remained generally unchanged at around 20%. However, significantly greater proportion of girls compared to boys

report being bullied in school in the past 12 months. Moreover, a greater proportion of 9th graders are bullied compared to 12th graders. See Table 27 and Figure 24 for details.

Table 27. Percentage of students who had been bullied on school property during the past 12 months

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	DNC	DNC	DNC	19.9%	20.6%	19.3%
95% Confidence interval	DNC	DNC	DNC	(16.6%–21.9%)	(18.1%–23.3%)	(16.6%–22.2%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	DNC	DNC	DNC	15.4%	20.0%	16.3%
Girls	DNC	DNC	DNC	23.1%	21.2%	22.3%
9th Grade	DNC	DNC	DNC	23.0%	27.6%	27.0%
10th Grade	DNC	DNC	DNC	21.0%	17.2%	22.5%
11th Grade	DNC	DNC	DNC	17.9%	19.2%	12.0%
12th Grade	DNC	DNC	DNC	14.6%	18.7%	14.9%

Figure 24. Graph showing the proportion of students who had been bullied on school property during the past 12 months each YRBS year

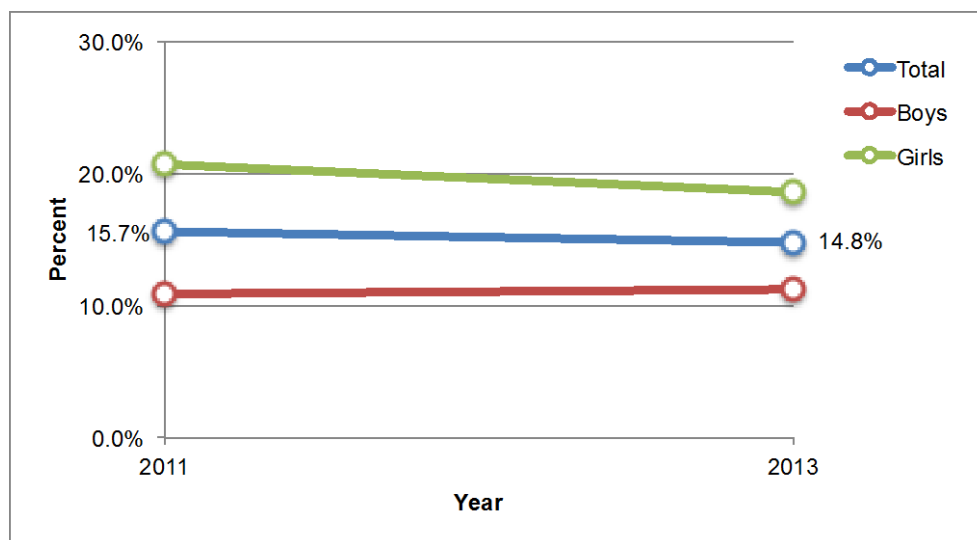


Electronic Bullying. Rates of being electronically bullied in the past 12 months have not significantly changed from 2011 to 2013. The proportion reporting being bullied electronically is around 15%. As found in school bullying, greater proportion of girls compared to boys and 9th graders compared to 12th graders report being electronically bullied. See Table 28 and Figure 25 for details.

Table 28. Percentage of students who had been bullied electronically during the past 12 months

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	DNC	DNC	DNC	DNC	15.7%	14.8%
95% Confidence Interval	DNC	DNC	DNC	DNC	(13.8%--17.8%)	(12.5%--17.5%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	DNC	DNC	DNC	DNC	10.9%	11.2%
Girls	DNC	DNC	DNC	DNC	20.7%	18.6%
9th Grade	DNC	DNC	DNC	DNC	17.9%	18.7%
10th Grade	DNC	DNC	DNC	DNC	14.1%	15.4%
11th Grade	DNC	DNC	DNC	DNC	16.0%	11.0%
12th Grade	DNC	DNC	DNC	DNC	14.7%	13.8%

Figure 25. Graph showing the proportion of students who had been bullied electronically during the past 12 months each YRBS year



Mental Health and Suicide

Five YRBS questions were examined for the Mental Health and Suicide category: whether the student felt sad or hopeless in the past 12 months; whether the student had seriously considered suicide in the past 12 months; whether the student made a plan how they would attempt suicide during the past 12 months; whether the student actually attempted suicide at least once in the past 12 months; and whether the suicide attempt during the past 12 months resulted in an injury, poisoning, or overdose. All these questions have been asked on YRBS since 2003.

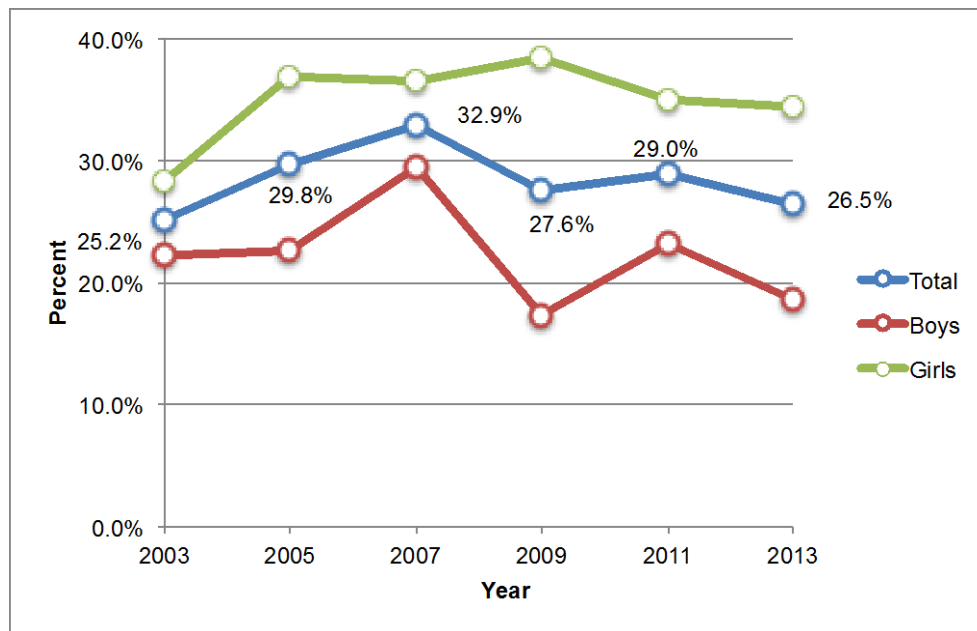
Felt Sad or Hopeless. The proportion of students reporting feeling sad or hopeless almost every day for two weeks in a row during the past 12 months has not changed significantly since 2003; it is around 26%. From 2003 to 2013, a greater proportion of girls than boys have reported

feeling sad or hopeless in the past 12 months, while no significant differences in rates were observed between different grade levels. See Table 29 and Figure 26 for details.

Table 29. Percentage of students who felt so sad or hopeless almost every day for two weeks or more in a row that they stopped doing their usual activities during the past 12 months

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	25.2%	29.8%	32.9%	27.6%	29.0%	26.5%
95% Confidence interval	(21.6%–29.2%)	(25.2%–34.9%)	(28.8%–37.3%)	(24.3%–31.2%)	(25.9%–32.2%)	(23.6%–29.6%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	22.3%	22.7%	29.5%	17.4%	23.2%	18.7%
Girls	28.3%	37.0%	36.5%	38.5%	35.0%	34.5%
9th Grade	23.4%	34.6%	29.5%	29.8%	26.4%	28.7%
10th Grade	23.4%	30.2%	30.2%	24.3%	30.1%	28.0%
11th Grade	28.8%	29.0%	33.7%	32.0%	29.6%	24.1%
12th Grade	25.8%	23.6%	39.1%	24.1%	29.8%	24.9%

Figure 26. Graph showing the proportion of students who felt so sad or hopeless almost every day for two weeks or more in a row that they stopped doing their usual activities during the past 12 months each YRBS year

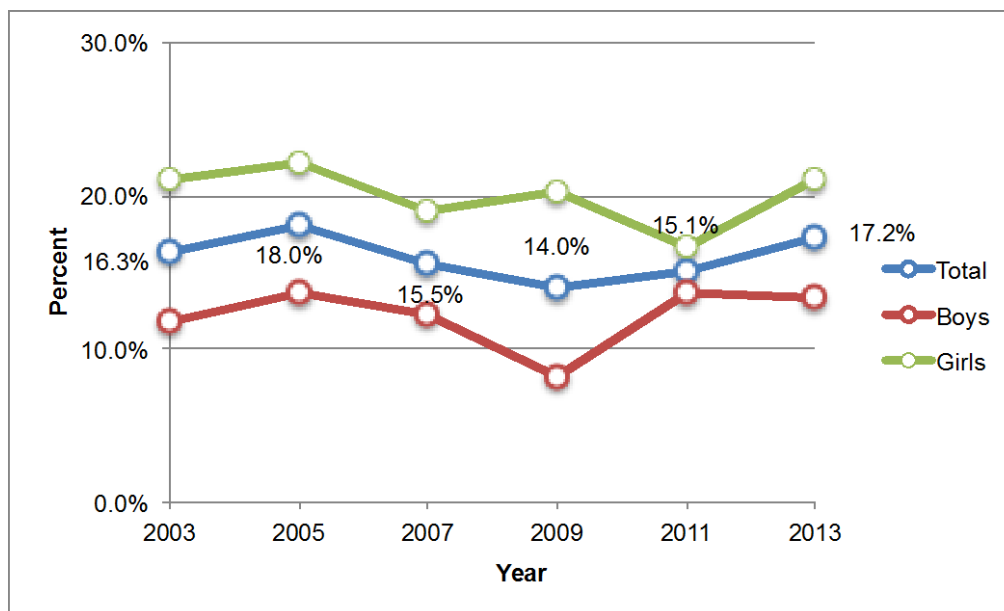


Seriously Considered Suicide. The proportion of students who had seriously considered attempting suicide during the past 12 months has remained fairly stable through the years at around 16%, with girls generally having higher rates than boys. The rate in 2013, however, was 17.2%. Rates of students who had seriously considered suicide tend to decrease with increasing grade level, thus 9th graders tend to have higher rates than 12th graders. See Table 30 and Figure 27 for details.

Table 30. Percentage of students who had seriously considered attempting suicide during the past 12 months

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	16.3%	18.0%	15.5%	14.0%	15.1%	17.2%
95% Confidence interval	(13.0%–20.3%)	(14.2%–22.4%)	(12.8%–18.7%)	(11.7%–16.7%)	(13.0%–17.4%)	(14.6%–20.1%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	11.8%	13.7%	12.2%	8.2%	13.6%	13.3%
Girls	21.1%	22.2%	19.0%	20.3%	16.6%	21.1%
9th Grade	19.6%	20.9%	18.8%	16.5%	15.6%	22.9%
10th Grade	13.5%	19.6%	17.0%	15.0%	14.2%	15.5%
11th Grade	14.5%	18.5%	15.7%	14.4%	17.4%	14.5%
12th Grade	17.5%	11.0%	9.7%	10.2%	13.2%	15.4%

Figure 27. Graph showing the proportion of students who had seriously considered attempting suicide during the past 12 months each YRBS year

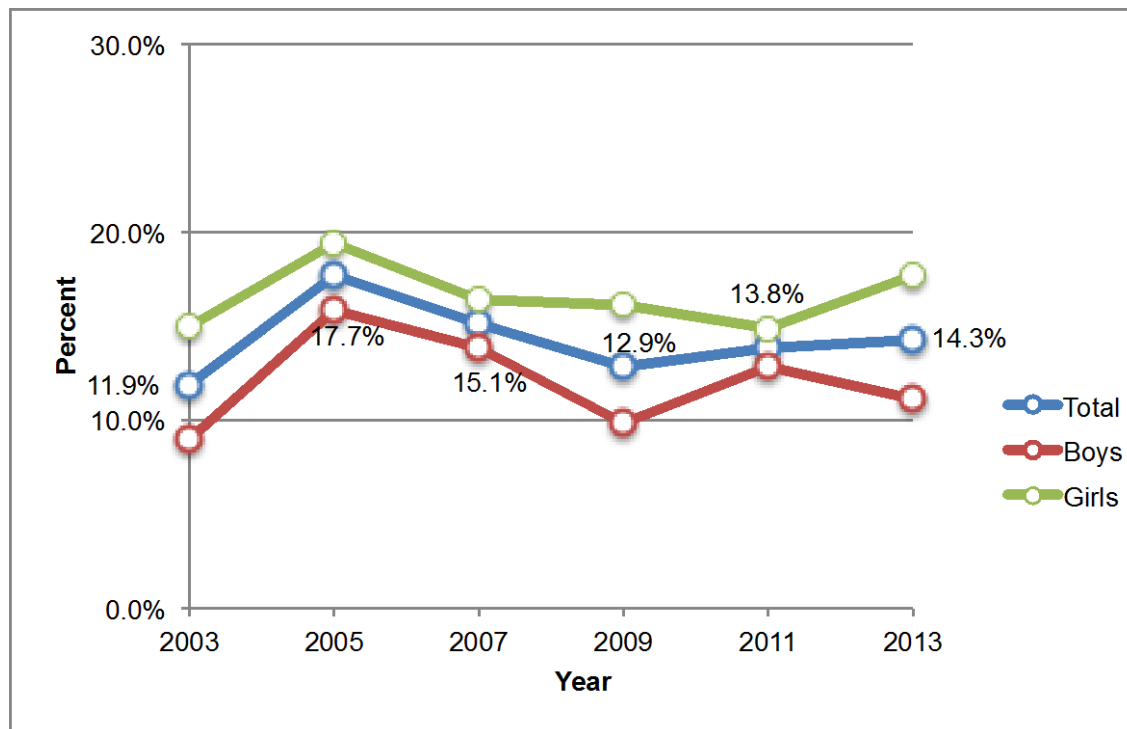


Planned an Attempt to Commit Suicide. The proportion of students who made a plan about how they would attempt suicide during the past 12 months also remained fairly stable at around 14% from 2003 to 2013, with girls having higher rates than boys but not by significant amounts. From 2003 to 2013, greater proportion of 9th graders compared to 12th graders reported planning an attempt to commit suicide in the past 12 months. For more details see Table 31 and Figure 28.

