

2018



Substance Abuse in Minnesota:
A State Epidemiological Profile
Section 6. Mental Health and Shared Factors

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**for the Minnesota Department of Human Services, Alcohol
and Drug Abuse Division**

Substance Abuse in Minnesota

Section 6. Mental Health and Shared Factors

The 2018 Minnesota State EpiProfile is divided into eight parts:

1. Introduction (which includes a profile overview, population snapshot, and acknowledgements)
2. Executive Summary
3. Alcohol: Use, Consequences, and Intervening Variables
4. Tobacco and Nicotine: Use, Consequences, and Intervening Variables
5. Drugs: Use, Consequences, and Intervening Variables
6. Mental Health and Shared Factors
7. Socioeconomic Factors
8. Appendix (which includes technical notes and data sources)

Substance Abuse in Minnesota: Mental Health and Shared Factors

Suicide and Mental Illness

About the Indicator

Suicide is closely associated with alcohol and drug abuse. The International Classification of Diseases (ICD-10) measures all suicides, many of which are attributable to substance abuse.

The Centers for Disease Control and Prevention (CDC) provides a measure of Alcohol-Attributable Fractions (AAFs). AAFs are estimates based on direct observations about the relationship between alcohol and a given health outcome. The AAF for suicide for both males and females is 23%.

In order to provide comprehensive data on suicides, both measures are presented.

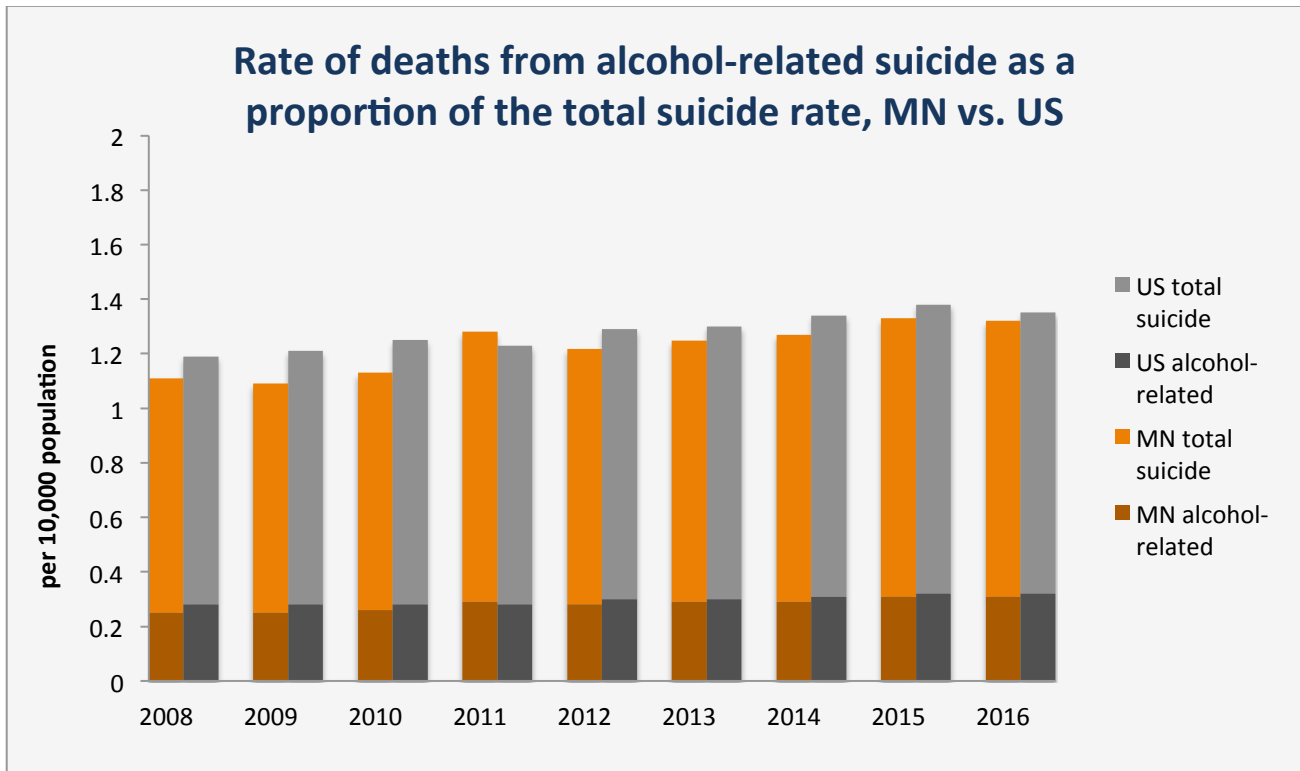
Data Source(s)

Minnesota Center for Health Statistics, Minnesota Department of Health (MDH), CDC Wonder Compressed Mortality Data, the Alcohol-Related Disease Impact (ARDI), and National Survey on Drug Use and Health (NSDUH)

Section Summary

- Minnesota's suicide rate is very close to the national average.
- Males are significantly more likely than females to commit suicide.

Data Source: Minnesota Department of Health, CDC Wonder, ARDI

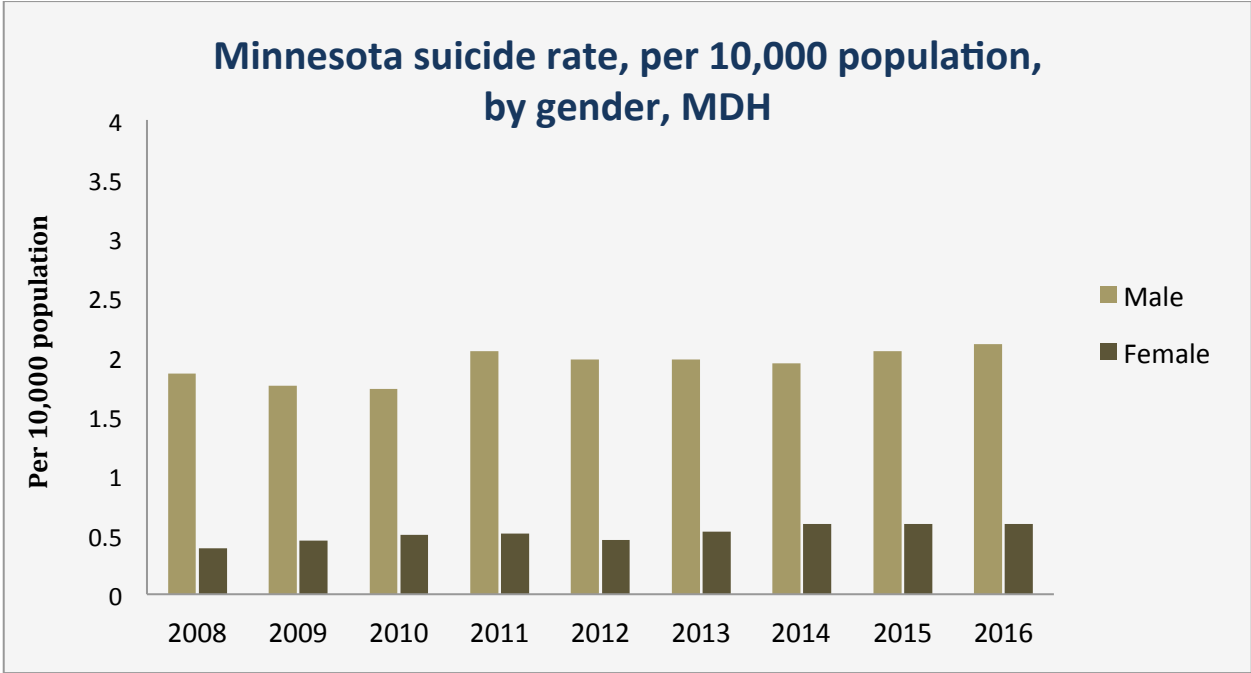


Deaths from Alcohol-Related Suicide per 10,000 Population, CDC Wonder

| Minnesota | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Deaths from alcohol-related* suicide | 137 | 134 | 139 | 157 | 151 | 155 | 157 | 168 | 171 |
| Rate per 10,000 population | 0.25 | 0.25 | 0.26 | 0.29 | 0.28 | 0.29 | 0.29 | 0.31 | 0.31 |
| United States | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| Deaths from alcohol-related* suicide | 8,273 | 8,473 | 8,811 | 8,806 | 9,322 | 9,444 | 9,838 | 10,164 | 10,332 |
| Rate per 10,000 population | 0.28 | 0.28 | 0.28 | 0.28 | 0.3 | 0.3 | 0.31 | 0.32 | 0.32 |
| MN:US rate ratio | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| Deaths from alcohol-related* suicide | 0.89 | 0.89 | 0.93 | 1.04 | 0.93 | 0.97 | 0.95 | 0.97 | 0.97 |