Table 31. Percentage of students who made a plan about how they would attempt suicide during the past 12 months

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	11.9%	17.7%	15.1%	12.9%	13.8%	14.3%
95% Confidence interval	(9.1%--15.6%)	(14.2%--21.8%)	(12.2%--18.6%)	(10.9%--15.2%)	(11.6%--16.4%)	(11.6%--17.6%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	9.0%	15.9%	13.9%	9.9%	12.8%	11.1%
Girls	15.0%	19.4%	16.4%	16.2%	14.9%	17.7%
9th Grade	12.1%	20.3%	16.1%	16.3%	16.3%	18.2%
10th Grade	10.5%	20.7%	18.0%	14.7%	12.4%	12.8%
11th Grade	13.1%	16.7%	15.1%	9.9%	15.1%	15.7%
12th Grade	12.3%	11.2%	10.4%	10.6%	11.6%	10.7%

Figure 28. Graph showing the proportion of students who made a plan about how they would attempt suicide during the past 12 months each YRBS year

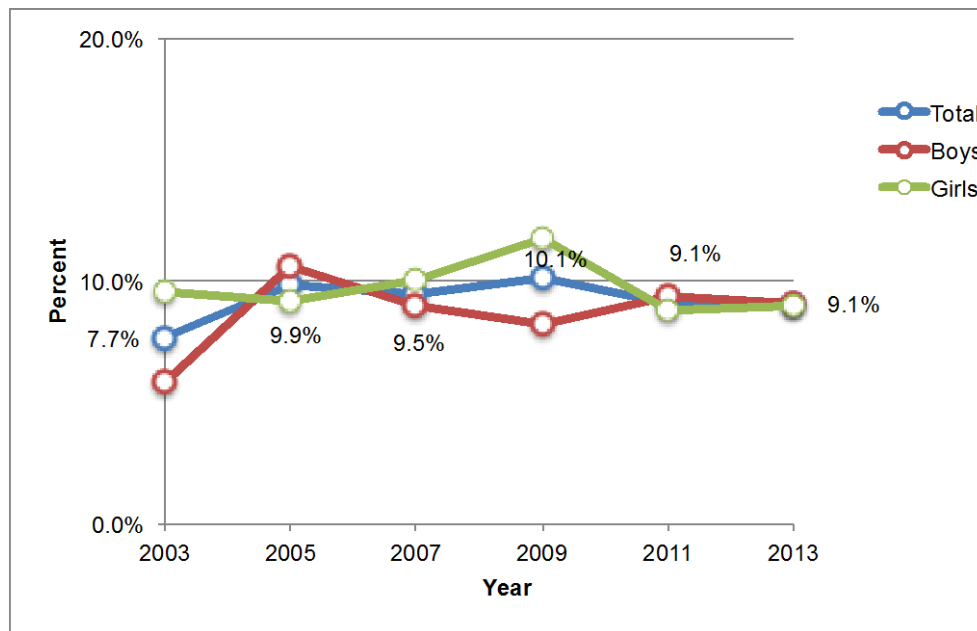


Attempted Suicide. Data shows no significant changes in the rates of students reporting attempting suicide in the past 12 months from 2003 to 2013. Attempted suicide rate is around 9%. There were also no significant difference in attempted suicide rates between boys and girls and among different grade levels. For more details, please see Table 32 and Figure 29.

Table 32. Percentage of students who actually attempted suicide one or more times during the past 12 months

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	7.7%	9.9%	9.5%	10.1%	9.1%	9.1%
95% Confidence interval	(5.3%--11.1%)	(7.3%--13.2%)	(6.7%--13.3%)	(7.9%--12.8%)	(7.0%--11.9%)	(7.2%--11.4%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	5.8%	10.6%	9.0%	8.2%	9.4%	9.1%
Girls	9.6%	9.2%	10.0%	11.8%	8.8%	9.0%
9th Grade	10.0%	13.8%	9.5%	13.6%	11.4%	10.2%
10th Grade	5.0%	13.6%	9.6%	9.4%	5.0%	9.1%
11th Grade	6.6%	7.6%	12.0%	8.9%	10.9%	7.0%
12th Grade	9.5%	2.1%	6.8%	8.4%	9.4%	9.9%

Figure 29. Graph showing the proportion of students who actually attempted suicide one or more times during the past 12 months each YRBS year

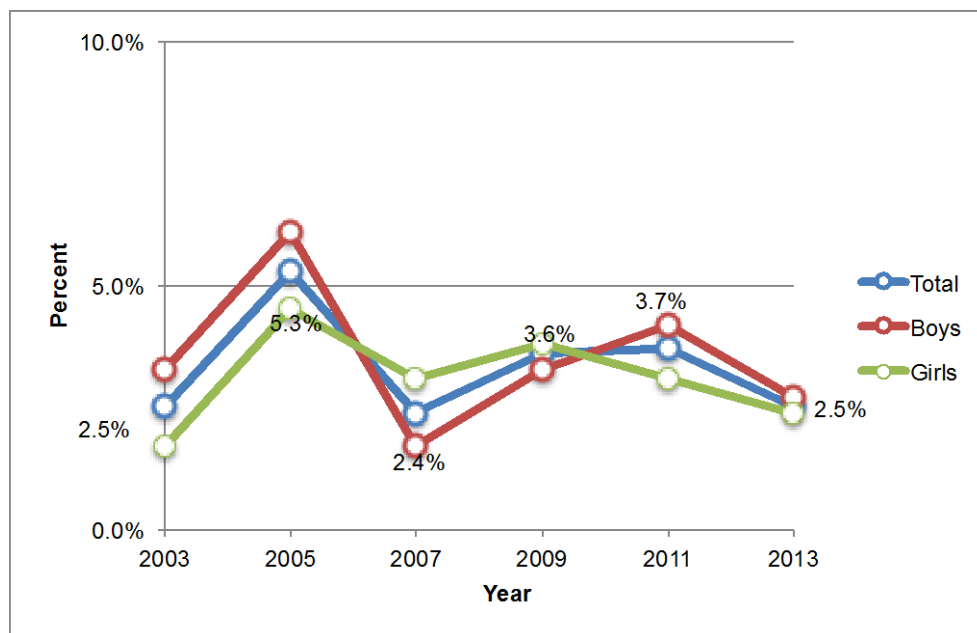


Attempted Suicide Resulting in Injury, Poisoning, or Overdose. Data shows no significant changes in the rates of students reporting attempting suicide in the past 12 months that resulted in injury, poisoning, or overdose from 2003 to 2013. Its rate remained at around 3%. There was also no significant difference in rates between boys and girls and among different grade levels. For more details, please see Table 33 and Figure 30.

Table 33. Percentage of students who made a suicide attempt during the past 12 months that resulted in an injury, poisoning, or overdose that had to be treated by a doctor or nurse

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	2.5%	5.3%	2.4%	3.6%	3.7%	2.5%
95% Confidence interval	(1.5%–4.2%)	(3.4%–7.9%)	(1.6%–3.6%)	(2.4%–5.2%)	(2.4%–5.5%)	(1.7%–3.7%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	3.3%	6.1%	1.7%	3.3%	4.2%	2.7%
Girls	1.7%	4.5%	3.1%	3.8%	3.1%	2.4%
9th Grade	2.7%	7.0%	1.7%	4.6%	5.7%	2.2%
10th Grade	2.2%	7.1%	3.6%	3.3%	1.1%	1.6%
11th Grade	1.6%	4.7%	2.7%	2.5%	2.9%	2.9%
12th Grade	3.5%	0.9%	1.5%	3.9%	4.9%	3.6%

Figure 30. Graph showing the proportion of students who made a suicide attempt during the past 12 months that resulted in an injury, poisoning, or overdose that had to be treated by a doctor or nurse each YRBS year



School Engagement

This report only focuses on one YRBS item related to school engagement; that is, whether the student reported missing classes or school without permission during the past 30 days. This specific YRBS question was just added in 2011; thus, there are only two years of data for this.

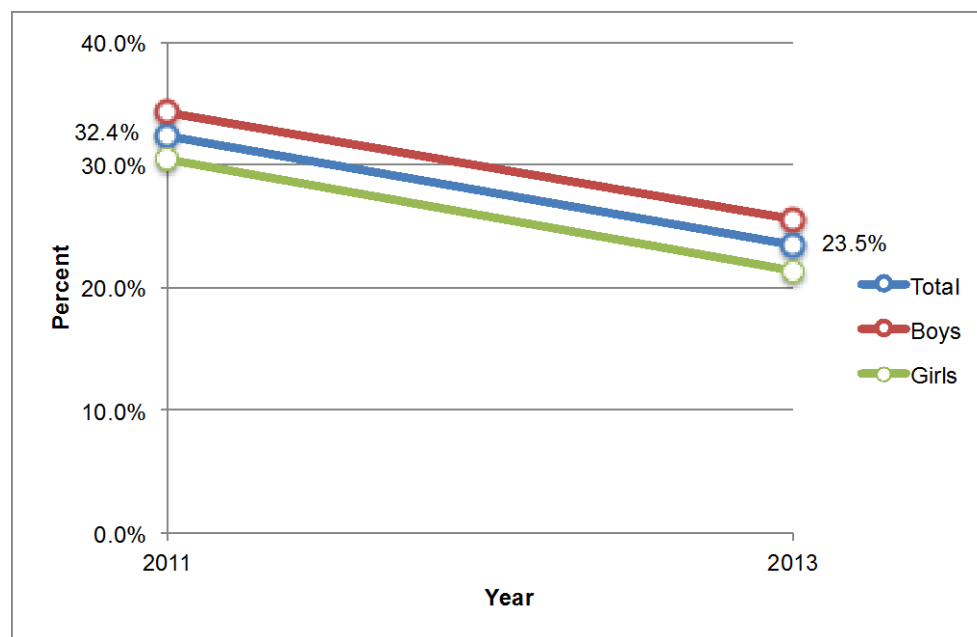
Missing Classes or School. Data shows that rates of students reporting missing classes or school seem to be declining. Approximately 32% reported missing classes or school in 2011 compared to about 24% in 2013. This difference in rates are not statistically significant, however, as seen from the overlap of their confidence intervals. Boys and 12th graders tend to have higher rates

of missed classes or school compared to their counterparts. See Table 34 and Figure 31 for details.

Table 34. Percentage of students who missed classes or school without permission during the past 30 days

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	DNC	DNC	DNC	DNC	32.4%	23.5%
95% Confidence Interval	DNC	DNC	DNC	DNC	(27.9%--37.3%)	(19.4%--28.3%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	DNC	DNC	DNC	DNC	34.2%	25.6%
Girls	DNC	DNC	DNC	DNC	30.5%	21.4%
9th Grade	DNC	DNC	DNC	DNC	21.1%	12.4%
10th Grade	DNC	DNC	DNC	DNC	24.5%	23.6%
11th Grade	DNC	DNC	DNC	DNC	33.1%	24.0%
12th Grade	DNC	DNC	DNC	DNC	50.8%	34.2%

Figure 31. Graph showing the proportion of students who missed classes or school without permission during the past 30 days each YRBS year



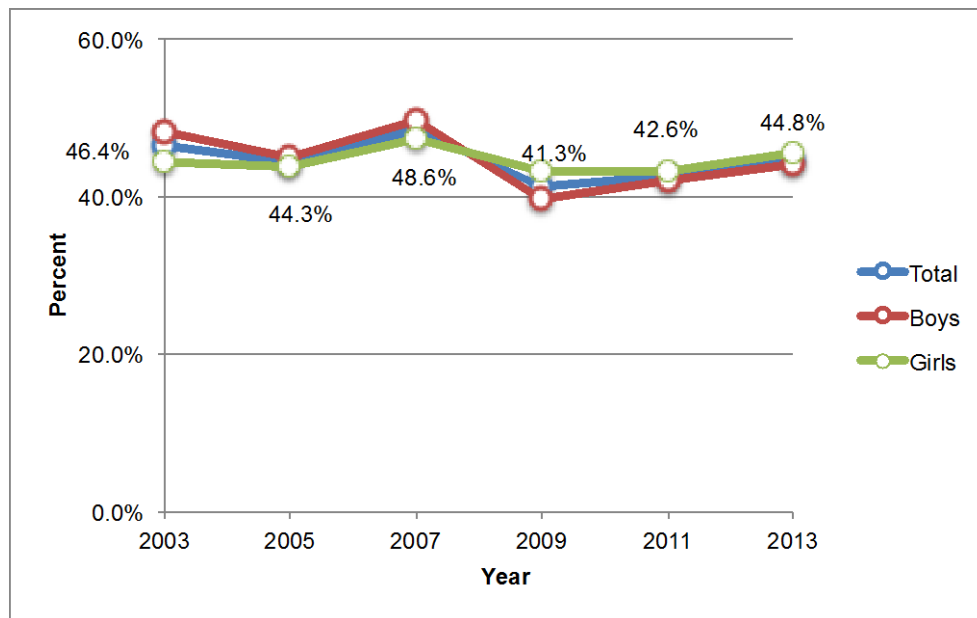
Protective Factors

As mentioned earlier, this report looks at eight protective factors categorized into five external developmental youth assets. In the category of “Family Support and Engagement”, the question assessed whether students had at least one parent talk with them about how they were doing in school about every day. From 2003 to 2013, rates of this protective factor have not significantly changed at around 42%. There are no significant differences in rates between boys and girls, as well as different grade levels. For more details, see Table 35 and Figure 32.

Table 35. Percentage of students who had at least one parent who talked with them about what they were doing in school about every day

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	46.4%	44.3%	48.6%	41.3%	42.6%	44.8%
95% Confidence interval	(40.8%–52.1%)	(40.3%–48.4%)	(44.2%–53.0%)	(36.7%–46.1%)	(38.9%–46.4%)	(40.9%–48.8%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	48.3%	44.9%	49.8%	39.6%	42.0%	44.2%
Girls	44.4%	43.7%	47.4%	43.2%	43.2%	45.5%
9th Grade	45.9%	49.9%	52.3%	33.2%	47.2%	46.3%
10th Grade	42.4%	41.5%	47.2%	49.7%	42.5%	48.0%
11th Grade	43.4%	34.7%	51.6%	44.1%	40.2%	45.7%
12th Grade	55.6%	52.5%	42.9%	38.6%	40.5%	39.4%

Figure 32. Graph showing the proportion of students who had at least one parent who talked with them about what they were doing in school about every day each YRBS year



In the category of “Supportive Adult Relationships”, the protective factor assessed was whether the students had at least one adult they are comfortable seeking help from besides their parents if they had an important question affecting their lives. There have been no significant changes in the rates of this protective factor since 2003. The proportion of student with at least one supportive adult besides their parents remains at around 83%, with no significant difference in rates between boys and girls and different grade levels (see Table 36 and Figure 33). Note that in the 2012 reports (Garcia & Sledge 2012; Garcia, 2012), rather than assessing having one or more supportive adult, they assessed having three or more supportive adults. If the proportion of students having three or more supportive adults was tracked from 2003 to 2012, this report also finds no significant changes through the years (see Table 37 and Figure 34).

Table 36. Percentage of students who would feel comfortable seeking help from at least one adult besides their parents if they had an important question affecting their lives

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	85.6%	83.0%	87.6%	82.0%	82.9%	81.9%
95% Confidence interval	(82.8%–88.5%)	(79.7%–85.9%)	(85.1%–89.7%)	(79.0%–84.7%)	(80.3%–85.2%)	(79.3%–84.2%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	81.4%	77.7%	87.4%	81.5%	81.3%	77.9%
Girls	90.7%	88.4%	87.7%	82.6%	84.5%	86.0%
9th Grade	85.4%	79.1%	83.6%	76.8%	81.6%	79.1%
10th Grade	84.9%	83.7%	85.2%	83.2%	82.3%	77.1%
11th Grade	87.8%	83.5%	90.9%	82.5%	81.6%	83.3%
12th Grade	85.7%	86.7%	91.3%	85.6%	86.1%	88.3%

Figure 33. Graph showing the proportion of students who would feel comfortable seeking help from at least one adult besides their parents if they had an important question affecting their lives per YRBS year

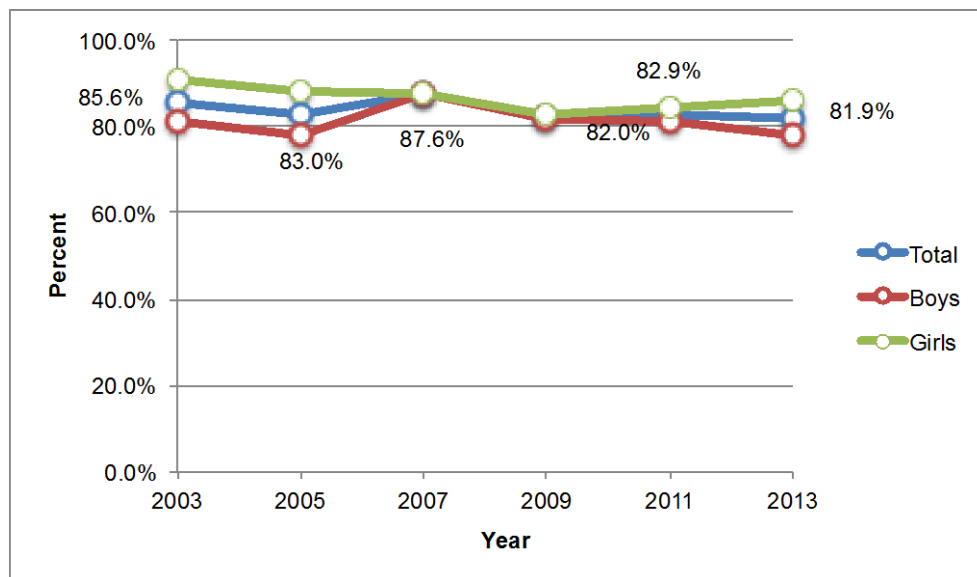
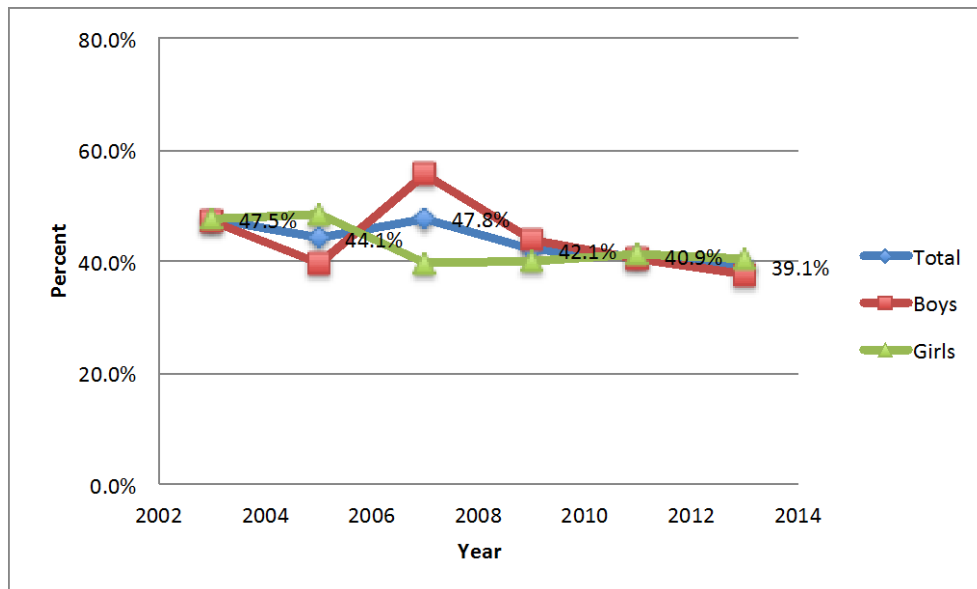


Table 37. Percentage of students who would feel comfortable seeking help from at least three adults besides their parents if they had an important question affecting their lives

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	47.5%	44.1%	47.8%	42.1%	40.9%	39.1%
95% Confidence interval	(42.5%–52.5%)	(39.5%–48.7%)	(44.1%–51.5%)	(38.5%–45.7%)	(37.8%–44.1%)	(35.7%–42.6%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	47.3%	39.6%	55.4%	43.9%	40.4%	37.7%
Girls	47.7%	48.6%	39.7%	40.0%	41.4%	40.5%
9th Grade	42.6%	40.2%	44.3%	35.8%	39.9%	35.4%
10th Grade	36.5%	48.2%	42.1%	43.7%	37.2%	36.6%
11th Grade	56.5%	41.2%	51.5%	41.9%	43.1%	38.5%
12th Grade	57.2%	47.5%	54.3%	46.8%	43.6%	45.9%

Figure 34. Graph showing the proportion of students who would feel comfortable seeking help from at least three adults besides their parents if they had an important question affecting their lives per YRBS year

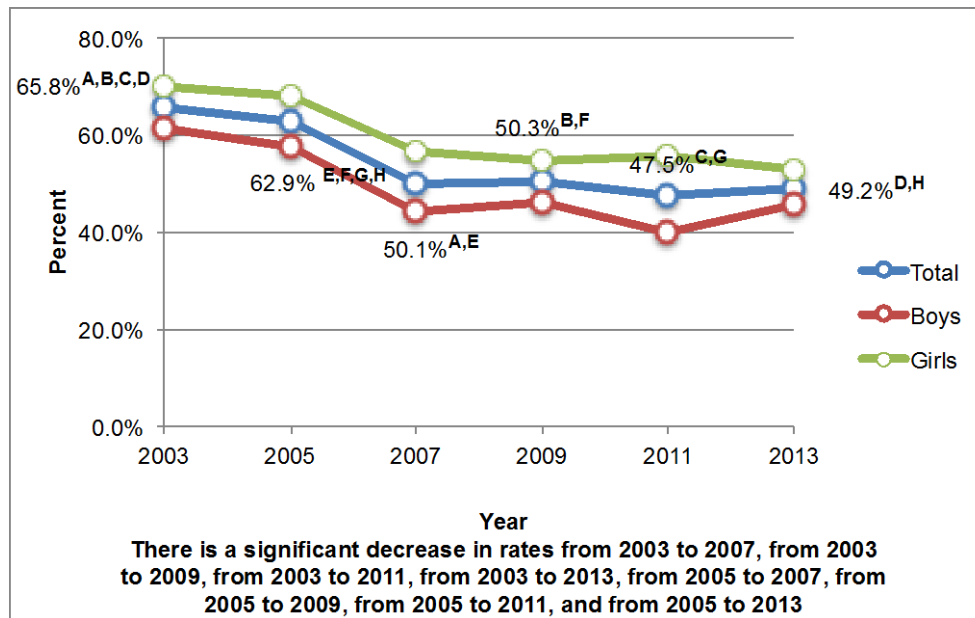


The third youth developmental asset category is “Meaningful Opportunities”. Two protective factors are assessed for this category—whether the student spent at least an hour a week volunteering or helping at school or in the community and whether they were involved in any organized afterschool activities at least one day per week. The former protective factor has been asked on YRBS since 2003, while the latter was not asked until 2007. The proportion of students spending at least an hour each week volunteering at school or in the community has significantly decreased from 65.8% in 2003 to 49.2% in 2013. While greater proportion of girls are volunteering than boys, no significant differences in rates are observed among different grade levels. For more details, please see Table 38 and Figure 35.

Table 38. Percentage of students who spend one or more hours during an average week helping people without getting paid, or volunteering at school or in the community

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	65.8%	62.9%	50.1%	50.3%	47.5%	49.2%
95% Confidence interval	(60.7%–70.6%)	(59.5%–66.2%)	(45.2%–55.1%)	(47.0%–53.6%)	(43.5%–51.5%)	(45.3%–53.2%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	61.6%	57.7%	44.1%	46.2%	39.8%	45.6%
Girls	70.2%	68.0%	56.6%	54.7%	55.6%	53.0%
9th Grade	64.7%	64.1%	48.5%	50.0%	44.5%	50.3%
10th Grade	61.7%	63.4%	50.6%	47.5%	46.3%	48.7%
11th Grade	70.7%	60.1%	53.3%	48.7%	50.2%	42.8%
12th Grade	66.5%	64.0%	48.3%	55.2%	49.4%	54.8%

Figure 35. Graph showing the proportion of students who spend one or more hours during an average week helping people without getting paid, or volunteering at school or in the community per YRBS year

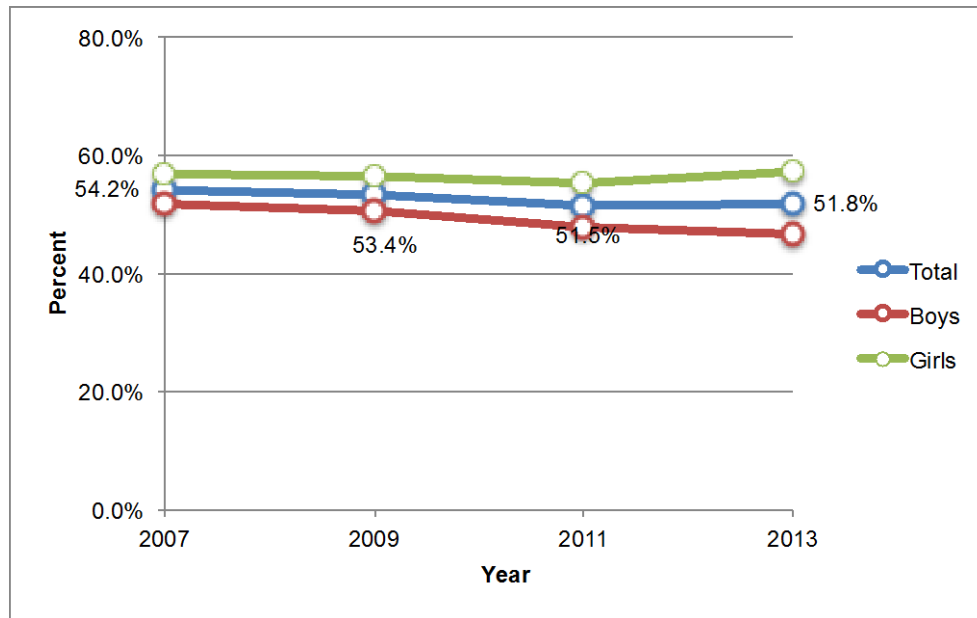


The proportion of students who spend at least one day per week taking part in an organized after school, evening, or weekend activities since 2007 has not significantly changed. Its rate is around 53%. There is greater proportion of girls compared to boys taking part in after school activities, but no significant difference in rates is observed between different grade levels. See Table 39 and Figure 36 for details.

Table 39. Percentage of students who take part in organized after school, evening, or weekend activities one or more days during an average week

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	DNC	DNC	54.2%	53.4%	51.5%	51.8%
95% Confidence Interval	DNC	DNC	(44.4%--58.9%)	(49.6%--57.2%)	(46.3%--56.7%)	(46.9%--56.6%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	DNC	DNC	44.1%	46.2%	39.8%	45.6%
Girls	DNC	DNC	56.6%	54.7%	55.6%	53.0%
9th Grade	DNC	DNC	48.5%	50.0%	44.5%	50.3%
10th Grade	DNC	DNC	50.6%	47.5%	46.3%	48.7%
11th Grade	DNC	DNC	53.3%	48.7%	50.2%	42.8%
12th Grade	DNC	DNC	48.3%	55.2%	49.4%	54.8%

Figure 36. Graph showing the proportion of students who take part in organized after school, evening, or weekend activities one or more days during an average week each YRBS year

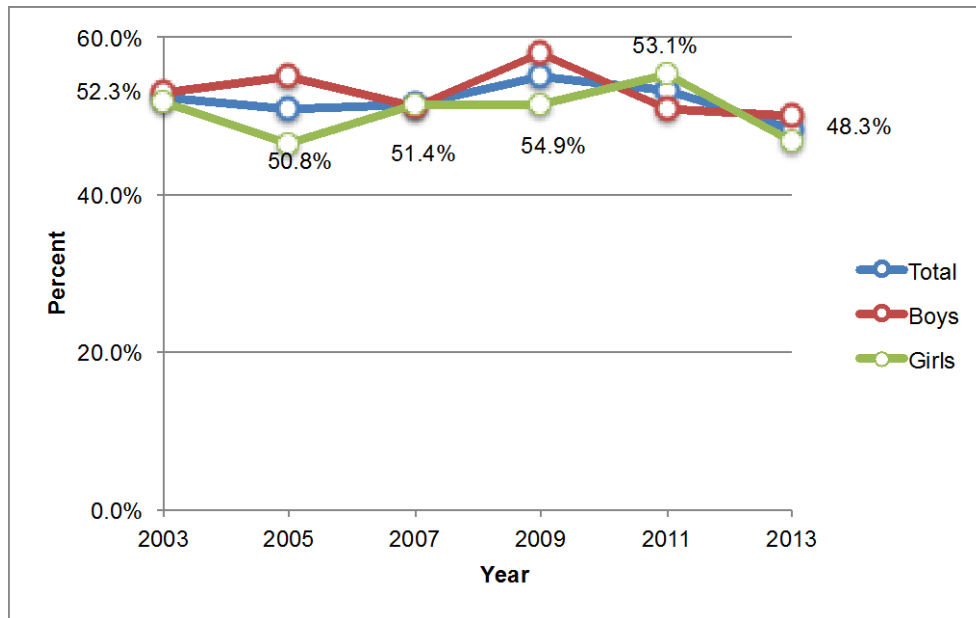


The fourth youth developmental asset category is “Community Support and Environment.” There are two protective factors under this category, including whether the students feel like they matter to people in their community and whether they feel like they are not alone. Since 2003, there have been no significant changes in the proportion of students who agree or strongly agree that they feel like they matter to people in their community; this rate is around 49%. No significant difference in rates is observed among boys and girls and different grade levels. See Table 39 and Figure 37 for details.

Table 40. Percentage of students who agree or strongly agree that in their community they feel like they matter to people

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	52.3%	50.8%	51.4%	54.9%	53.1%	48.3%
95% Confidence interval	(47.3%–57.3%)	(47.0%–54.4%)	(46.3%–56.4%)	(51.2%–58.6%)	(48.9%–57.3%)	(44.7%–52.0%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	52.9%	55.1%	51.3%	58.0%	50.9%	50.0%
Girls	51.7%	46.5%	51.5%	51.6%	55.4%	46.7%
9th Grade	43.0%	46.4%	55.0%	60.0%	50.2%	46.7%
10th Grade	53.4%	52.9%	52.1%	52.0%	52.4%	45.9%
11th Grade	54.3%	48.3%	51.0%	55.6%	52.5%	46.8%
12th Grade	61.2%	57.4%	46.7%	51.9%	57.4%	54.0%

Figure 37. Graph showing the proportion of students who agree or strongly agree that in their community they feel like they matter to people each YRBS year

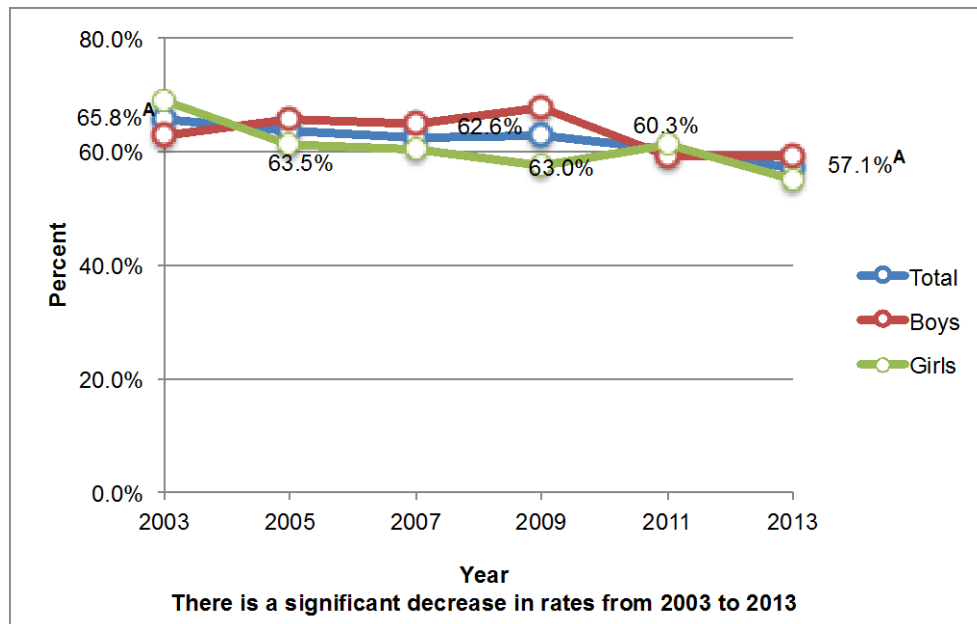


The proportion of students reporting that they disagree or strongly disagree that they feel alone in their life has significantly decreased from 65.8% in 2003 to 57.1% in 2013, with no significant difference between boys and girls and different grade levels. For more details, see Table 41 and Figure 38.