* Alcohol-related suicide data are calculated using the AAF for suicide, 23%

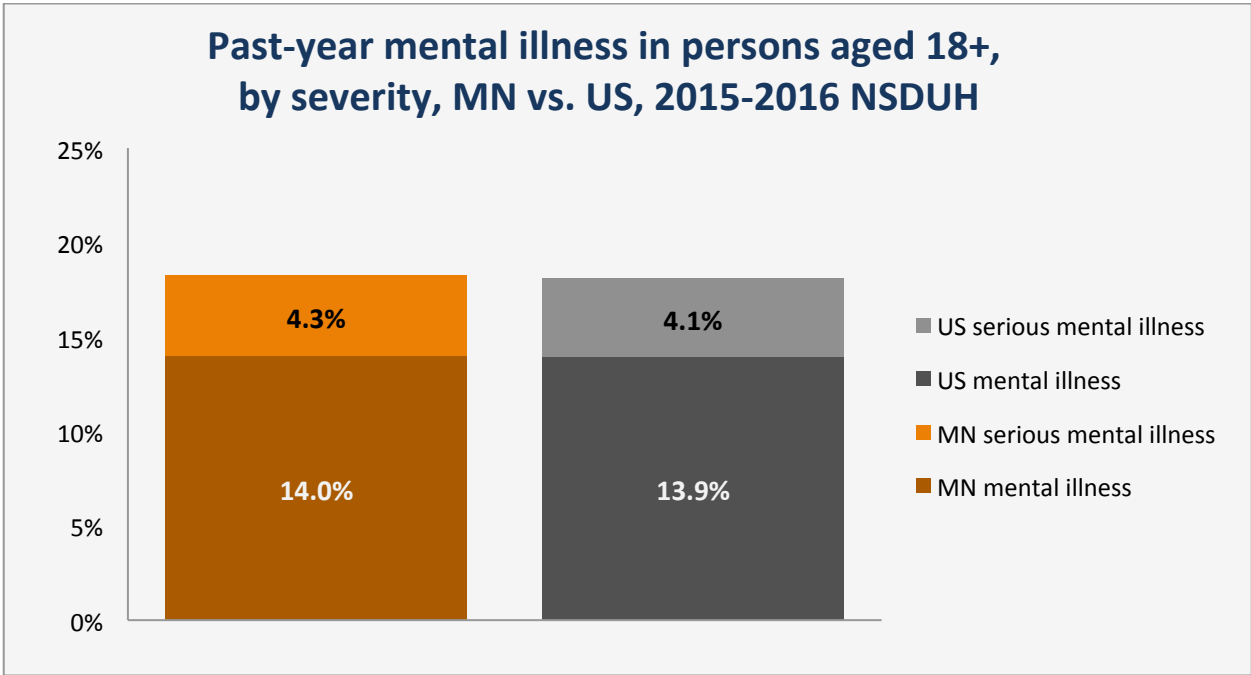
Data Source: Minnesota Department of Health



Total Minnesota Suicide Deaths by Gender, Number, and Age-Adjusted Rate per 10,000 Population, MDH

| | | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|--------|--------|------|------|------|------|------|------|------|------|------|
| Male | Number | 490 | 468 | 464 | 544 | 530 | 532 | 522 | 563 | 581 |
| | Rate | 1.88 | 1.79 | 1.76 | 2.05 | 1.98 | 1.98 | 1.95 | 2.05 | 2.11 |
| Female | Number | 105 | 115 | 139 | 137 | 125 | 144 | 161 | 163 | 164 |
| | Rate | 0.4 | 0.43 | 0.52 | 0.51 | 0.46 | 0.53 | 0.59 | 0.59 | 0.59 |

Data Source: NSDUH



| Serious Mental Illness in the Past Year, NSDUH | | | | | |
|--|-----------|-----------|-----------|-----------|-----------|
| MN | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 | 2015-2016 |
| 18+ | 3.90% | 4.20% | 4.50% | 4.3% | 4.3% |
| 18-25 | 4.40% | 4.30% | 5.00% | 5.5% | 6.0% |
| 26+ | 3.80% | 4.20% | 4.40% | 4.2% | 4.0% |
| US | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 | 2015-2016 |
| 18+ | 4.00% | 4.10% | 4.20% | 4.1% | 4.1% |
| 18-25 | 4.00% | 4.20% | 4.50% | 4.9% | 5.5% |
| 26+ | 4.00% | 4.10% | 4.10% | 3.9% | 3.9% |
| MN:US | 2011-2012 | 2011-2012 | 2013-2014 | 2014-2015 | 2015-2016 |
| 12+ | 0.98 | 1.02 | 1.07 | 1.05 | 1.05 |

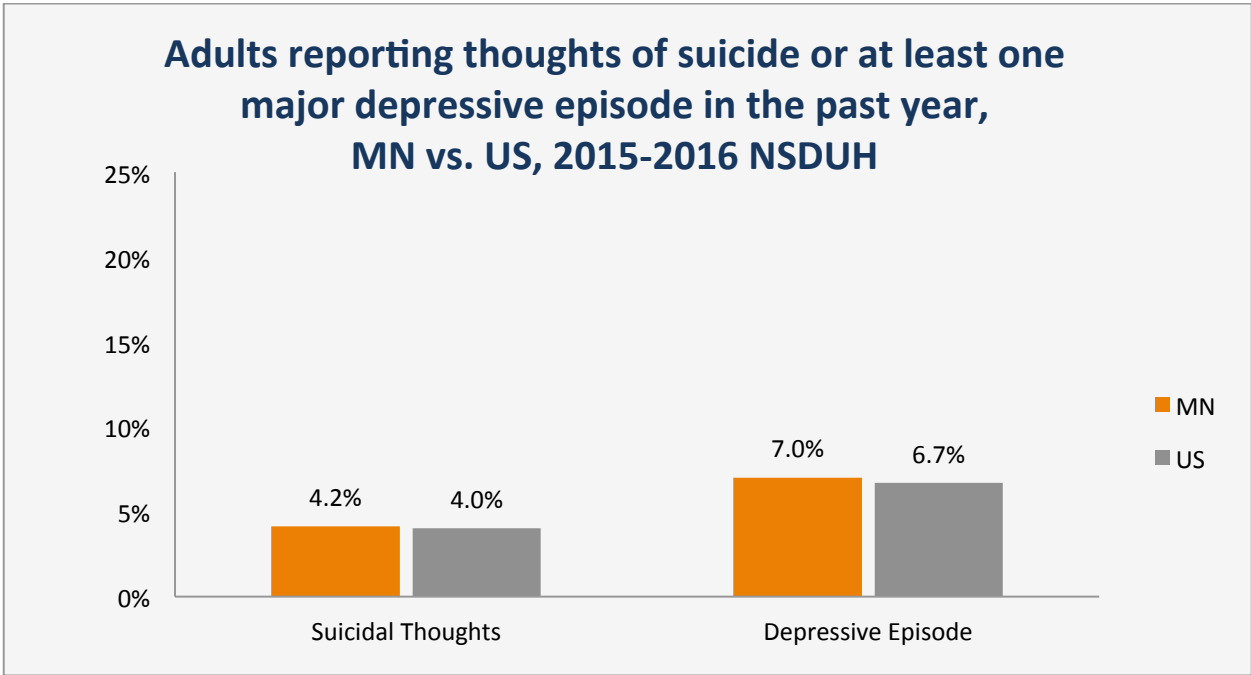
Mental Health and Shared Factors

Data Source: NSDUH

| Any Mental Illness in the Past Year, NSDUH | | | | | |
|--|-----------|-----------|-----------|-----------|-----------|
| MN | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 | 2015-2016 |
| 18+ | 17.2% | 18.0% | 19.7% | 18.8% | 18.2% |
| 18-25 | 20.1% | 19.8% | 21.3% | 22.6% | 24.5% |
| 26+ | 16.7% | 17.7% | 19.4% | 18.2% | 17.2% |
| US | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 | 2015-2016 |
| 18+ | 18.2% | 18.5% | 18.3% | 18.0% | 18.1% |
| 18-25 | 19.1% | 19.5% | 19.8% | 20.9% | 21.9% |
| 26+ | 18.0% | 18.4% | 18.1% | 17.5% | 17.4% |
| MN:US | 2011-2012 | 2011-2012 | 2013-2014 | 2014-2015 | 2015-2016 |
| 12+ | 0.95 | 0.97 | 1.08 | 1.04 | 1.01 |

| Had Serious Thoughts of Suicide in the Past Year, NSDUH | | | | | |
|---|-----------|-----------|-----------|-----------|-----------|
| MN | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 | 2015-2016 |
| 18+ | 3.6% | 3.9% | 4.2% | 4.1% | 4.2% |
| 18-25 | 7.3% | 7.1% | 7.4% | 8.2% | 8.8% |
| 26+ | 3.0% | 3.4% | 3.7% | 3.4% | 3.4% |
| US | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 | 2015-2016 |
| 18+ | 3.8% | 3.9% | 3.9% | 4.0% | 4.0% |
| 18-25 | 7.0% | 7.3% | 7.4% | 7.9% | 8.6% |
| 26+ | 3.2% | 3.3% | 3.3% | 3.3% | 3.3% |
| MN:US | 2011-2012 | 2011-2012 | 2013-2014 | 2014-2015 | 2015-2016 |
| 12+ | 0.95 | 1.00 | 1.08 | 1.03 | 1.05 |

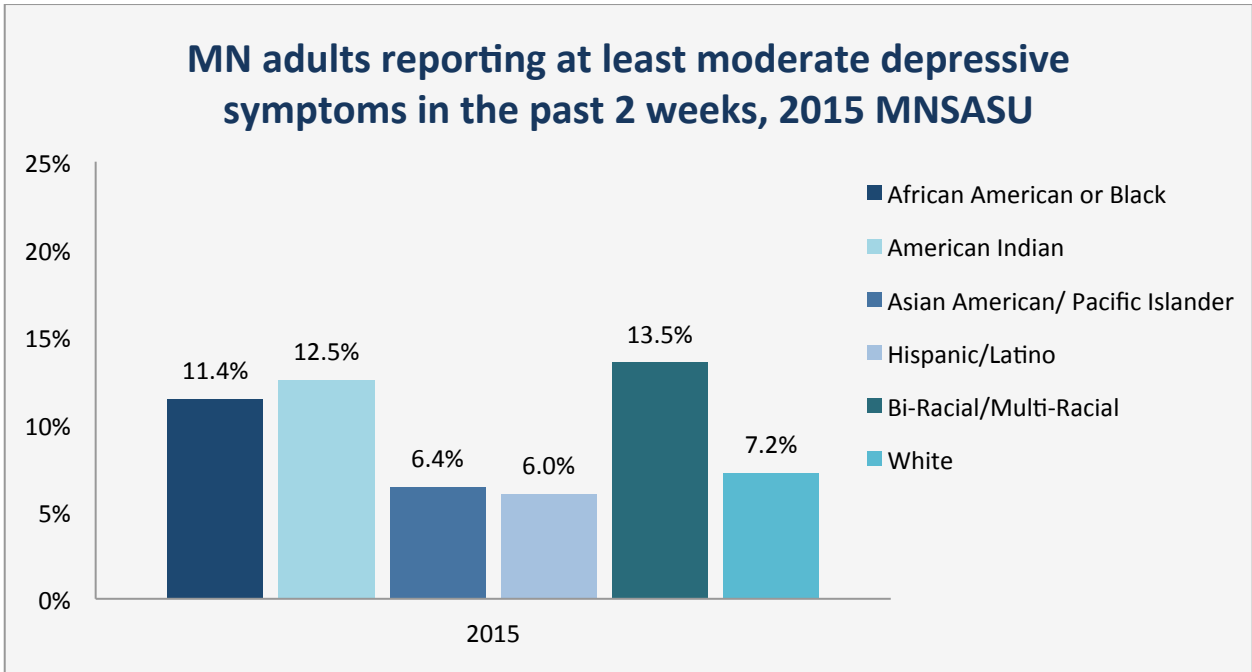
Data Source: NSDUH



| At Least 1 Major Depressive Episode in the Past Year, NSDUH | | | | | |
|---|-----------|-----------|-----------|-----------|-----------|
| MN | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 | 2015-2016 |
| 18+ | 6.1% | 6.6% | 7.3% | 7.4% | 7.0% |
| 12-17 | 8.3% | 8.2% | 11.0% | 12.6% | 13.4% |
| 18-25 | 8.8% | 8.8% | 10.1% | 9.8% | 11.1% |
| 26+ | 5.7% | 6.2% | 6.8% | 7.0% | 6.4% |
| US | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 | 2015-2016 |
| 18+ | 6.7% | 6.8% | 6.6% | 6.6% | 6.7% |
| 12-17 | 8.7% | 9.9% | 11.0% | 11.9% | 12.6% |
| 18-25 | 8.6% | 8.8% | 9.0% | 9.8% | 10.6% |
| 26+ | 6.4% | 6.4% | 6.2% | 6.1% | 6.1% |
| MN:US | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 | 2015-2016 |
| 12+ | 0.91 | 0.97 | 1.11 | 1.12 | 1.04 |

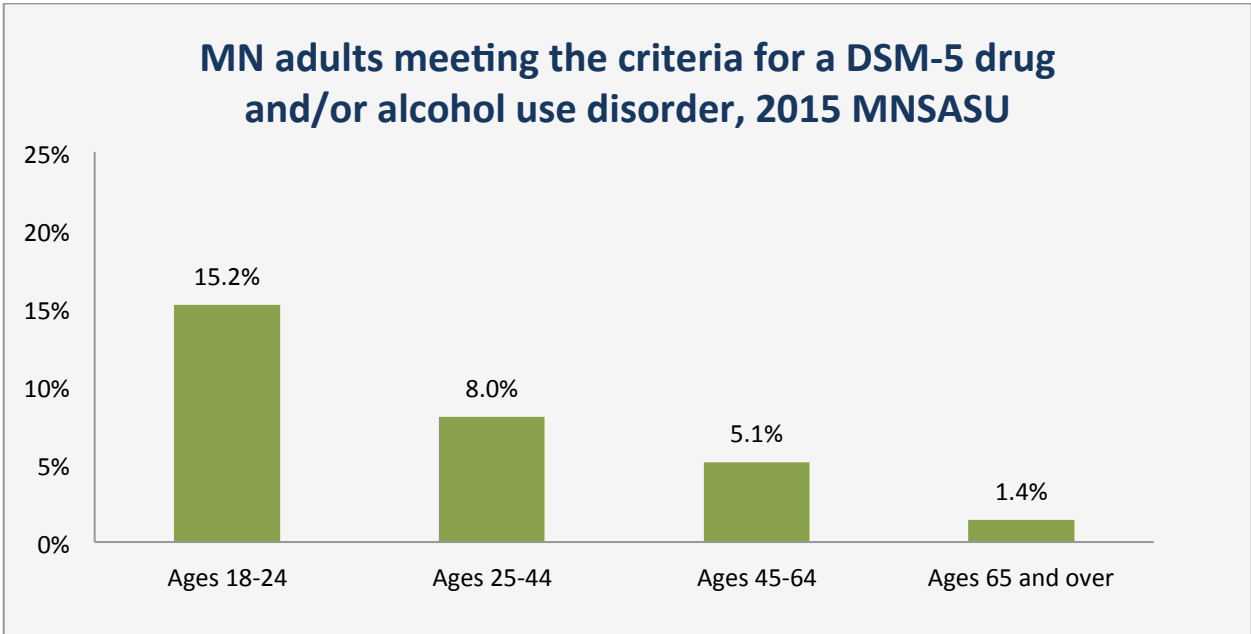
Data Source: MNSASU

| Adults reporting at least moderate depressive symptoms in the past 2 weeks, 2015 MNSASU | | | |
|--|----------------------------------|-------|-------|
| | | 2010 | 2015 |
| Age | Ages 18 thru 24 | 9.8% | 8.8% |
| | Ages 25 thru 44 | 8.2% | 7.3% |
| | Ages 45 thru 64 | 9.5% | 7.6% |
| | Ages 65 and over | 5.6% | 6.4% |
| Race/Ethnicity | African American or Black | 14.6% | 11.4% |
| | American Indian | 21.0% | 12.5% |
| | Asian American/ Pacific Islander | 5.7% | 6.4% |
| | Hispanic/Latino | 10.2% | 6.0% |
| | Bi-Racial/Multi-Racial | 25.0% | 13.5% |
| | White | 7.9% | 7.2% |
| Gender | Male | 6.9% | 7.1% |
| | Female | 9.9% | 7.6% |
| | Total | 8.4% | 7.4% |
| Sexual Orientation | Lesbian, Gay, and Bisexual | N/A | 16.5% |
| | Heterosexual | N/A | 7.1% |

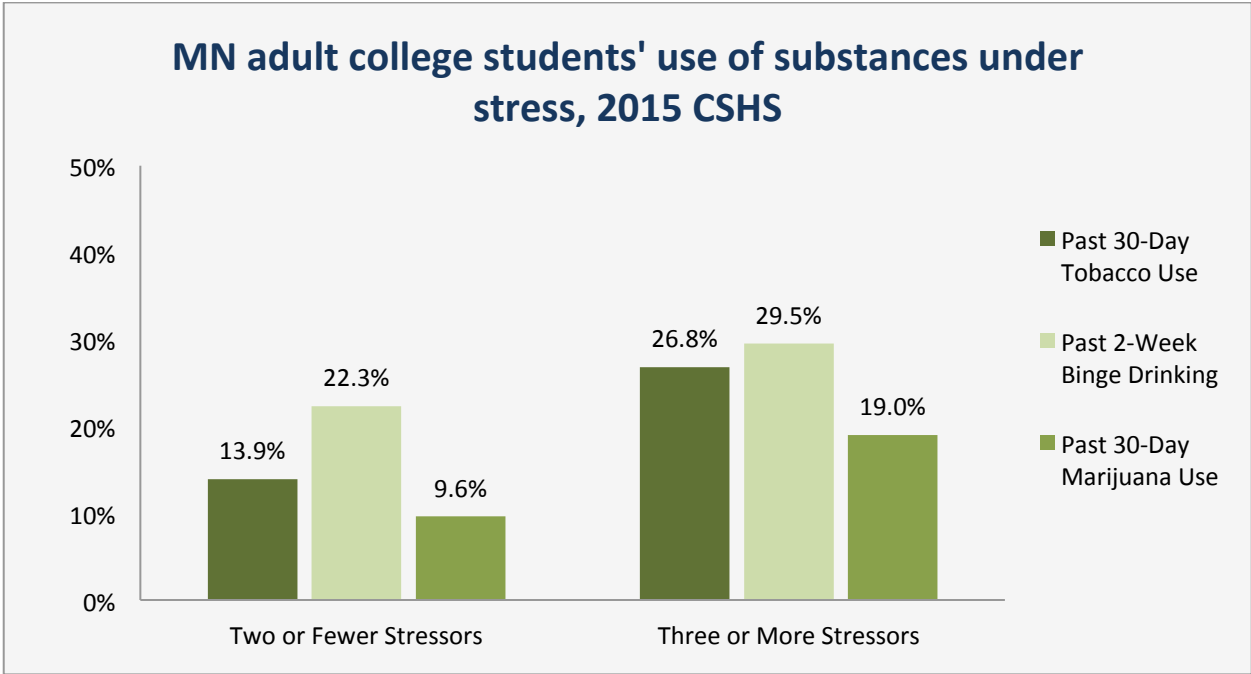
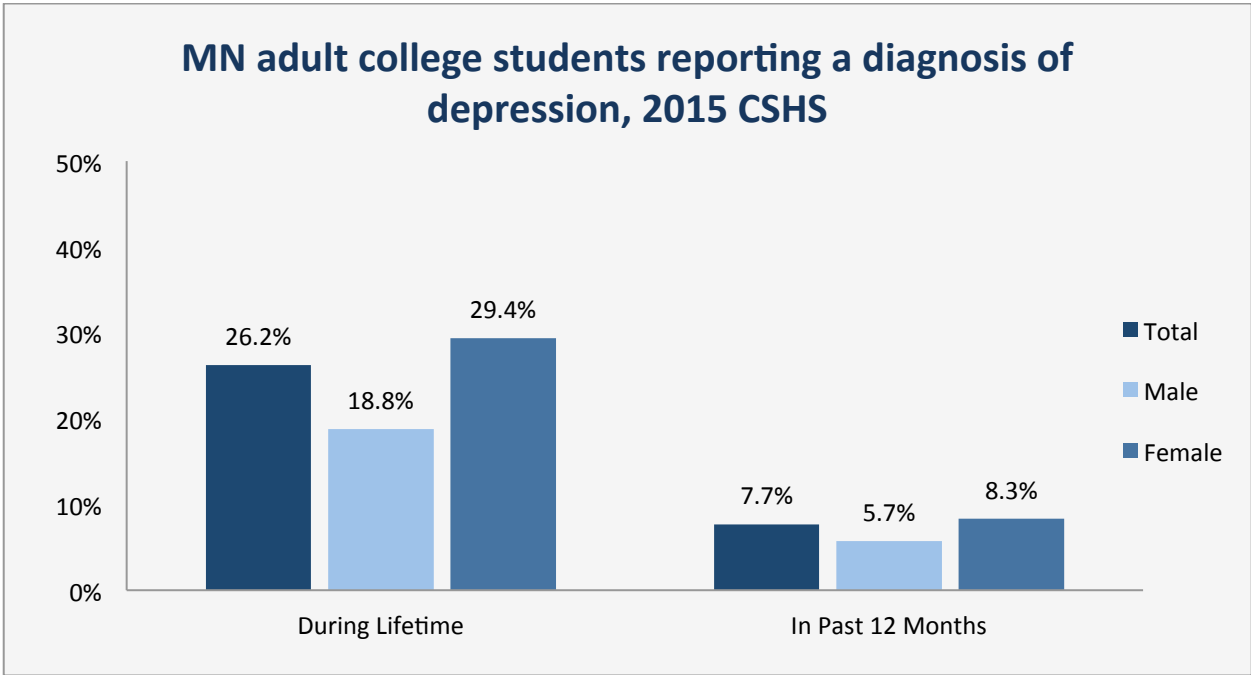