Table 41. Percentage of students who disagree or strongly disagree that they feel alone in their life

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	65.8%	63.5%	62.6%	63.0%	60.3%	57.1%
95% Confidence interval	(60.7%–70.6%)	(58.8%–68.0%)	(58.7%–66.4%)	(59.5%–66.3%)	(56.3%–64.1%)	(53.7%–60.5%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	62.8%	65.8%	64.7%	67.9%	59.3%	59.1%
Girls	68.9%	61.3%	60.5%	57.7%	61.3%	55.1%
9th Grade	60.3%	56.6%	60.4%	62.4%	58.6%	49.6%
10th Grade	65.4%	64.2%	61.1%	66.6%	60.6%	53.6%
11th Grade	70.3%	64.3%	63.6%	60.9%	59.6%	58.8%
12th Grade	68.5%	71.7%	66.0%	62.2%	62.3%	67.1%

Figure 38. Graph showing the proportion of students who disagree or strongly disagree that they feel alone in their life each YRBS year

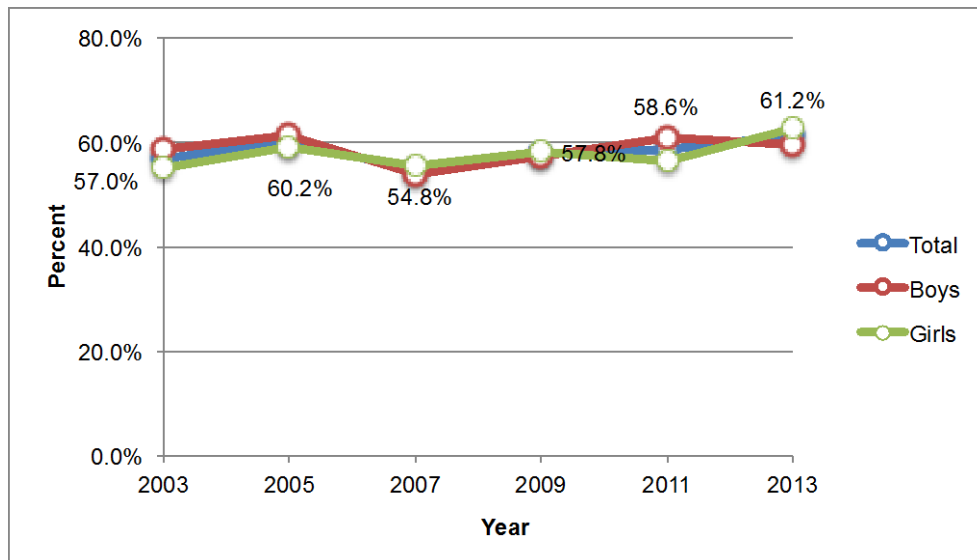


The fifth youth developmental asset category is “School Environment”. There are two protective factors are under this category, including whether the student has teachers who really care about them and give them a lot of encouragement and whether their school has clear rules and consequences for their behavior. From 2003 to 2013, the proportion of students who agree or strongly agree that their teachers really care about them and give them a lot of support has not significantly changed at around 56%, but in 2013 the rate was 61.2%. No significant difference was observed between boys and girls and different grade levels. See Table 42 and Figure 39 for more details.

Table 42. Percentage of students who agree or strongly agree that their teachers really care about them and give them a lot of encouragement

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	57.0%	60.2%	54.8%	57.8%	58.6%	61.2%
95% Confidence interval	(50.4%–63.4%)	(55.5%–64.7%)	(50.4%–59.1%)	(54.0%–61.6%)	(55.2%–61.9)	(57.4%–64.9%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	58.8%	61.3%	53.9%	57.5%	60.7%	59.7%
Girls	55.1%	59.1%	55.7%	58.2%	56.5%	62.7%
9th Grade	51.3%	63.8%	50.3%	54.6%	55.9%	58.4%
10th Grade	55.5%	54.1%	52.2%	53.5%	55.1%	60.0%
11th Grade	54.6%	49.8%	57.1%	55.0%	57.6%	64.2%
12th Grade	69.0%	76.6%	60.3%	68.3%	65.8%	62.4%

Figure 39. Graph showing the proportion of students who agree or strongly agree that their teachers really care about them and give them a lot of encouragement each YRBS year

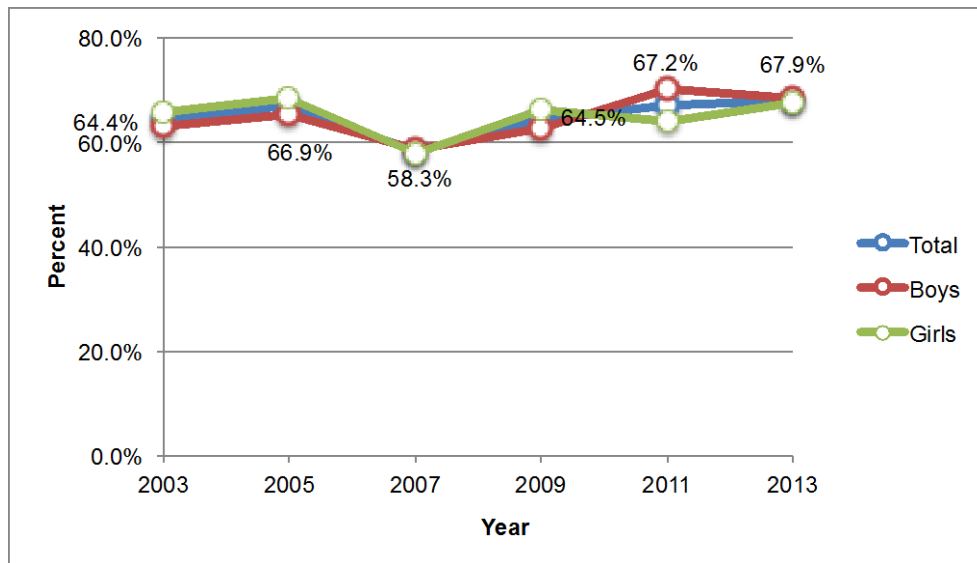


The proportion of students who agree or strongly agree that their school has clear rules and consequences for their behavior has not significantly changed from 2003 to 2013, as well. Its rate remained at around 64%, but the rate in 2013 was 67.9%, with no significant difference between boys and girls and between different grade levels. For more details, see Table 43 and Figure 40.

Table 43. Percentage of students who agree or strongly agree that their school has clear rules and consequences for behavior

	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Total	64.4%	66.9%	58.3%	64.5%	67.2%	67.9%
95% Confidence interval	(59.5%–69.0%)	(61.9%–71.5%)	(52.8%–63.5%)	(60.7%–68.0%)	(63.6%–70.6%)	(64.6%–71.1%)
By Categories	ASD: 2003	ASD: 2005	ASD: 2007	ASD: 2009	ASD: 2011	ASD: 2013
Boys	63.1%	65.3%	58.6%	62.7%	70.1%	68.4%
Girls	65.7%	68.5%	57.9%	66.4%	64.2%	67.4%
9th Grade	64.1%	66.8%	61.7%	61.8%	67.6%	71.6%
10th Grade	67.7%	61.2%	56.0%	62.0%	60.7%	65.1%
11th Grade	64.5%	71.3%	61.5%	65.1%	67.9%	69.4%
12th Grade	60.8%	69.1%	53.3%	69.0%	72.6%	65.4%

Figure 40. Graph showing the proportion of students who agree or strongly agree that their school has clear rules and consequences for behavior



Relationship between Protective Factors, Risk Behaviors, Bullying, and Mental Health and Suicide

From 2007 to 2013, the mean number of protective factors has not significantly changed. Note that years 2003 to 2005 are not included in the analysis because all eight protective factors are only accounted for from 2007 YRBS and on. On average, students have more than four protective factors. There is no significant difference in mean number of protective factors between boys and girls. However, 12th graders, on average, have significantly higher mean number of protective factors compared to 9th graders. See Table 44 below for more details.

Table 44. Mean Number of Protective Factors by Year, Grade Level, and Sex

Item	Mean Number of Protective Factors
Year	
2007	4.64
2009	4.63
2011	4.59
2013	4.53
Grade Level	
9 th	4.37 ^a
10 th	4.40
11 th	4.51
12 th	4.70 ^a
Sex	
Boys	4.57
Girls	4.41

^a12th graders have significantly higher mean number of protective factors compared to 9th graders.

Looking at the relationship of protective factors, risk behaviors, and other factors, data shows that, as the number of protective factors increases, the proportion of students reporting current alcohol use, binge drinking, and current marijuana use decreases (see Table 45 and Figure 41). Likewise, the rates of students being bullied (whether in school or electronically) (see Table 46 and Figure 42), feeling sad or hopeless, seriously considering suicide, and planning an attempt to commit suicide (see Table 47 and Figure 43) decrease as well with increasing number of protective factors.

Table 45. Protective factors score and risk behaviors, including current alcohol use, binge drinking, current marijuana use, and missing class without permission

Number of Protective Factors	% Currently Drinks Alcohol	% Binge Drink	% Currently Use Marijuana	% Miss Class without Permission
0	57.9	37.6	37.6	46.3
1	46.4	33.8	26.2	36.4
2	42.2	26.8	28.3	35.2
3	41.4	27.7	28.3	33.4
4	38.2	24.8	21.5	32.8
5	33.1	20.7	18.4	26.5
6	33.7	18.7	15.5	24.4
7	28.6	17.8	10.3	17.4
8	20.6	14.0	5.7	14.0

Figure 41. Graph showing the relationship of protective factors and risk behaviors, including current alcohol use, binge drinking, current marijuana use, and missing class without permission

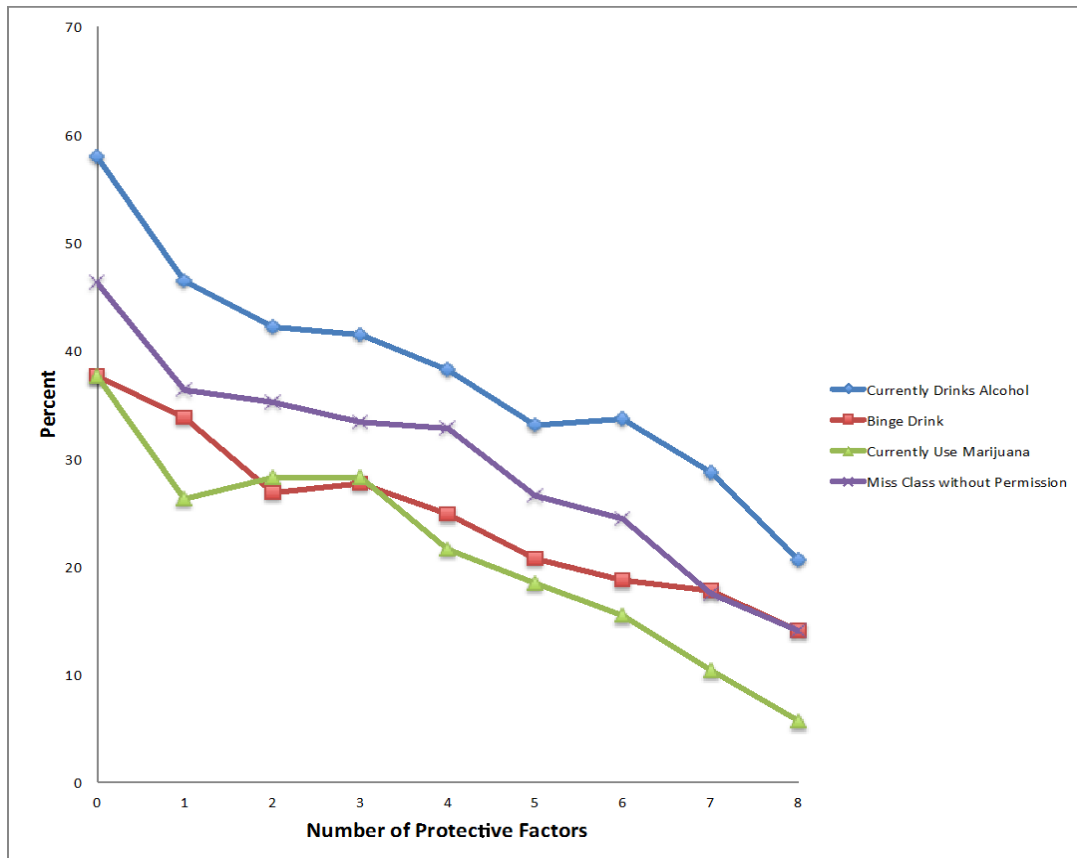


Table 46. Protective factors score and bullying

Number of Protective Factors	% Bullied in School	% Electronically Bullied
0	24.3	27
1	28.1	19.4
2	23.3	23.5
3	24.9	16.8
4	22.6	16.3
5	16.0	14.4
6	15.2	13.2
7	16.8	8.6
8	13.4	12.2