Data Source: MNSASU

| Adults meeting the criteria for a DSM5 drug and/or alcohol use disorder, 2015 MNSASU | | |
|--|----------------------------------|-------|
| | | 2015 |
| Age | Ages 18 thru 24 | 15.2% |
| | Ages 25 thru 44 | 8.0% |
| | Ages 45 thru 64 | 5.1% |
| | Ages 65 and over | 1.4% |
| Race/Ethnicity | African American or Black | 6.5% |
| | American Indian | 13.8% |
| | Asian American/ Pacific Islander | 6.3% |
| | Hispanic/Latino | 7.3% |
| | Bi-Racial/Multi-Racial | 9.5% |
| | White | 6.6% |
| Gender | Male | 8.6% |
| | Female | 4.8% |
| | Total | 6.7% |
| Sexual Orientation | Lesbian, Gay, and Bisexual | 12.1% |
| | Heterosexual | 6.6% |



Data Source: CSHS



Youth: Mental Health, Substance Use, and Shared Risk and Protective Factors

About the Indicator

This section of the profile examines risk and protective factors that influence substance use and abuse behaviors.

Risk factors are characteristics at the biological, psychological, family, community, or cultural level that precede and are associated with a higher likelihood of problem outcomes; protective factors are characteristics associated with a lower likelihood of problem outcomes or that reduces the negative impact of a risk factors on problem outcomes.¹ Some risk factors are specifically associated with substance use, such as perceived risk of harm. On the other hand, some risk and protective factors are association with both substance use/abuse and with mental health. We also know from the research that substance use is a risk factor for mental health problems, and vice versa². Finally, many Minnesotans suffer from co-occurring substance use and mental health disorders.

While factors and behaviors are cross-linked across categories, data are organized and presented here in the following sections:

- Introduction to Adverse Childhood Experiences (ACEs)
- College Student Health Survey: Adult Students' ACE Scores
- Minnesota Student Survey: Youth ACE Scores
 - Alcohol Use
 - Mental Health
 - Family and Community
 - School

In 2013 and 2016, the MSS was administered to students in 5th, 8th, 9th, and 11th grades. Unless otherwise noted, data here are for students in 8th, 9th, and 11th grades.

For more information on the ACE questionnaire, please see:
www.health.state.mn.us/divs/cfh/program/ace/

Data Source(s)

College Student Health Survey (CSHS), Minnesota Student Survey (MSS)

Section Summary

- ACE scores are highly correlated with substance use and depression
- Protective factors for youth include feeling safe at school and in the community; being able to talk with parents about problems; and school engagement
- Risk factors for youth include being in an abusive relationship; experiencing bullying; and skipping class

1. National Research Council and Institute of Medicine. (2009). *Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities* (O'Connell, M.E., Boat, T., & Warner, K. E., Eds.) Washington, D.C: National Academies Press.
2. Gilbertson, L. & Dillon, K. (2012). *Integration of mental health, substance use, and primary care: opportunities and challenges*. Wilder Research: Saint Paul, MN

Introduction: the Adverse Childhood Events Score

The Adverse Childhood Experiences (ACE) Study was a collaboration between the Centers for Disease Control and Prevention (CDC) and Kaiser Permanente's Health Appraisal Clinic in San Diego. Members of the Kaiser Health Maintenance Organization provided detailed information about their childhood experiences of abuse, neglect, and family dysfunction. Study findings linked ACEs to leading causes of illness and death as well as poor quality life. The original ten ACEs used to calculate an "ACE Score" (score calculated by adding 1 point for each ACE experienced) included:

- Emotional abuse
- Physical abuse
- Sexual abuse
- Emotional neglect
- Physical neglect
- Mother treated violently
- Household substance abuse
- Household mental illness
- Parental separation or divorce
- Incarcerated household member

In 2008, the CDC developed a set of ACE questions for states to use in the Behavioral Risk Factors Surveillance System (BRFSS). The ACEs module was added to the 2011 Minnesota Behavioral Risk Factor Surveillance System survey for adults in order to examine the relationships between such exposures and subsequent behavior, mental, and physical health outcomes. The Minnesota questions did not include the two neglect items, but did include separate questions for household alcohol abuse and household drug abuse. In 2015, the College Student Health Survey (CSHS) included the same indicators included on the BRFSS. Find more information about them here: <http://www.health.state.mn.us/divs/cfh/program/ace/>

In 2013, some ACE questions were added to the Minnesota Student Survey and others were revised to better align with national surveys. Students' ACE scores, together with their responses to other questions in the MSS, provide insight into protective and risk factors associated with health, academic success, and substance use and abuse.

Note: Although ACEs can be used as a general measurement of household dysfunction, survey instruments can use a variety of different indicators; therefore, ACE scores should not be compared between surveys.

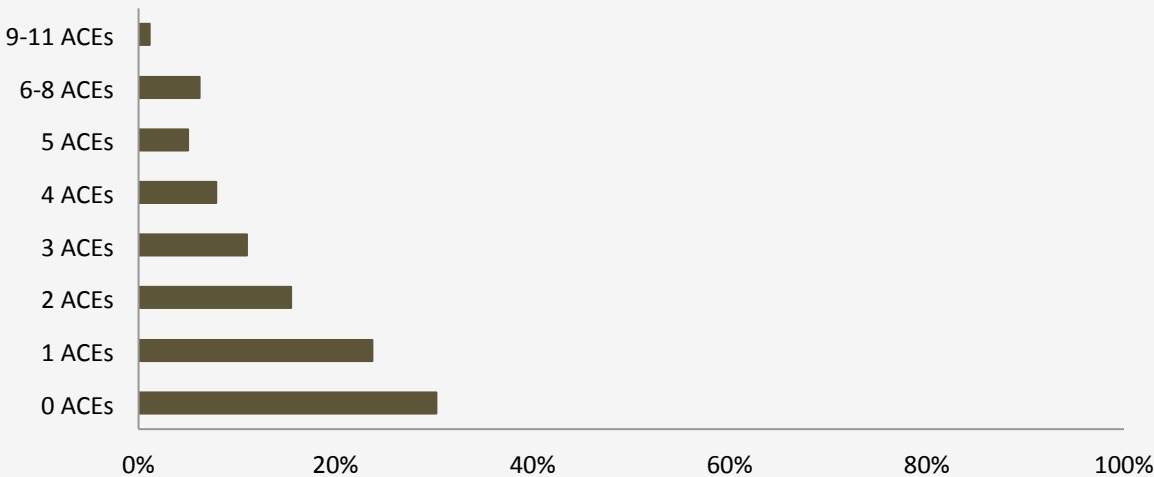
Data Source: CSHS

College Student Health Survey: The Adverse Childhood Events (ACE) Scale

The 11 ACE questions used in the College Student Health Survey ask about conditions that may have been experienced by students in childhood. Students reported whether...

- ...they lived with anyone who was depressed, mentally ill, or suicidal
- ...they lived with anyone who was a problem drinker or an alcoholic
- ...they lived with anyone who used illegal street drugs or abused prescription medications
- ...they lived with anyone who served time or was sentenced to serve time in prison, jail, or other correctional facility
- ...their parents were divorced or separated
- ...their parents or adults in the home hit, beat, kicked, or physically hurt them in any way
- ...their parents or an adult ever swore at them, insulted them, or put them down
- ...anyone at least 5 years older than them, or an adult, ever touched them sexually
- ...anyone at least 5 years older than them, or an adult, tried to make the student touch them sexually
- ...anyone at least 5 years older than them, or an adult, ever forced them to have sex

Percent of MN adult college students with adverse childhood experiences (ACEs), 2015 CSHS



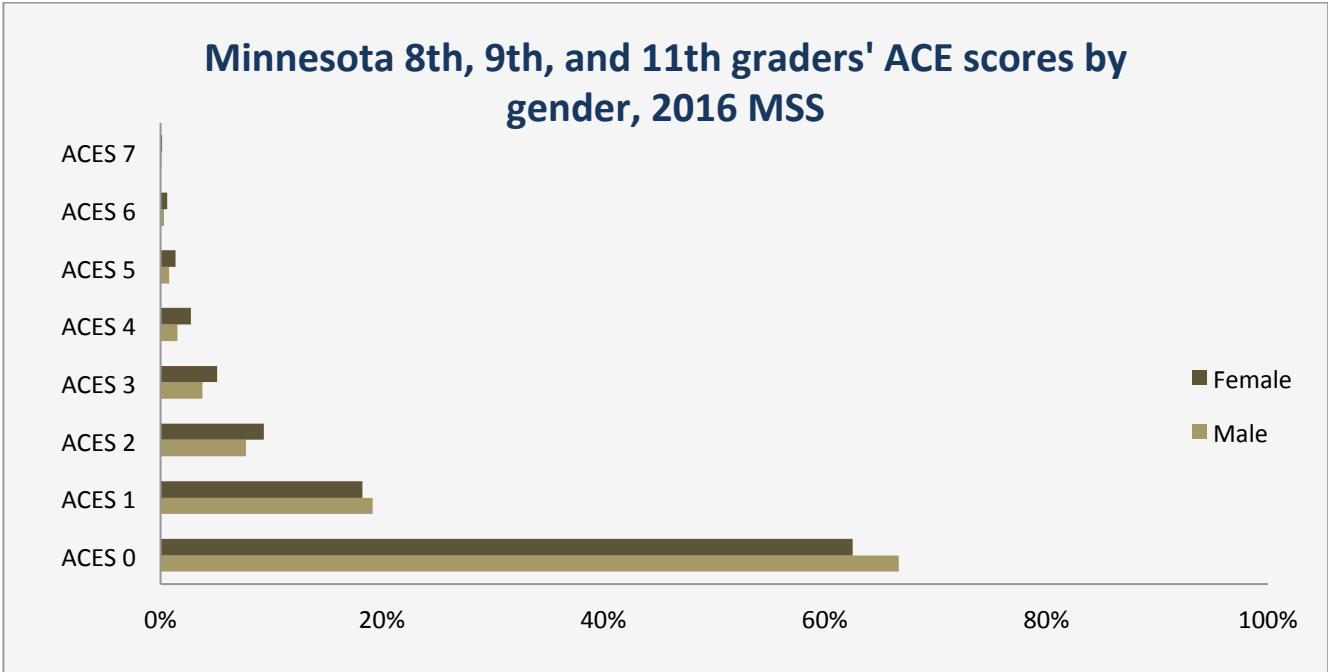
Data Source: MSS

Minnesota Student Survey: The Adverse Childhood Events (ACE) Scale

The ACE score, as used in the Minnesota Student Survey, ranges from 0 to 7, and is based on the number of the following conditions experienced by the student. They include students reporting...

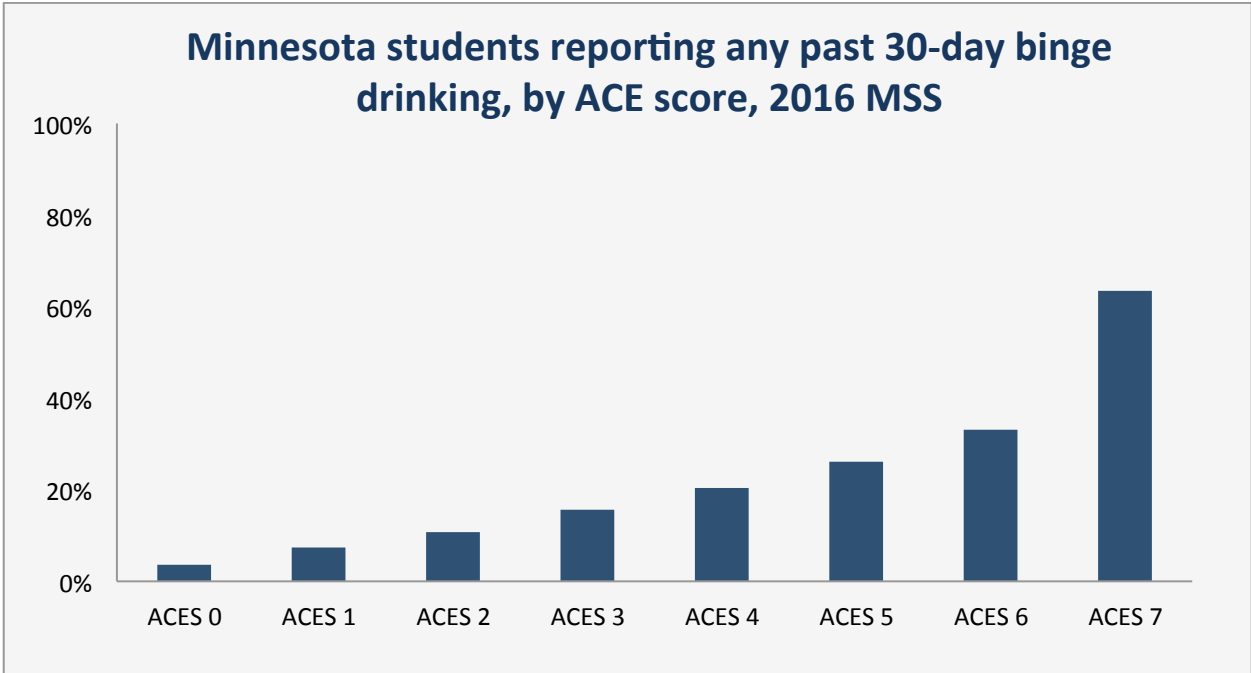
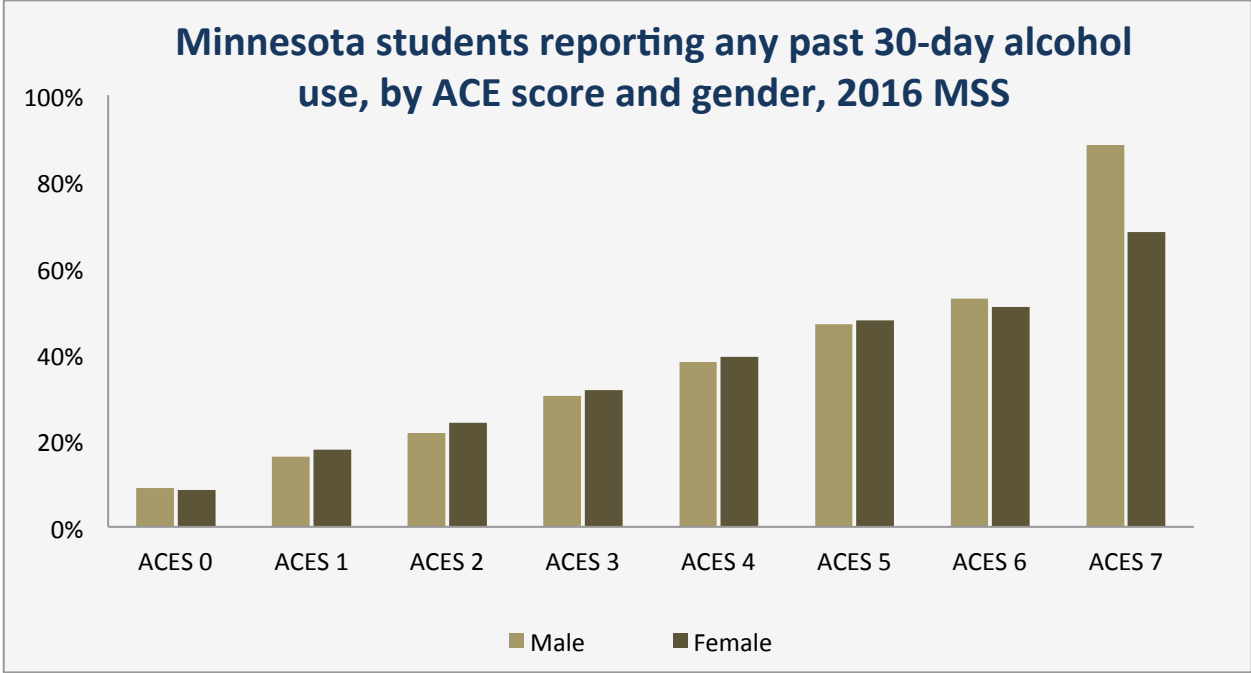
- ...they have a parent or guardian who is currently in jail, **and/or** who has been in jail in the past
- ...they live with someone who drinks too much alcohol
- ...they live with someone who uses illegal drugs or abuses prescription drugs
- ...a parent or other adult in the household has verbally abused them
- ...a parent or other adult in the household has physically abused them
- ...parents or other adults in the home physically abuse each other
- ...an adult or other person outside the family, **and/or** an older or stronger family member, has ever sexually abused them