Figure 42. Graph showing the relationship of protective factors and bullying

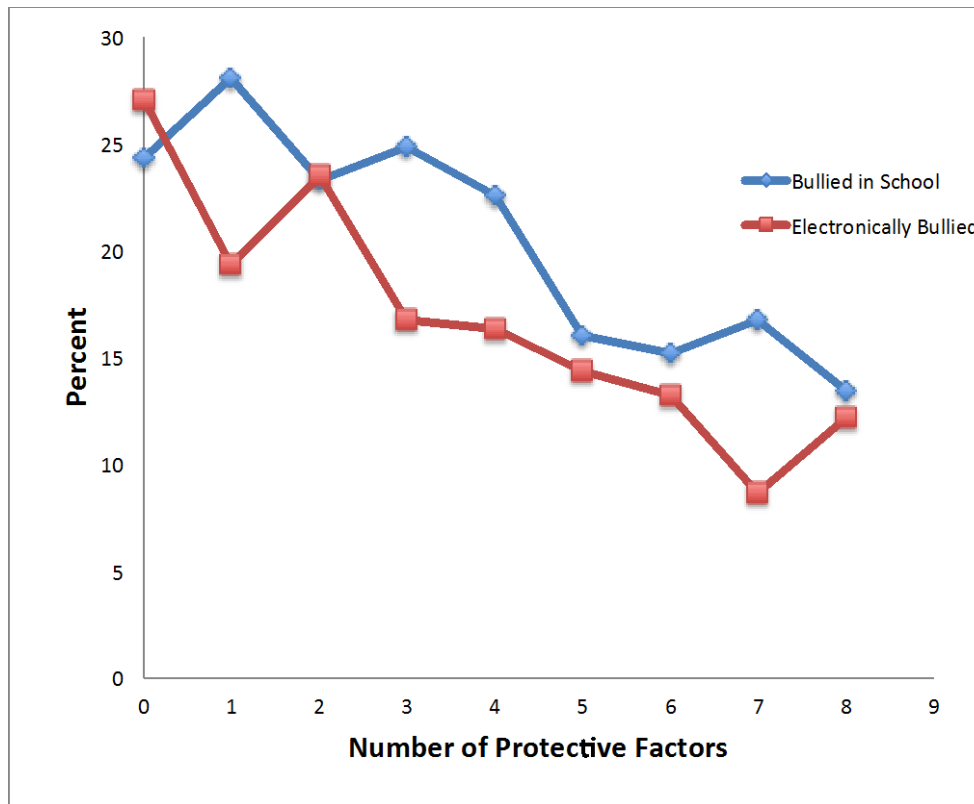
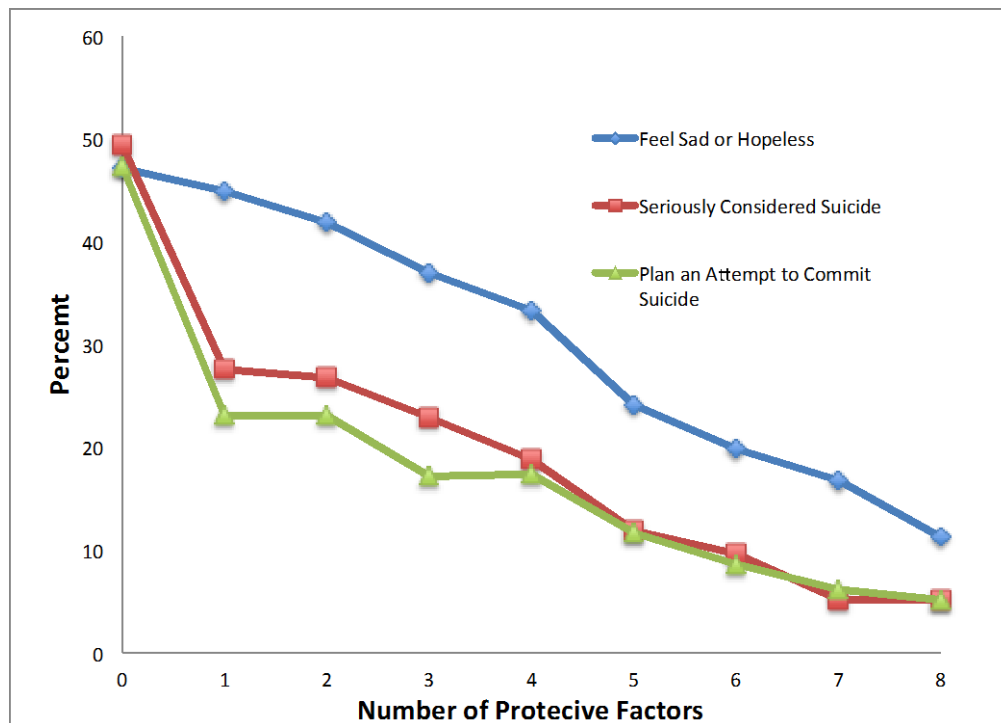


Table 47. Protective factors score, mental health, and suicide

Number of Protective Factors	% Feel Sad or Hopeless	% Seriously Considered Suicide	% Plan an Attempt to Commit Suicide
0	47.2	49.3	47.4
1	45.0	27.5	23.1
2	41.8	26.7	23.1
3	36.9	22.8	17.2
4	33.2	18.8	17.4
5	24.2	11.8	11.6
6	19.8	9.7	8.7
7	16.7	5.2	6.2
8	11.2	5.2	5.1

Figure 43. Graph showing the relationship of protective factors, mental health status, and suicide ideation and planned attempt



Another way of viewing the effect of the number of protective factors with risk behaviors and school engagement factors is by grouping the protective factors into three categories: 0 to 2, 3 to 5, and 6 to 8 protective factors. This perspective is important because it treats the number of protective factors in ranges rather than absolutes. In the real world setting, the number of protective factors among individuals may not necessarily be absolute, but rather falls in some range. In the case of Anchorage students, as mentioned in the previous section, they average having between 4 and 5 protective factors. Figures 44, 45, and 46 show that, with increasing number of protective factors, categorized into three groups, there is a decrease in rates of current alcohol use, binge drinking, current marijuana use, and absenteeism; bullying experience; and mental health status and suicide ideation and planned attempt, respectively.

Figure 44. Graph showing the relationship between risk behaviors and number of protective factors categorized into three group ranges

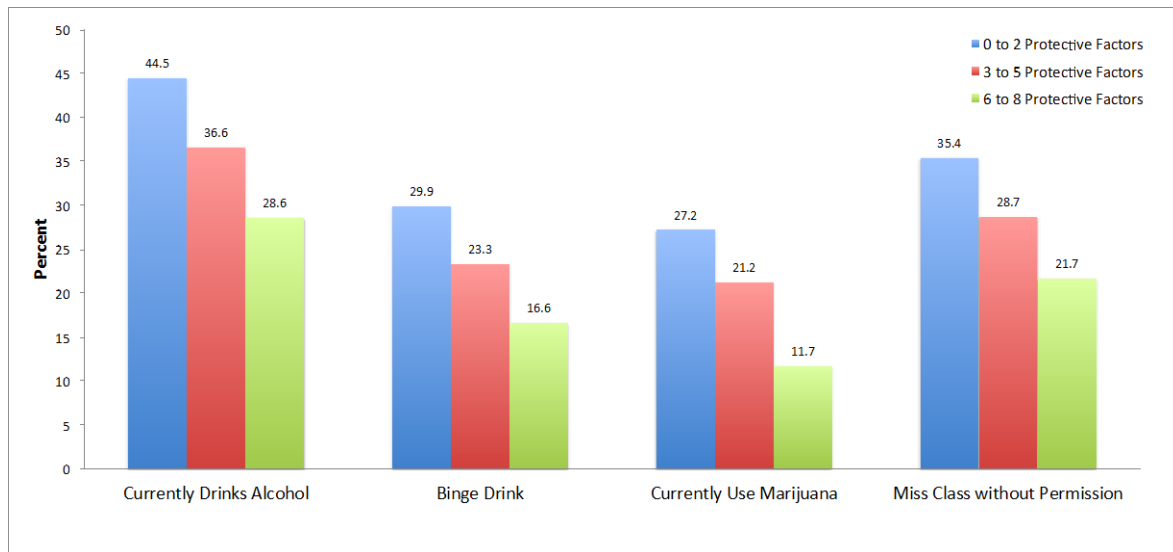


Figure 45. Graph showing the relationship between bullying experience and number of protective factors categorized into three group ranges

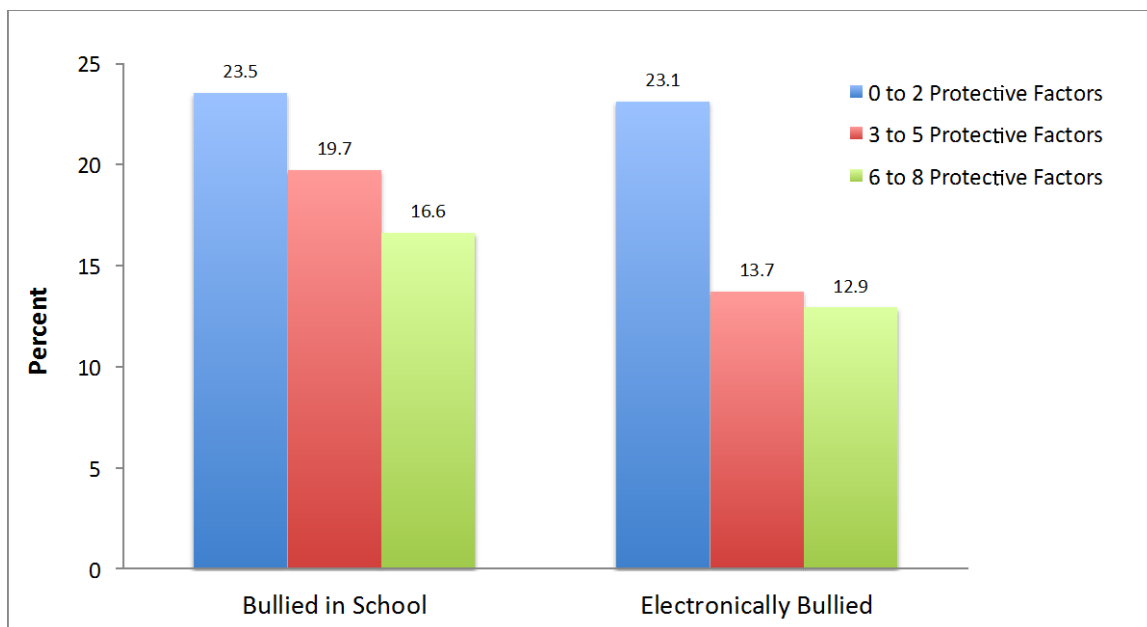
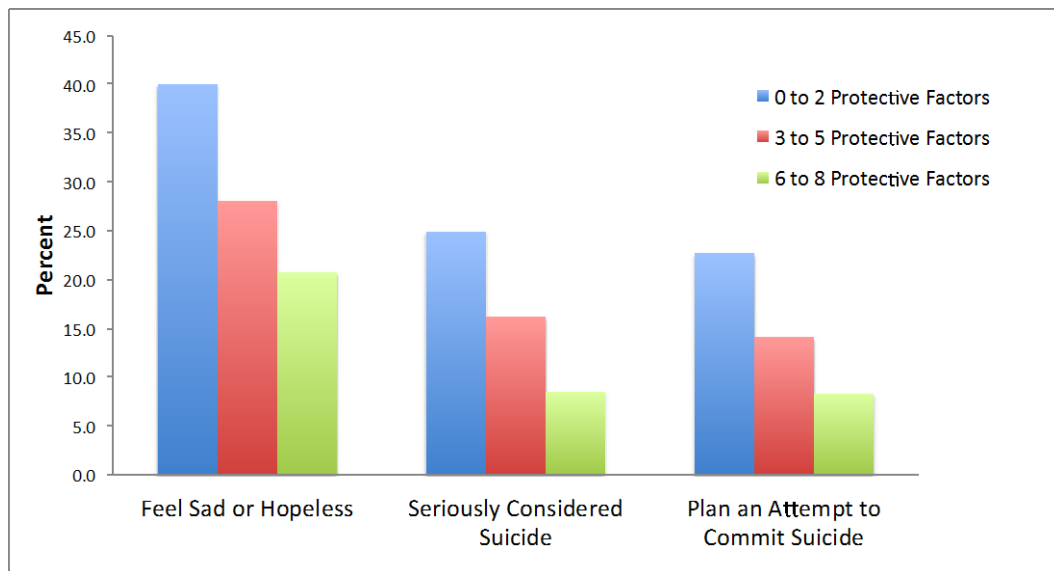


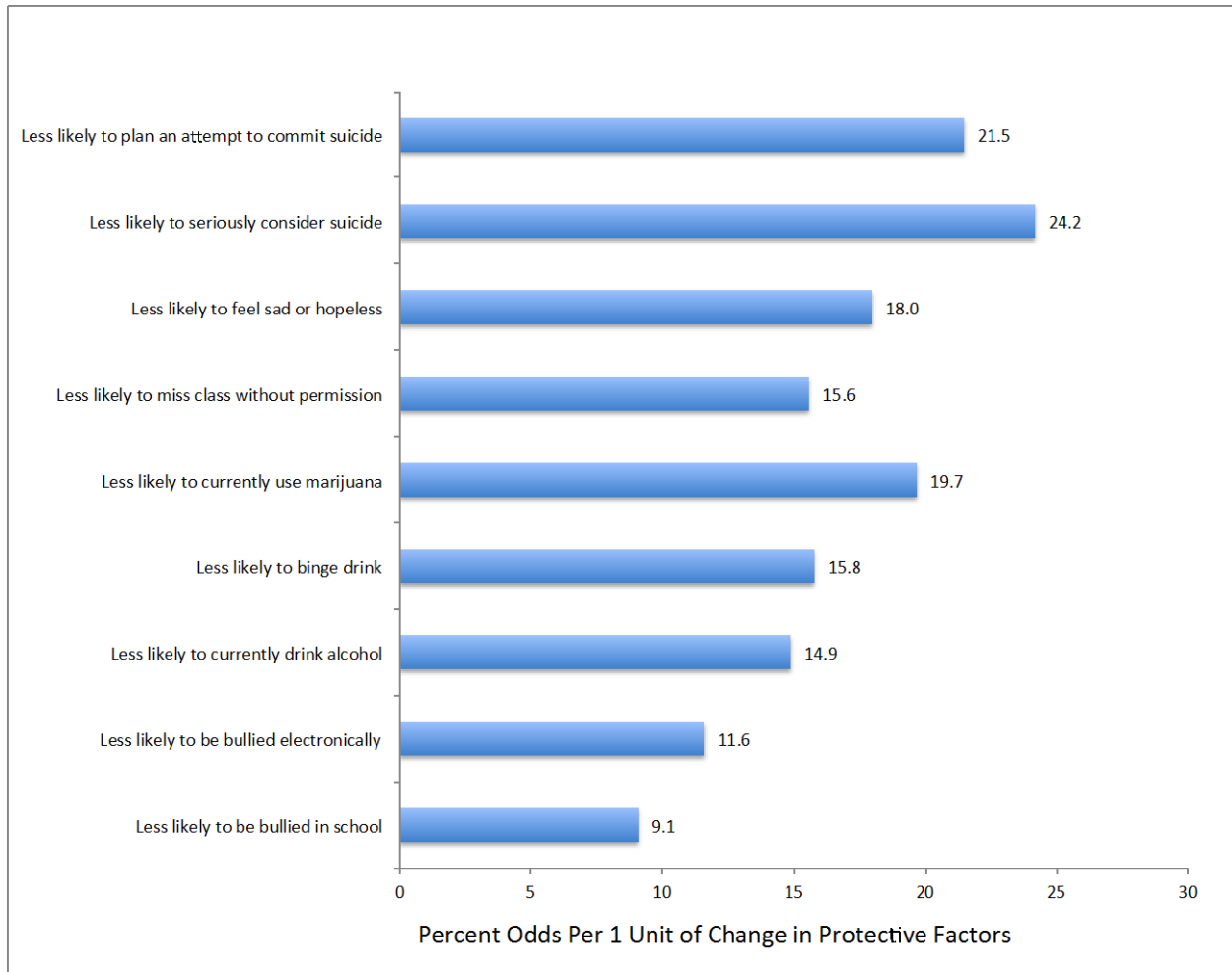
Figure 46. Graph showing the relationship between mental health status and suicide ideation and planned attempt and number of protective factors categorized into three group ranges



Relationship between the Number of Protective Factors, Risk Behaviors, Bullying Experience, and Mental Health Status and Suicide Ideation and Planned Attempt

Based on multiple regression analysis, the number of protective factors is significantly associated with all of the risk behaviors, bullying experience, mental health status, and suicide ideation and planned attempt, controlling for grade level and sex. For every 1 unit increase in the number of protective factors, students are 15% less likely to currently drink alcohol; 16% less likely to binge drink; 20% less likely to currently smoke marijuana; 16% less likely to miss class without permission; 9% less likely to be bullied in school; 12% less likely to be bullied electronically; 18% less likely to feel sad or hopeless; 24% less likely to seriously consider suicide; and 22% less likely to plan an attempt to commit suicide. For more details, see Figure 47.