33% of male students and 38.1% of female students had an ACE score of 1+



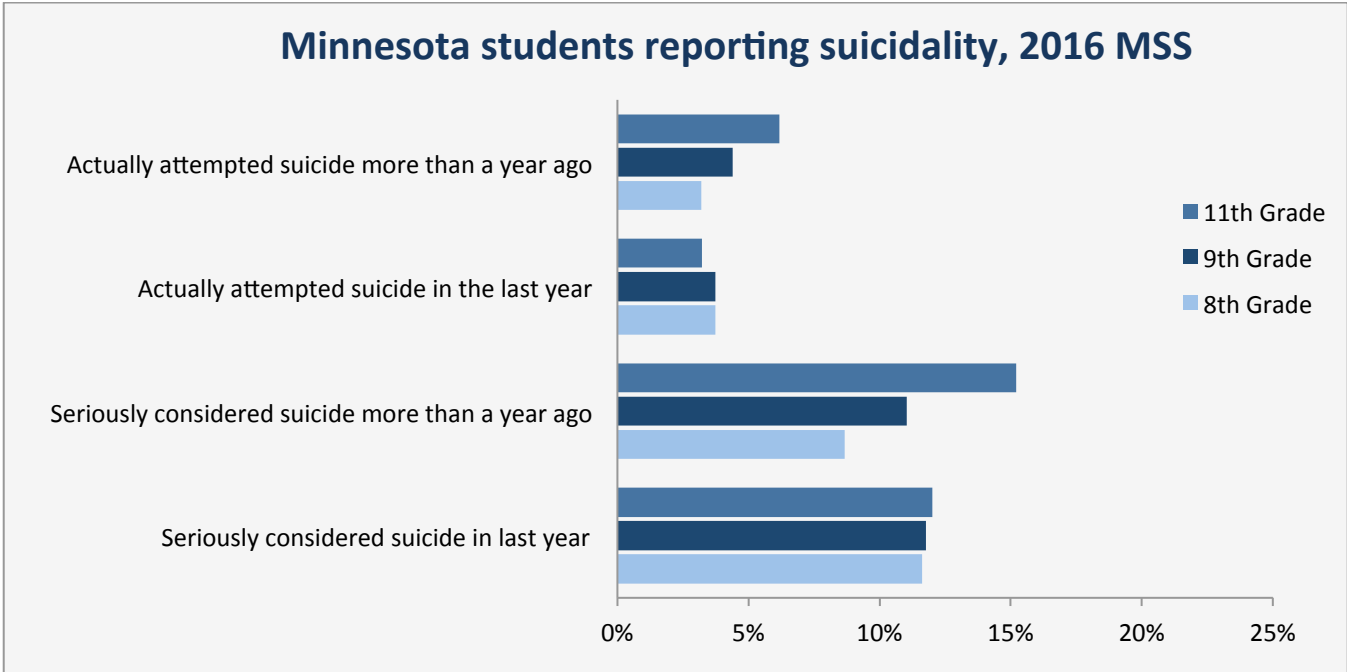
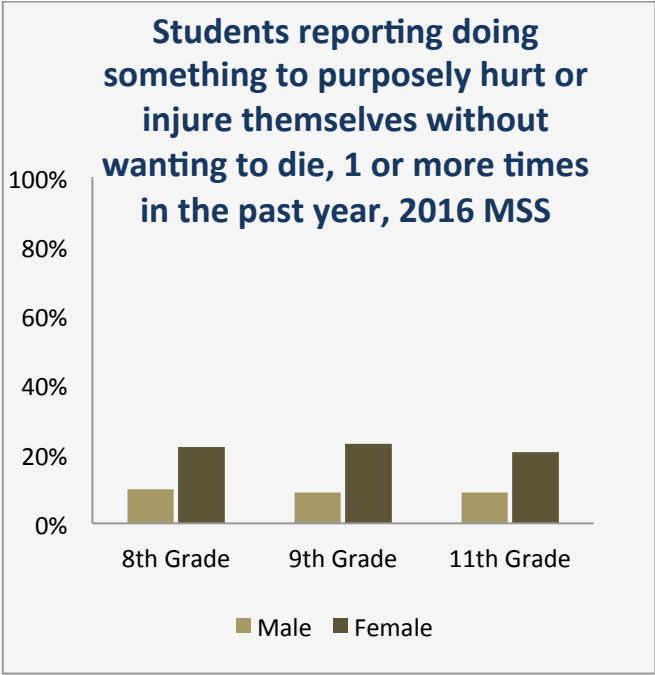
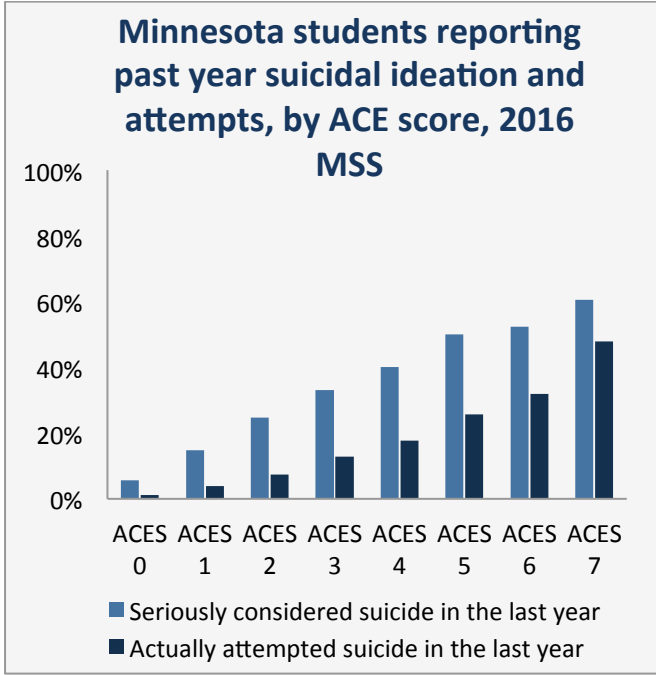
Data Source: MSS

Alcohol Use

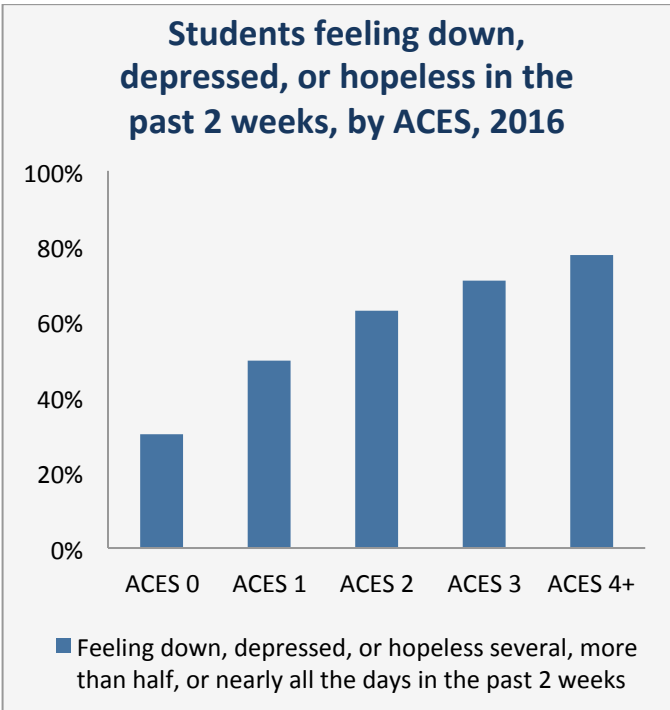
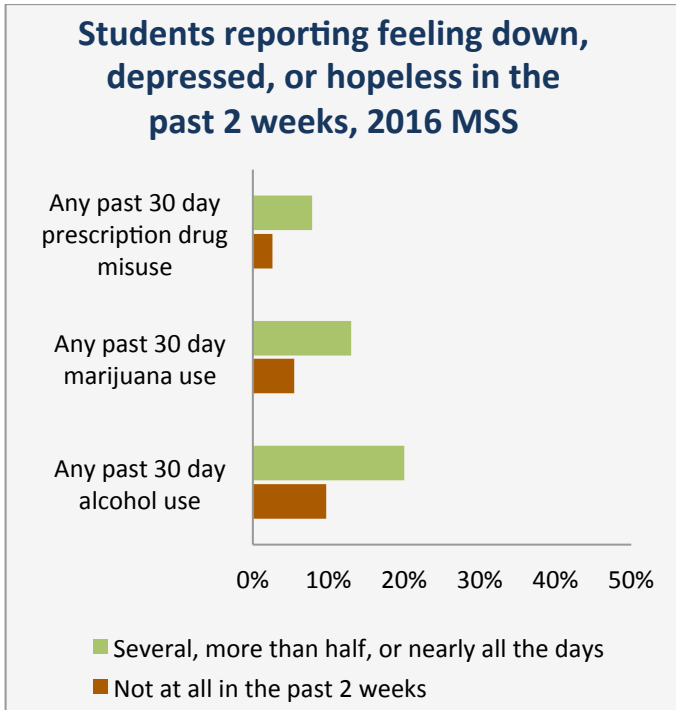
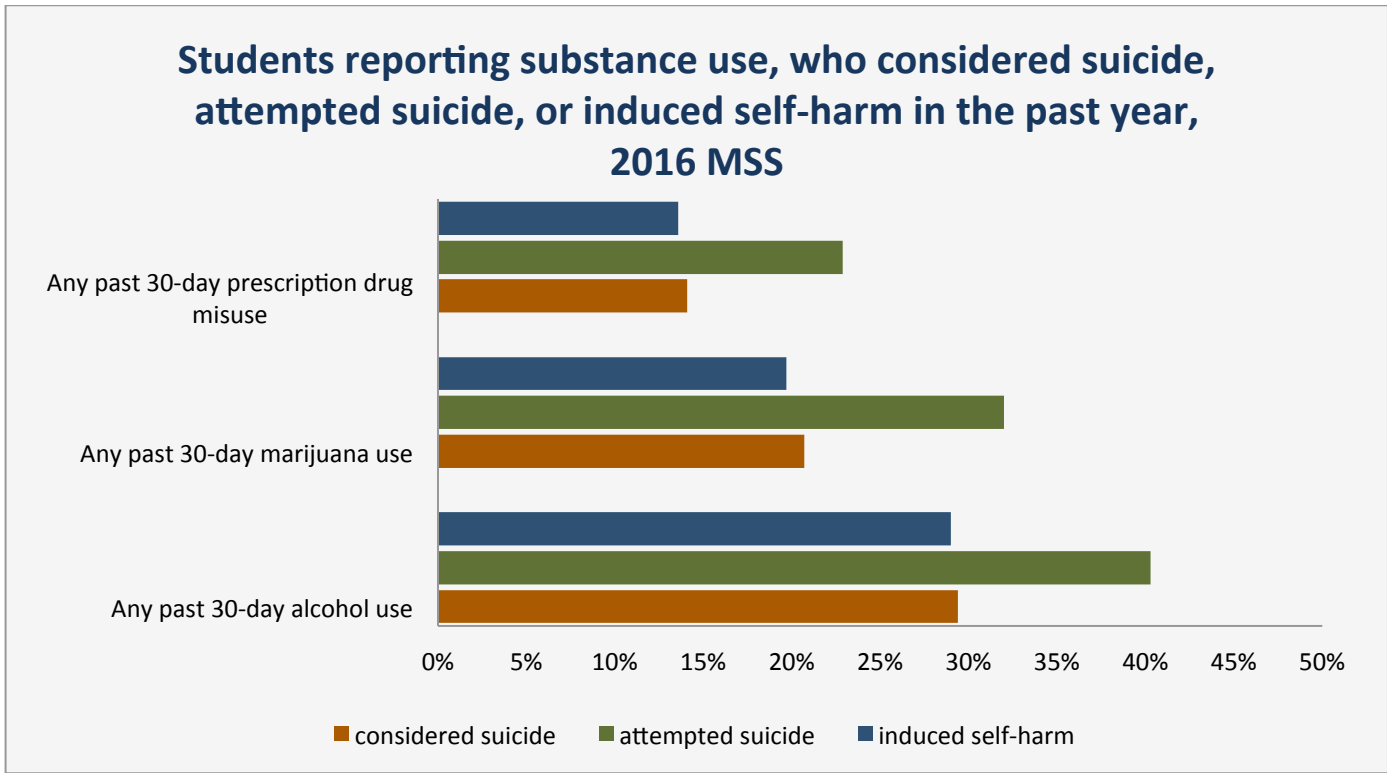