Figure 47. Percent odds of engaging in risk behaviors, experiencing bullying, feeling sad or hopeless, seriously considering suicide, and planning an attempt to commit suicide with the number of protective factors as the independent variable and grade level and sex as control variables



Strength of Association of Each Protective Factor

The strength of association between each of the protective factors and each of the risk behaviors, bullying variables, and mental health and suicide variables are assessed, controlling for sex and grade level. This analysis is important to identify specific areas to focus on for positive youth development. Results of this analysis are summarized in Table 48 below.

Table 48. Summary of strength of association between each of the protective factors and each of the risk behaviors, bullying variables, and mental health and suicide variables

Protective Factors	Currently drink	Binge drinking	Currently use marijuana	Ever bullied in school	Ever electronically bullied	Miss class without permission	Feel sad or hopeless	Seriously considered commit suicide	Planned an attempt to commit suicide
Talking to parents about school everyday	32.0% less likely	33.7% less likely	39.1% less likely	Not significant	Not significant	31.5% less likely	26.2% less likely	34.9% less likely	30.9% less likely
Having 1 or more adults comfortable seeking help	Not significant	19.6% less likely	Not significant	28.3% less likely	37.9% less likely	26.9% less likely	32.7% less likely	48.0% less likely	48.9% less likely
Spending at least 1 hour/week volunteering at school or community ¹	18.1% less likely	20.5% less likely	32.6% less likely	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant
Participate in organized after school activities at least 1 day per week ²	Not significant	15.5% less likely	30.7% less likely	Not significant	Not significant	Not significant	Not significant	21.2% less likely	Not significant
Strongly agree/agree that they feel they matter to people in their community	18.9% less likely	16.7% less likely	34.7% less likely	32.6% less likely	Not significant	33.5% less likely	54.6% less likely	59.4% less likely	59.3% less likely
Strongly disagree/disagree that they are feeling alone	20.7% less likely	24.0% less likely	30.1% less likely	29.9% less likely	35.4% less likely	28.8% less likely	67.3% less likely	69.7% less likely	63.1% less likely
Strongly agree/agree that they have teachers that really care about them	50.8% less likely	45.8% less likely	45.2% less likely	41.1% less likely	38.3% less likely	44.2% less likely	37.4% less likely	47.7% less likely	37.8% less likely
Having school that has clear rules and consequences for their behavior	25.1% less likely	22.8% less likely	29.3% less likely	29.1% less likely	30.8% less likely	34.0% less likely	40% less likely	32.8% less likely	33.6% less likely

¹Appendix A shows the strength of association if this protective factor were changed to “spending at least 3 hours per week volunteering at school or community” like in the 2012 report (Garcia, 2012).

²Appendix A shows the strength of association if this protective factor were changed to “participate in organized after school activities at least 2 days per week” like in the 2012 report (Garcia, 2012).

As can be seen from the Table 48 above and Figure 48, Figure 49, and Figure 50 below, the two strongest protective factors (in descending order) that decrease the odds of current alcohol use, binge drinking, and current marijuana use are having teachers that care about them and having regular talks with their parents about school. As for the two strongest protective factors that decrease the odds of absenteeism (see Table 47 and Figure 51), they are having teachers that care about their students and having school that has clear rules and consequences for student behaviors.

Figure 48. Graph showing the strength of association of each protective factor with current alcohol use

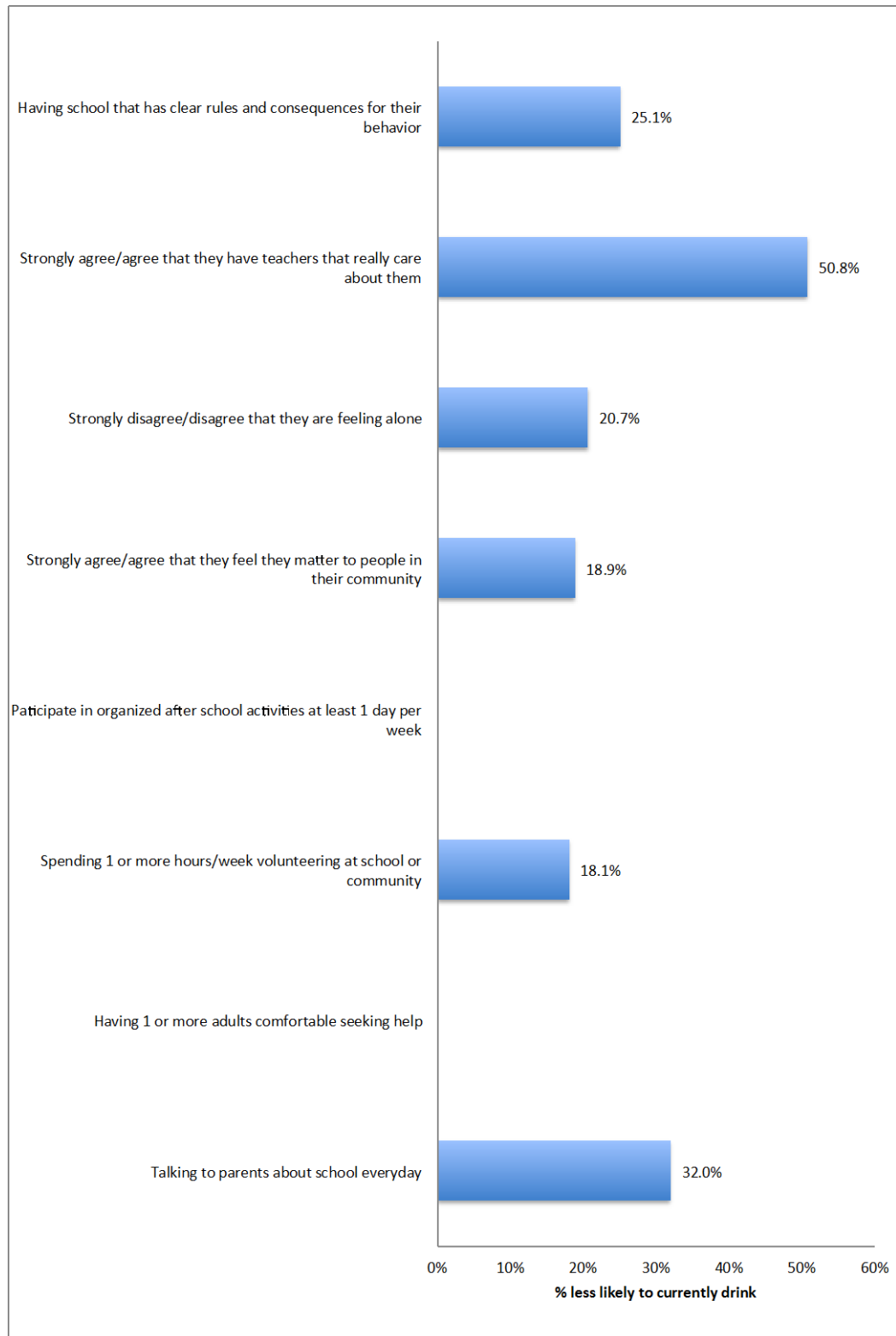


Figure 49. Graph showing the strength of association of each protective factor with binge drinking

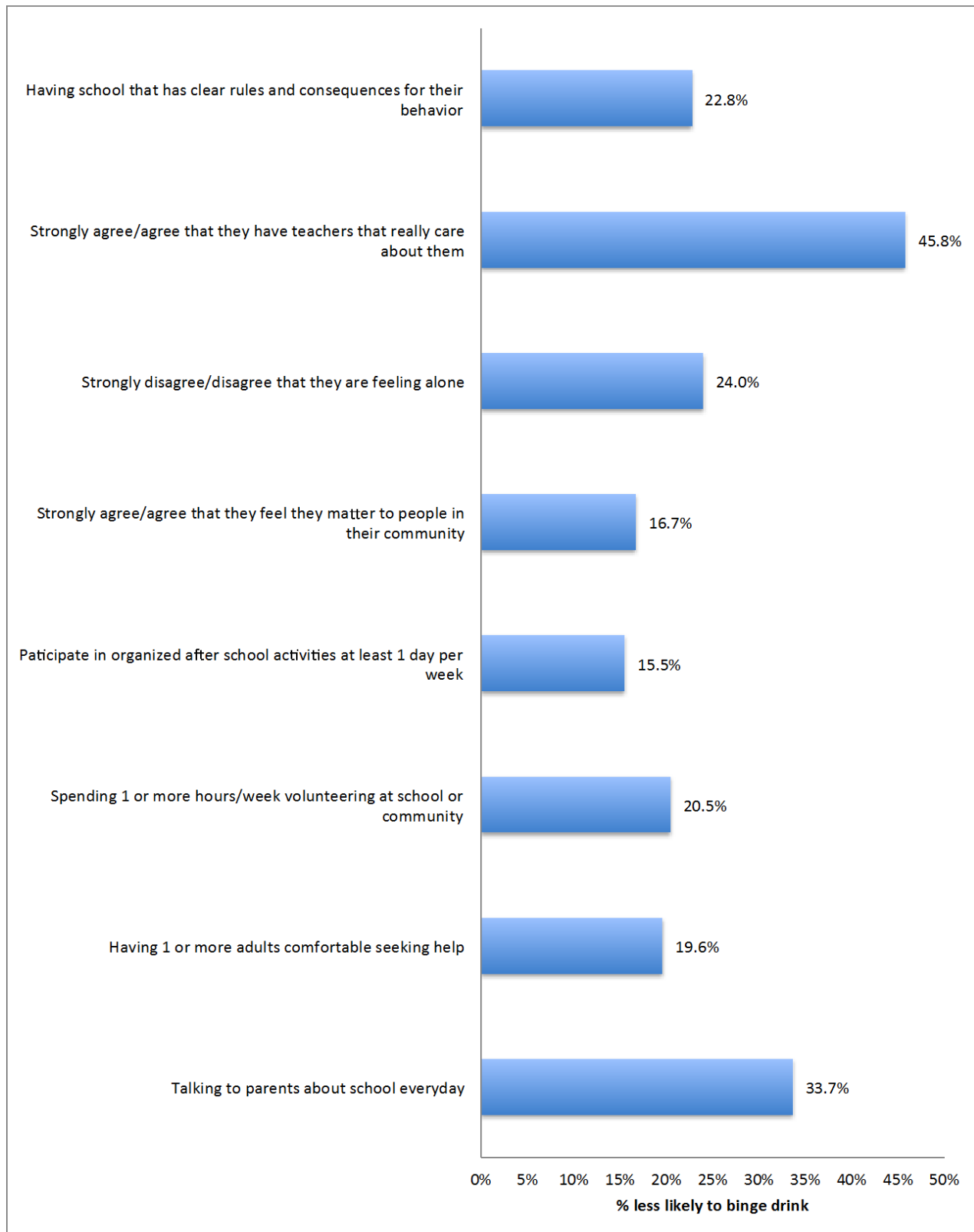


Figure 50. Graph showing the strength of association of each protective factor with current marijuana use