Data Source: MSS

Mental Health

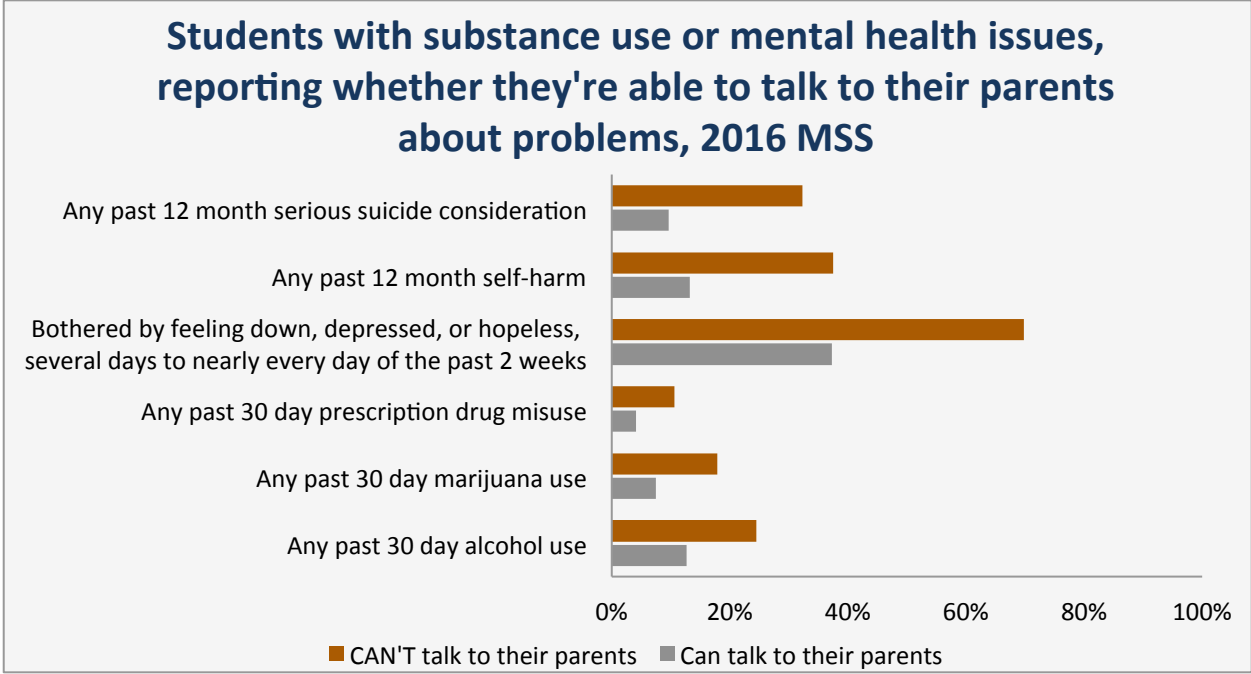


Data Source: MSS

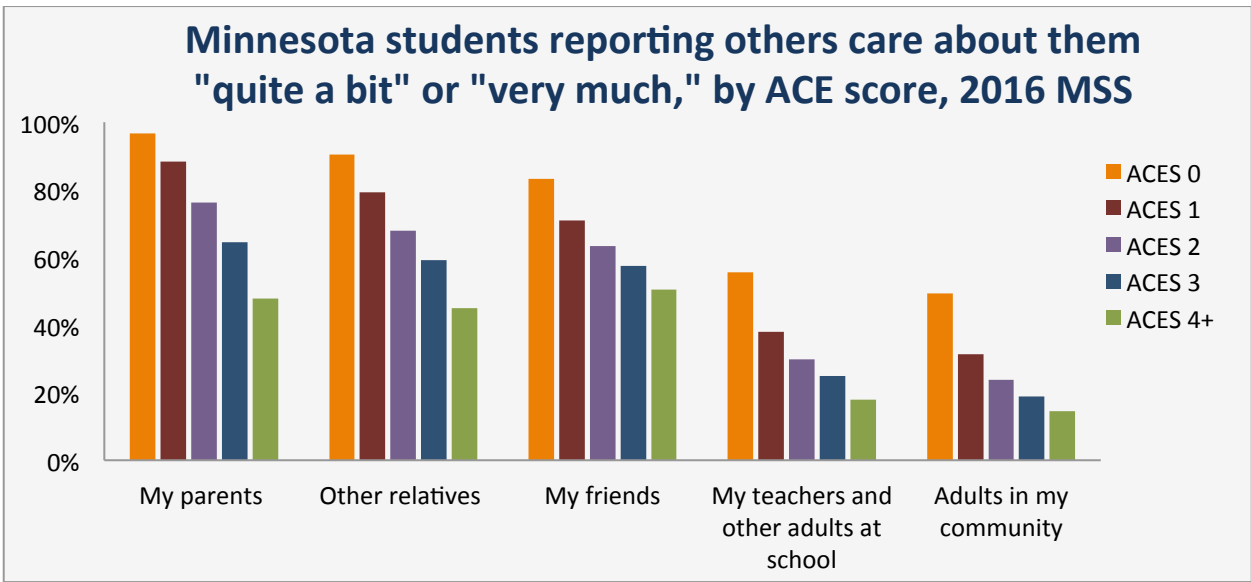


Data Source: MSS

Family and Community

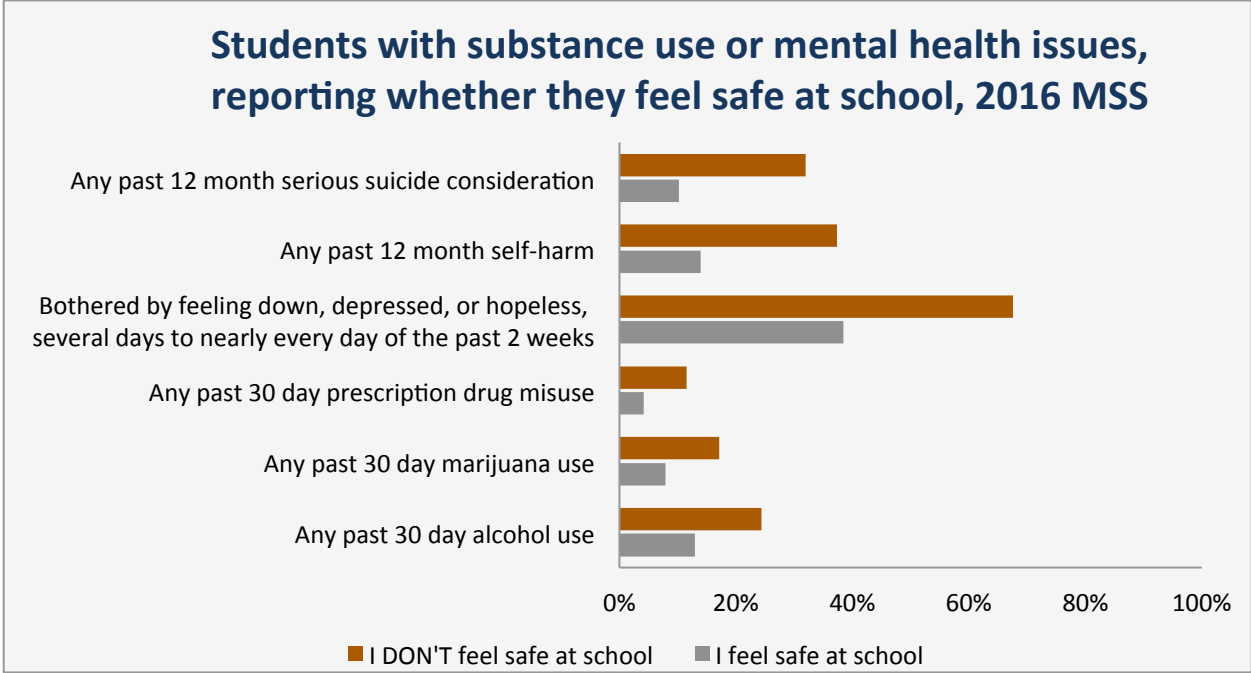


*Protective factor:
Students who feel that adults care for them are less likely to engage in harmful behaviors*