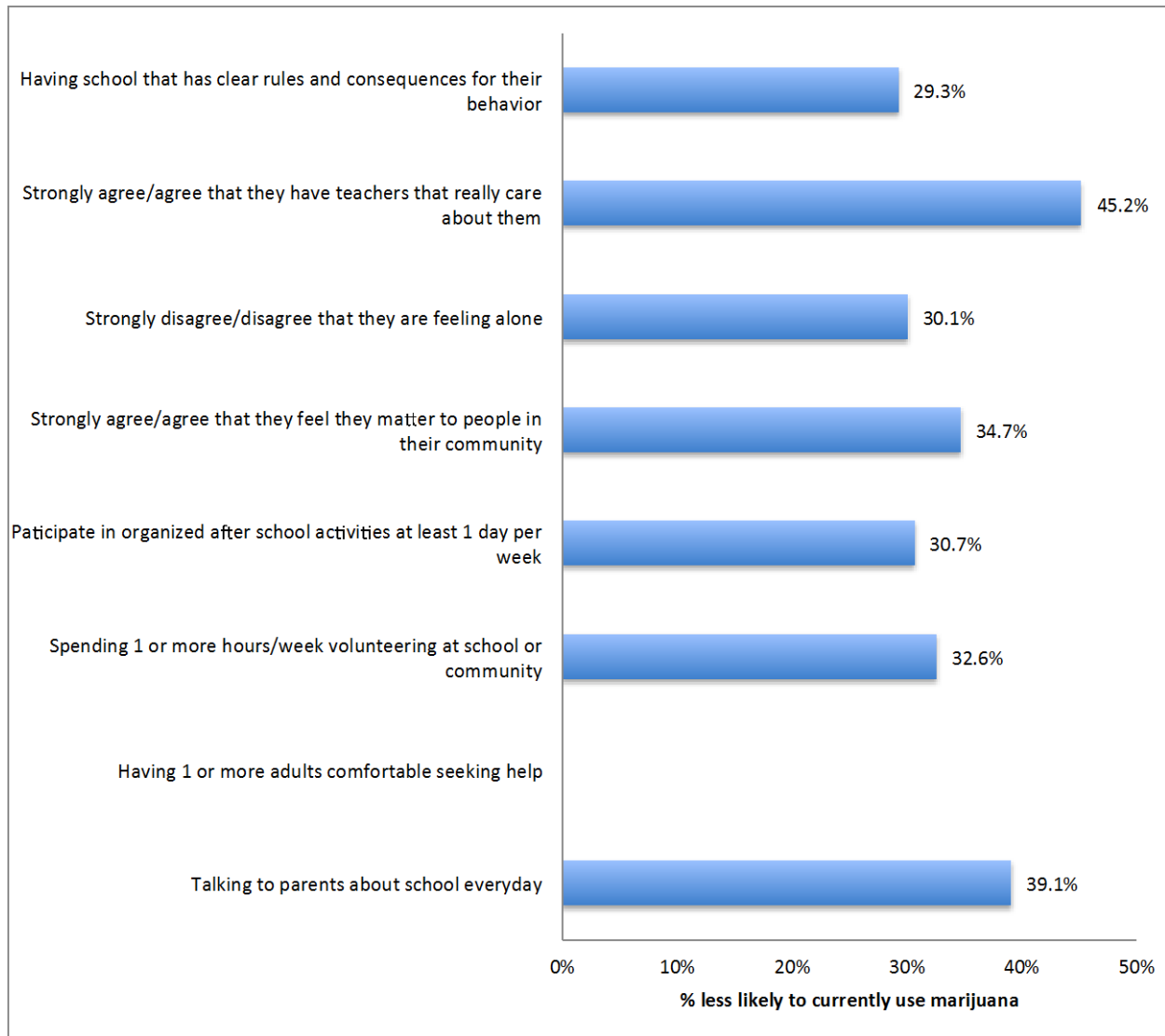
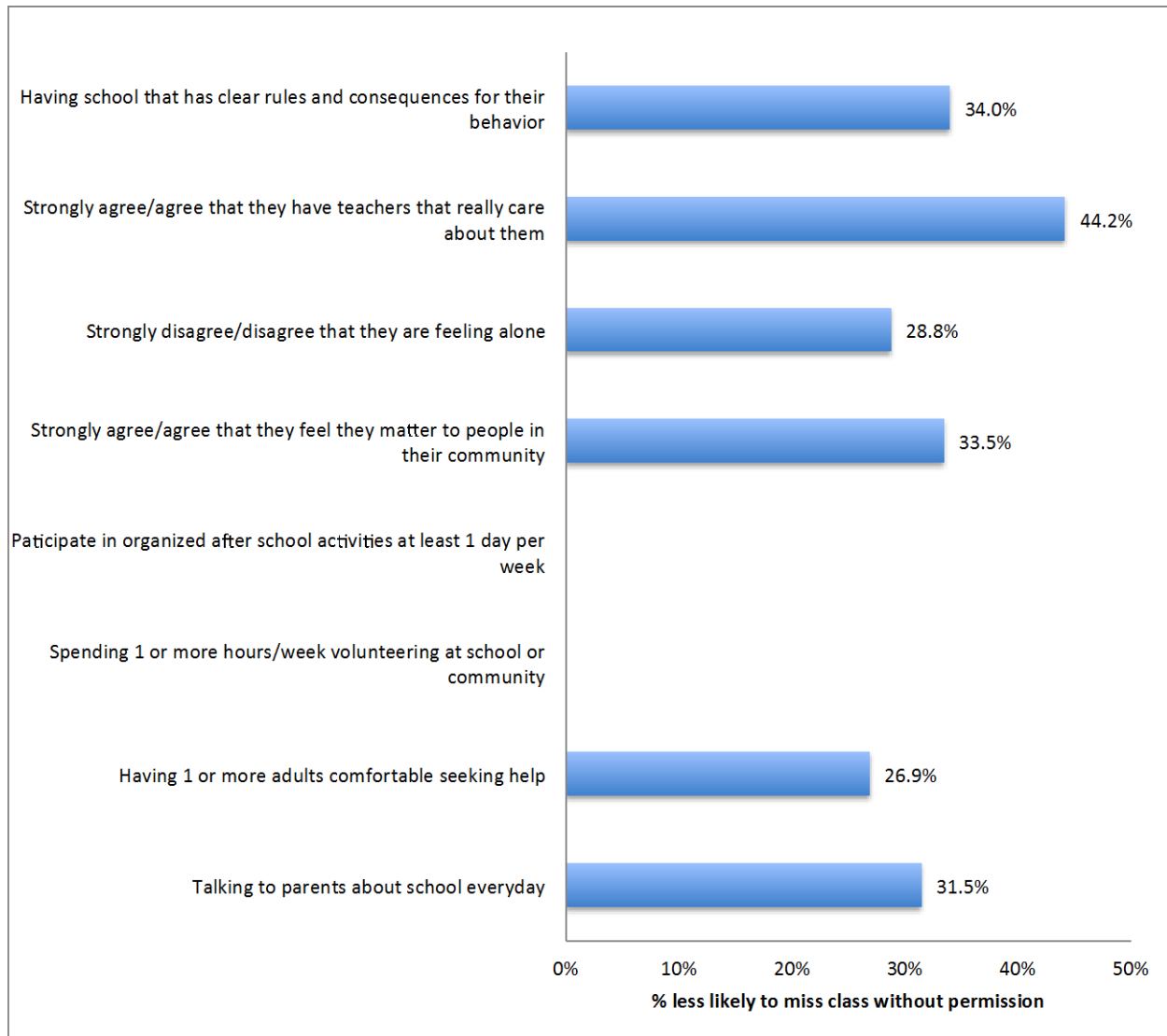


Figure 51. Graph showing the strength of association of each protective factor with missing class/school without permission



In terms of bullying experience, the two strongest protective factors that decrease the odds of being bullied in school are having teachers that care about them and the feeling that they matter to people in their community (see Table 48 and Figure 52). The strongest protective factors that decrease the odds of being electronically bullied are having teachers that care about them and having one or more supportive adults (see Table 48 and Figure 53).

Figure 52. Graph showing the strength of association of each protective factor with being bullied in school

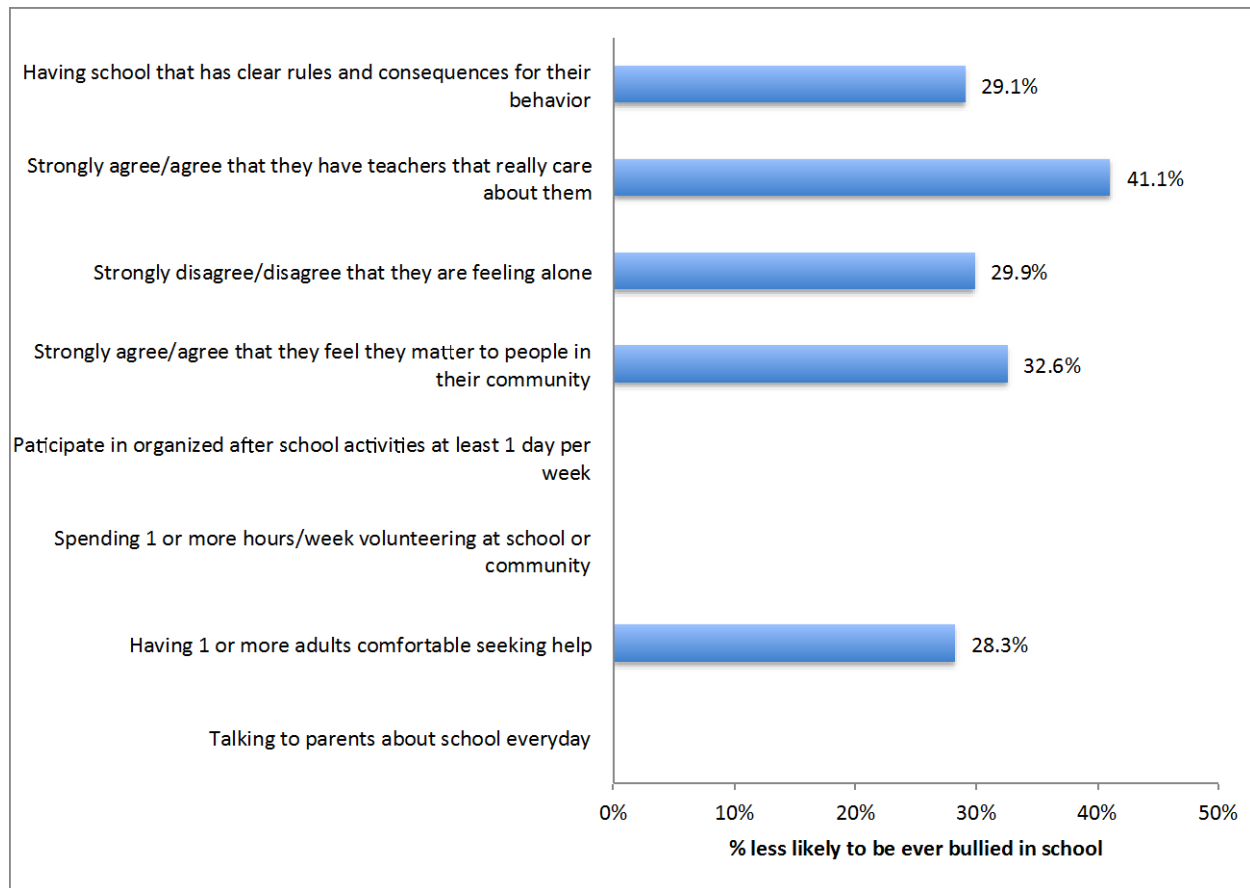
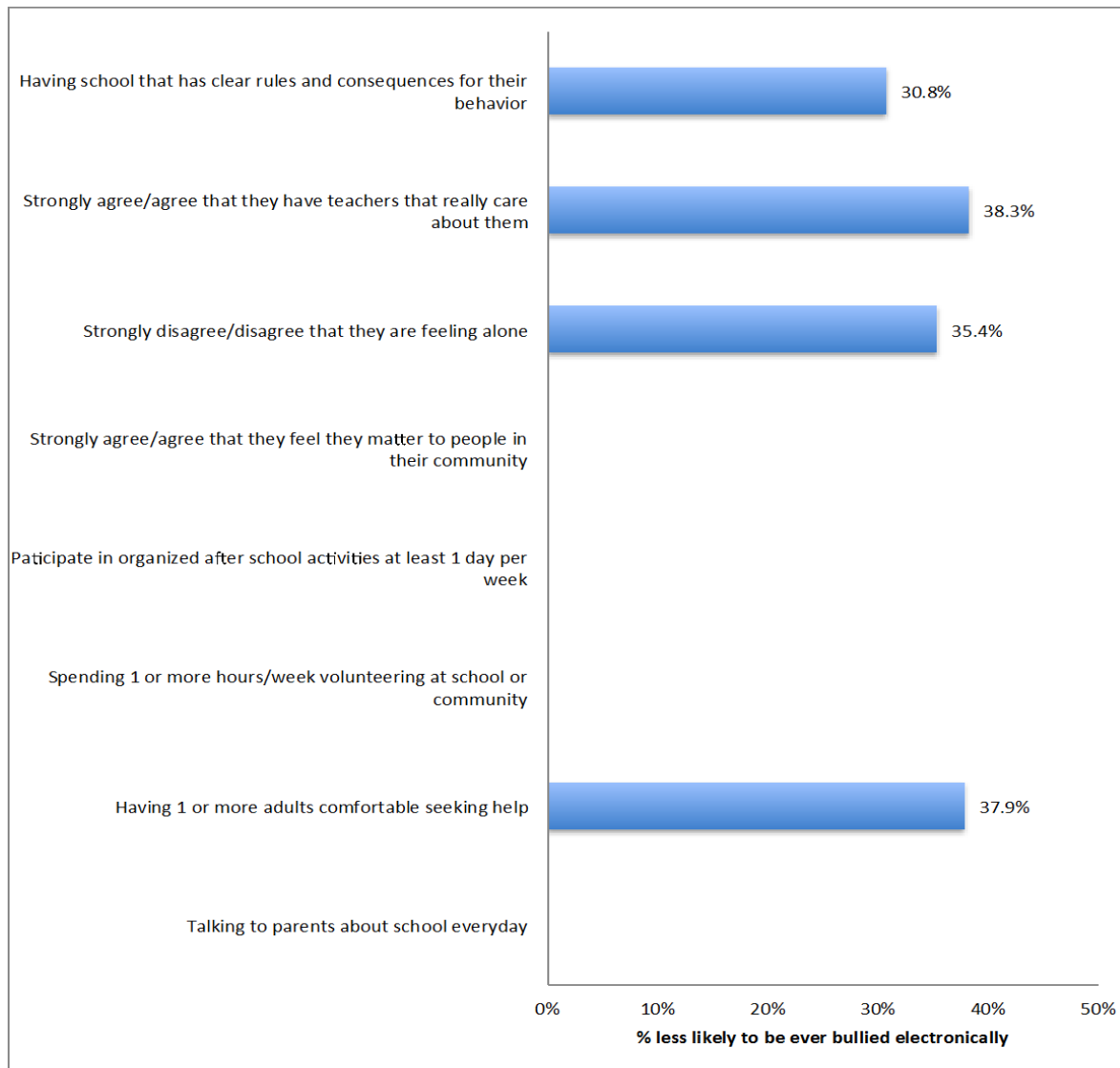


Figure 53. Graph showing the strength of association of each protective factor with being bullied electronically



With regard to the mental health and suicide variables, the two strongest protective factors that decrease the likelihood of feeling sad or hopeless, seriously considering suicide, and planning an attempt to commit suicide include not feeling alone and feeling that people matter in their community (see Table 48, Figure 54, and Figure 55).

Figure 54. Graph showing the strength of association of each protective factor with feeling sad or hopeless

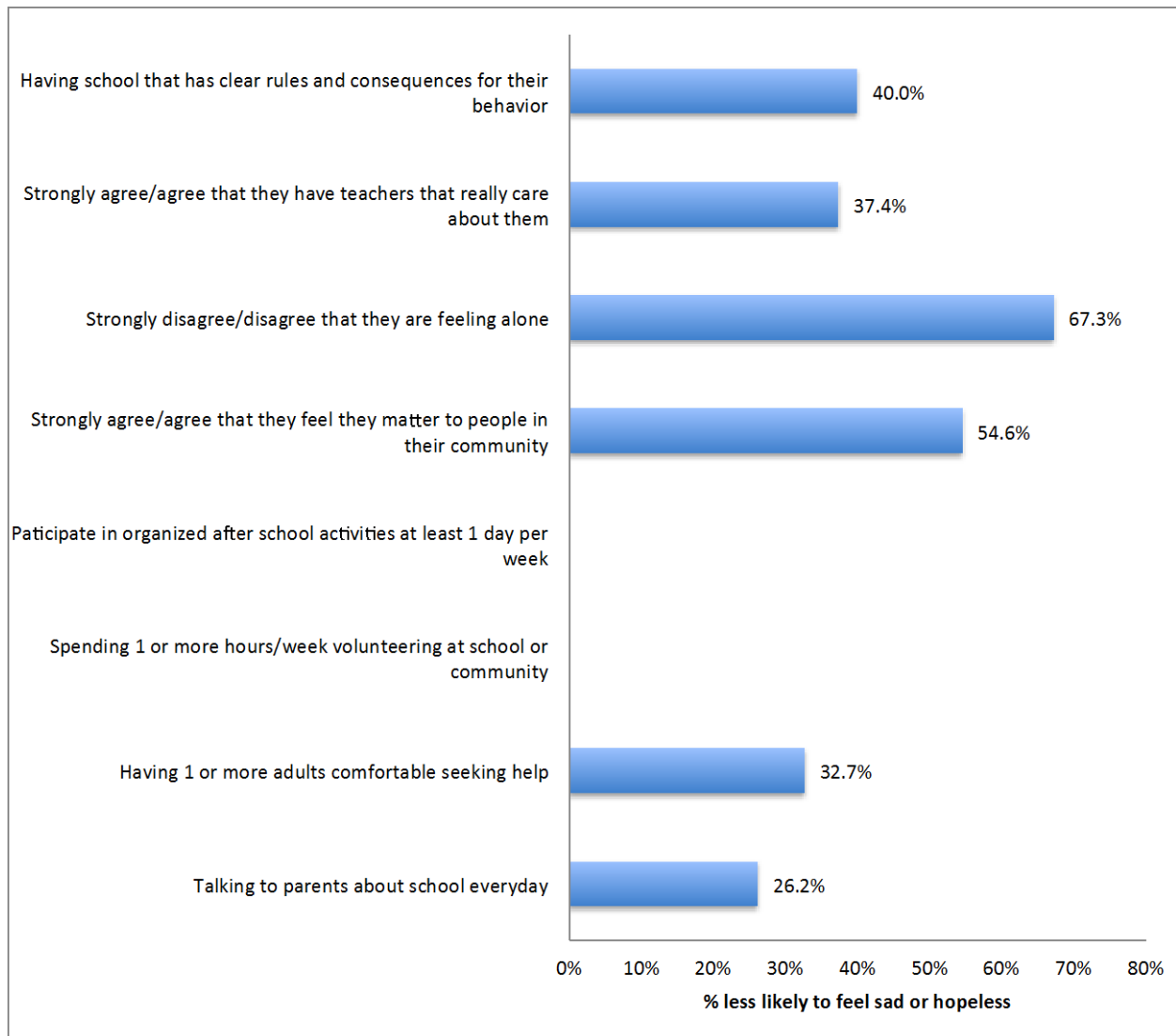


Figure 55. Graph showing the strength of association of each protective factor with seriously considering suicide

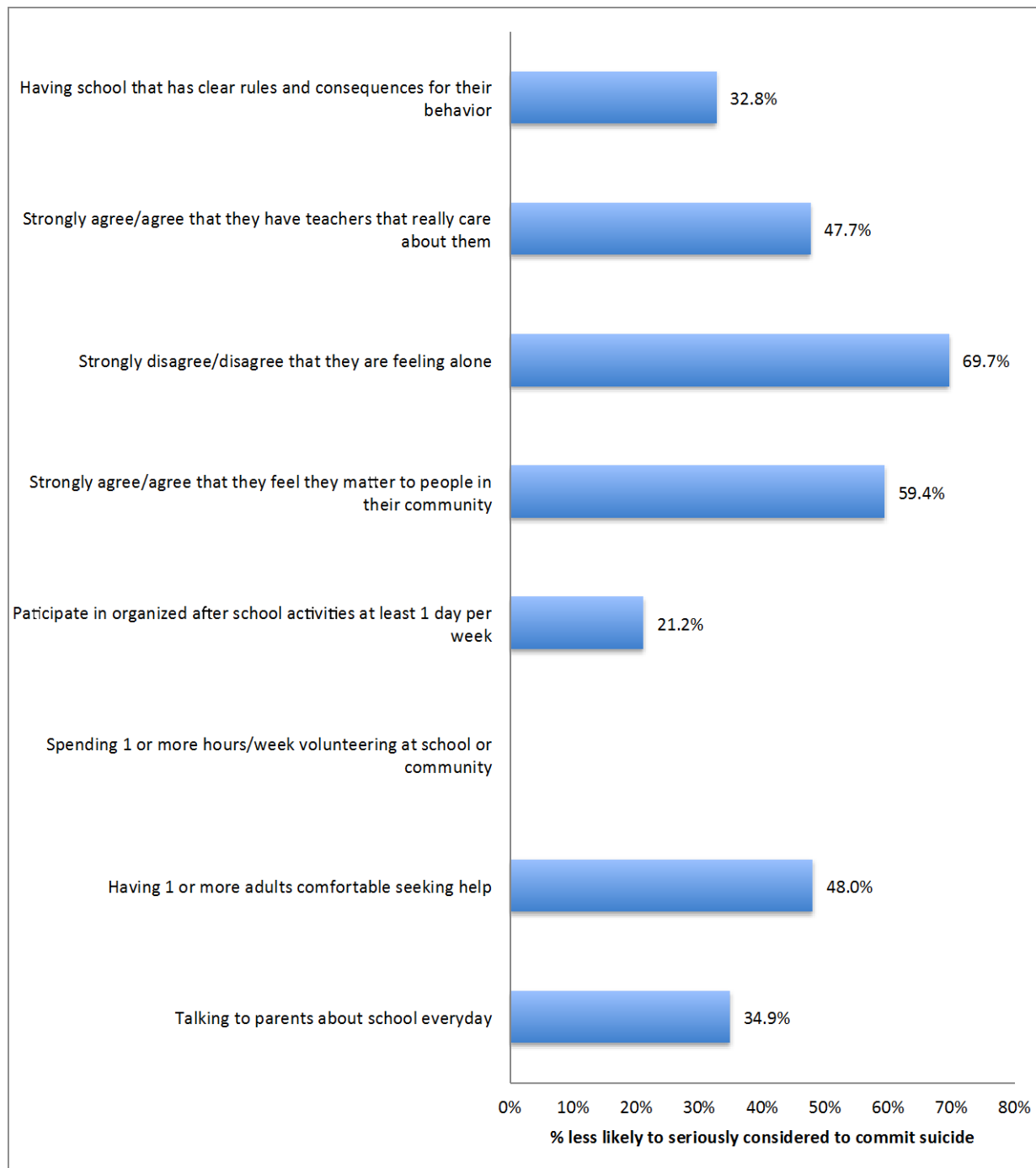
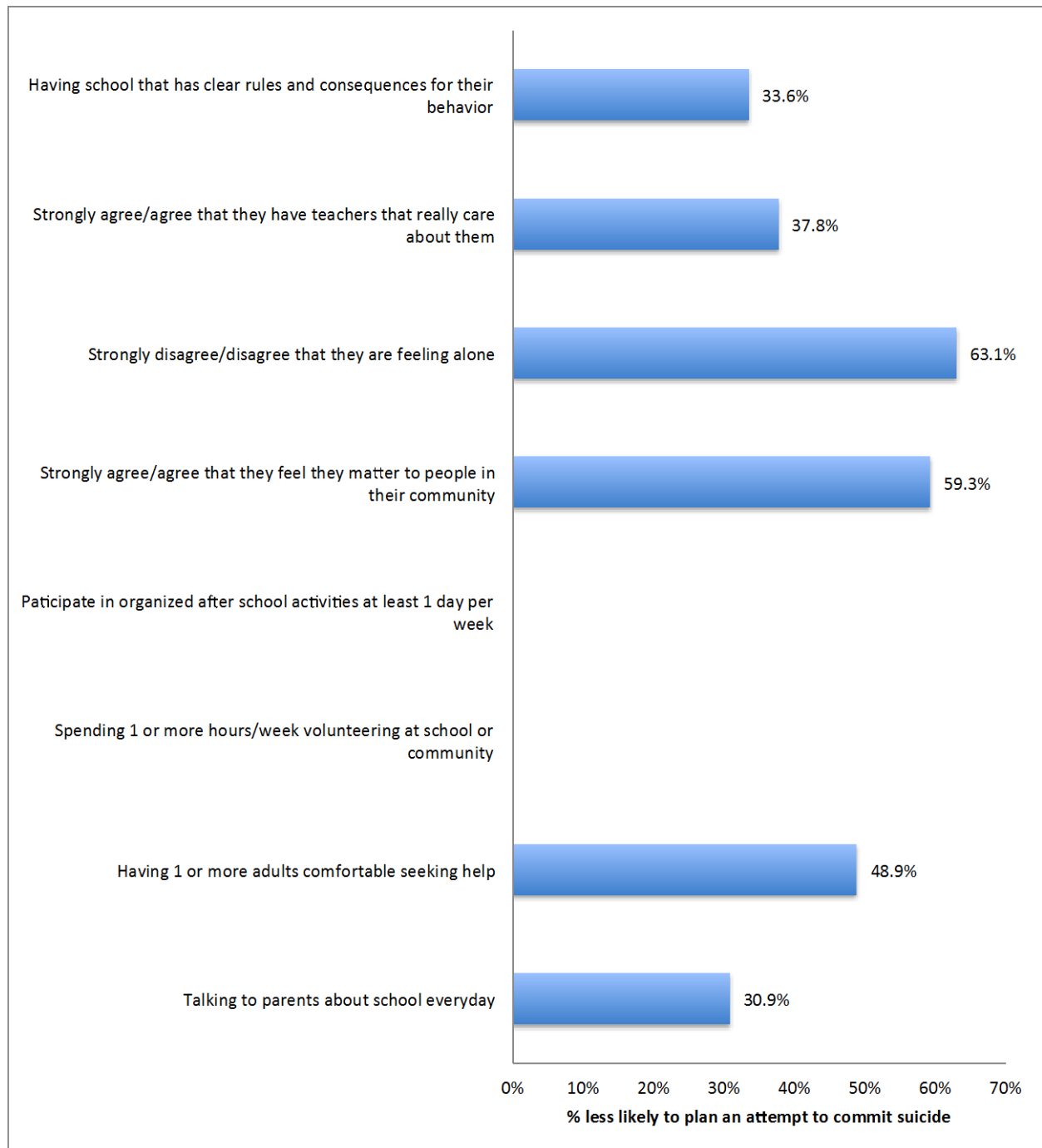


Figure 56. Graph showing the strength of association of each protective factor with planning an attempt to commit suicide



CONCLUSION AND RECOMMENDATIONS

In the past ten years, the rates of several of the risk behaviors among Anchorage high school students have been significantly improving. Rates of ever drinking, drinking prior to age 13, current drinking, and binge drinking have all significantly decreased from 2003 to 2013. Rates of ever using marijuana, marijuana use prior to age 13, and current marijuana use are also on a downward trend, although not by significant amounts. Ever use of prescription drugs without a prescription from a health care provider has significantly decreased from 2009 to 2013, as well; and while current prescription drug use has not significantly changed since 2011, only around 8% of Anchorage students report doing this. Finally, the proportion of students who have ever used cocaine, solvents, heroin, methamphetamines, or ecstasy have also been decreasing in the past ten years; and while the decrease in rates have not been statistically significant, its current rate is only around 13%.

In terms of perceptions regarding drinking alcohol and smoking marijuana, most Anchorage high school students believe that these behaviors are harmful, that their parents disapprove of such activities, and that these activities are not cool. This finding is important because this study also shows that students who have negative perceptions about alcohol and marijuana are less likely to engage in such activities.

With regards to bullying experience, feeling of sadness and hopelessness, and suicide ideation and attempt, there have been no significant increases or decreases in rates. Students reporting being bullied in school and being bullied electronically the past 12 months have remained unchanged at around 20% and 15%, respectively. Anchorage youth reporting feeling of sadness and hopelessness have remained around 26%. The proportion of students reporting having seriously considered suicide is around 16%, while the proportion of students who planned an attempt to commit suicide is around 14%. About 9% of students have reported attempting suicide, and less than 5% have attempted suicide that led to injury, poison, or overdose. While rates of bullying, feelings of sadness and hopelessness, and suicide ideation and attempt seem to be low, it is important to note that these items are generally under reported in self-administered surveys like YRBS, as they are not socially desirable experiences.

The rates of several of the protective factors have not significantly changed in the past 10 years. The majority of students have the appropriate family support, have sufficient number of supportive adult relationships, have been participating in meaningful opportunities, and have appropriate community support and environment. On the other hand, it is important to note that there is a decreasing trend in the proportion of students reporting spending at least an hour each week doing volunteer work (from about 66% in 2003 to 49% in 2013). But on a positive note, the proportion of students who report feeling alone has significantly decreased from 66% in 2003 to 57% in 2013.

On average, Anchorage youth have four to five protective factors. This is a positive finding in that this study also shows that rates of the risk behaviors, bullying experience, feeling of sadness and hopelessness, and suicide ideation and attempt significantly decrease when youth

have more than three protective factors. The relationship of these protective factors to the aforementioned risk behaviors and conditions is significant even after controlling for sex and grade level. Family, community, and school can all be a part in making a positive change in the life of a youth. This study shows that for every one unit increase in the number of protective factors, youth are 15% less likely to currently drink alcohol; 16% less likely to binge drink; 20% less likely to currently smoke marijuana; 16% less likely to miss class or school without permission; 9% less likely to be bullied in school; 12% less likely to be bullied electronically; 18% less likely to feel sad or hopeless; 24% less likely to seriously consider suicide; and 22% less likely to plan an attempt to commit suicide. Finally, when the strength of association between each of the protective factors and risk behaviors and conditions are assessed, this study finds that family relationship and school environment are the strongest protective factors that decrease the likelihood of alcohol, drug use, and absenteeism, while community, adult supportive relationships, and school environment are the strongest protective factors that decrease the likelihood of bullying experience, feeling of sadness and hopelessness, and suicide ideation and attempt.

This study has four key recommendations. First, given that youth perception of alcohol and marijuana has significant association with the actual use, it is important to make students constantly aware about the harmful consequences of these substances. At home, in school, and in the community, children and youth need to be educated about the dangers of alcohol and drugs. Whenever possible, it is also important to hold anti-drug and anti-alcohol campaigns in school and in the community, as well as develop counter marketing campaigns that debunk positive images associated with drugs and alcohol. A second recommendation of this study is to continue find ways to support and encourage parents to keep talking to their kids every day. Programs like AYDC's Start the Conversation Project that encourage and teach parents how to talk with their middle school children during mealtime is a good example of ways to improve and increase parent-child communication. Additionally, this study also recommends supporting teachers in providing caring and encouraging environments for their students. This could be achieved, for example, by addressing the topic of effective teacher-student dialogue and relationship-building through teacher in-service trainings and workshops. Schools also need to make sure that students have a clear understanding of their policies and the consequences for violating their policies. One of the ways this could be achieved is by having school policies disseminated in multiple ways, including distributing a handbook that details school policies for students to take home, posting policies around the school that are visible to students, and even going over the policies with students in class or in general assemblies. Finally, the community, as a whole can also be a part in making a positive change in the life of a youth. Community members should consider mentoring youth. Youth agencies like Boys and Girls Clubs and Big Brothers Big Sisters have programs where adults can get involved in mentoring youth. Community members should also find ways in creating a community environment where youth know they are not alone and that they are valued and cared about. Some of the ways to address this are by volunteering and contributing resources to and participating in activities of youth-serving organizations. In the final analysis, it is through the collective support of family, school, and community that can help lead youth to a healthy and successful future.

REFERENCES

- Garcia, G. M., & Sledge, S. (2012). Anchorage United for Youth 2011 Youth Risk Behavior Survey trends report. Anchorage, AK: United Way of Anchorage.
- Garcia, G. M. (2012). Exploring the relationship between protective factors, risk behaviors, and school engagement factors among Anchorage high school students. Anchorage, AK: United Way of Anchorage.

APPENDIX

TABLE 49. Summary of strength of association between each of the protective factors (volunteering at least 3 hours per week and participating in after school activities at least 2 days per week) and each of the risk behaviors, bullying variables, and mental health and suicide variables

Protective Factors	Currently drink	Binge drinking	Currently use marijuana	Ever bullied in school	Ever electronically bullied	Miss class without permission	Feel sad or hopeless	Seriously considered commit suicide	Planned an attempt to commit suicide
Spending at least 3 hours/week volunteering at school or community	18% less likely	30.2% less likely	28.9% less likely	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant
Participate in organized after school activities at least 2 days per week	18.4% less likely	Not significant	39.4% less likely	Not significant	Not significant	27.6% less likely	Not significant	Not significant	Not significant

Summary:

If the protective factor “spending at least 1 hour per week volunteering at school or community” were changed to “spending at least 3 hours per week volunteering at school or community”, the specific risk behaviors and conditions significantly affected do not change and the strength of association with these risk behaviors and conditions are not significantly different. On the other hand, if the protective factor “participate in organized after school activities at least 1 day per week” were changed to “participate in organized after school activities at least 2 days per week”, different risk behaviors and conditions are affected. Whereas the former protective factor significantly decreases the likelihood of binge drinking, current marijuana use, and seriously considering committing suicide, the latter significantly decreases the likelihood for binge drinking, current marijuana use, and absenteeism.