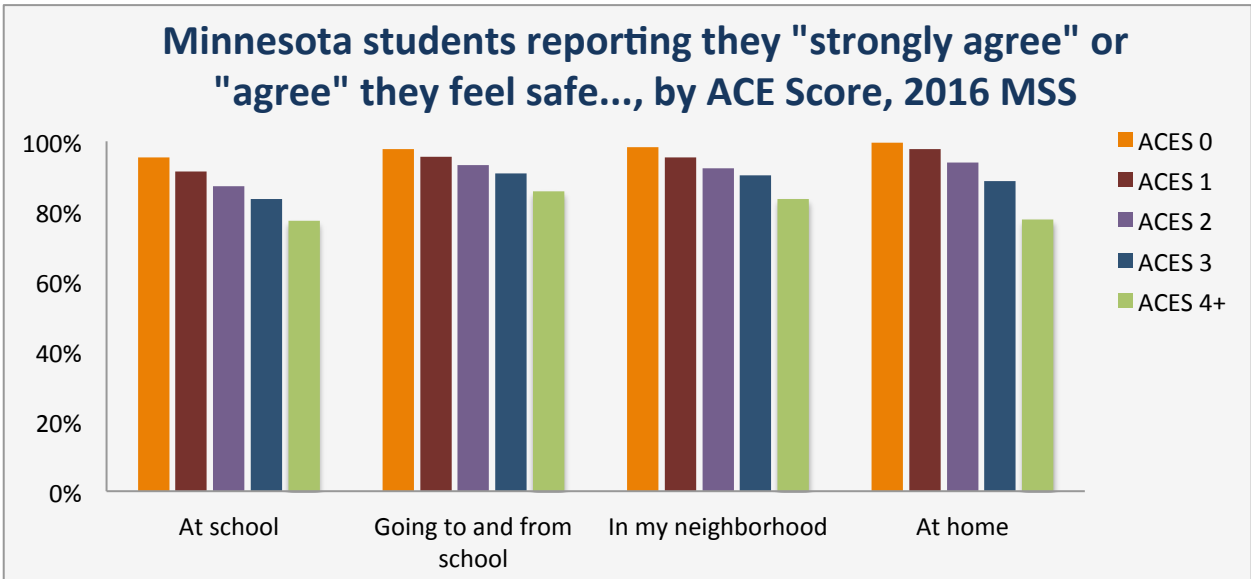


Data Source: MSS

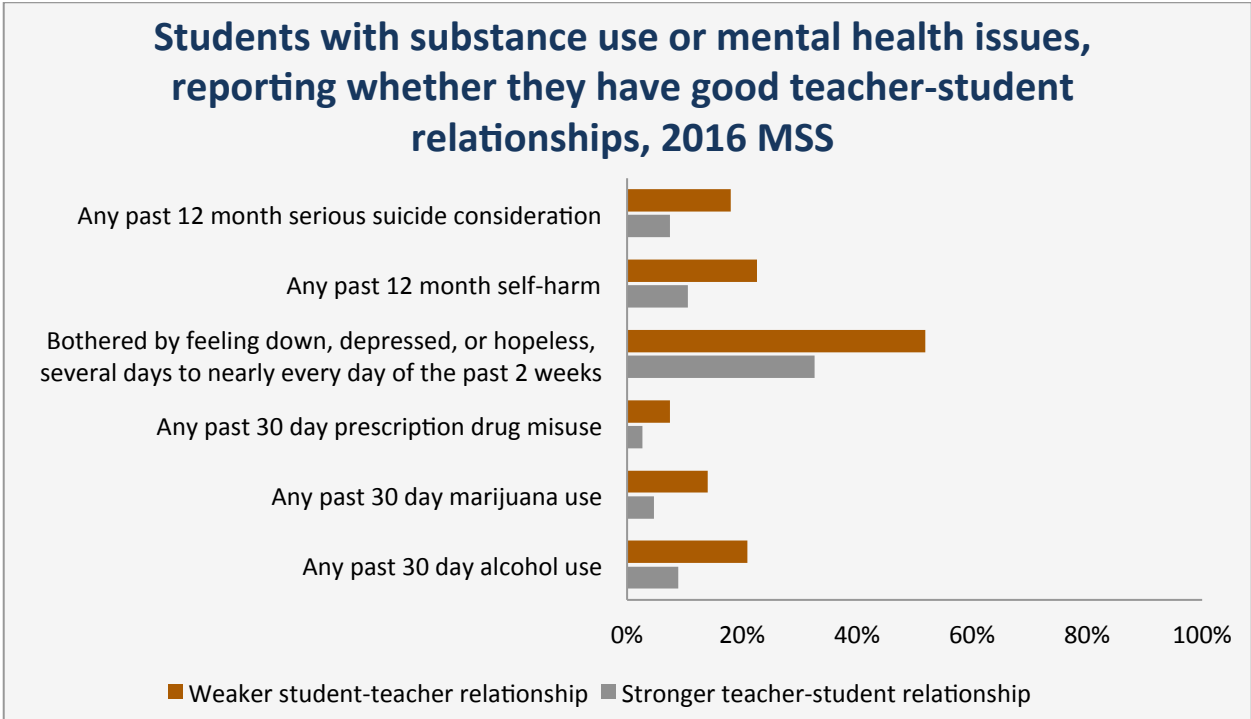
School



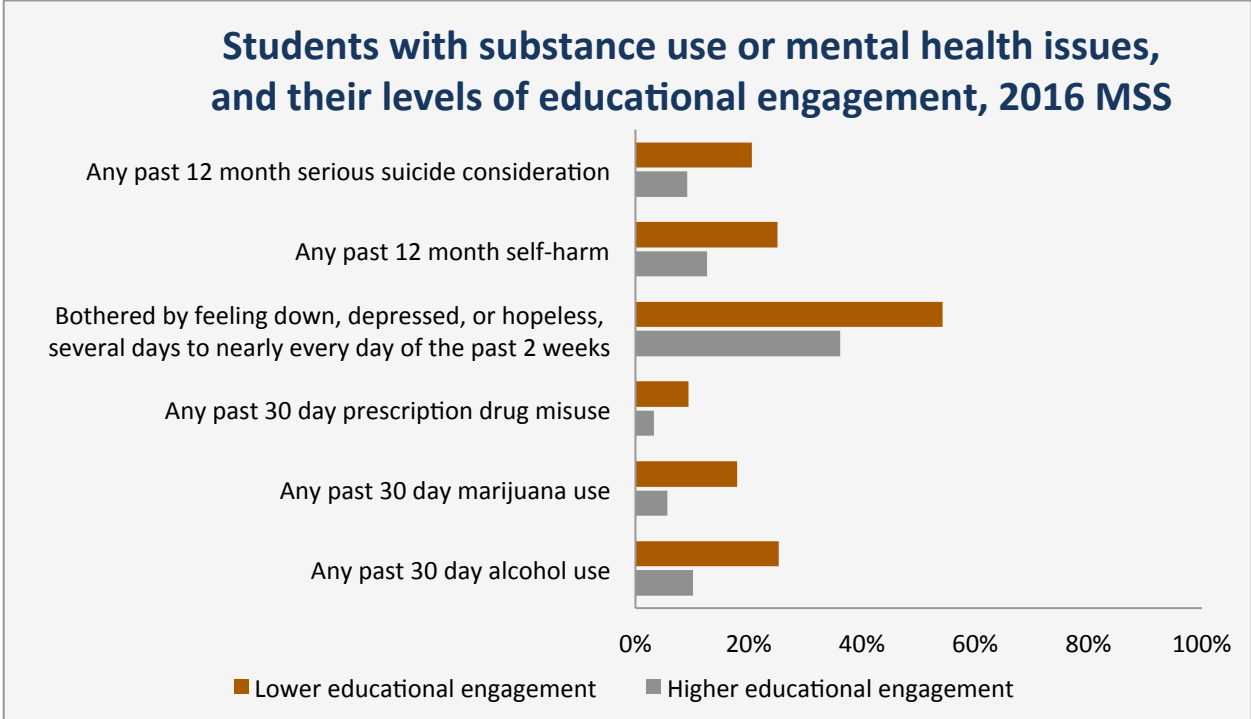
*Protective factor:
Students who feel safe at school are less likely to engage in harmful behaviors*



Data Source: MSS



Protective factor: School engagement



Data Source: MSS

One risk factor for students' substance use is experiencing bullying. For the purposes of the Minnesota Student Survey, bullying is defined as the following:

VICTIM

Students reporting, during the last 30 days, ANY times other students at school:

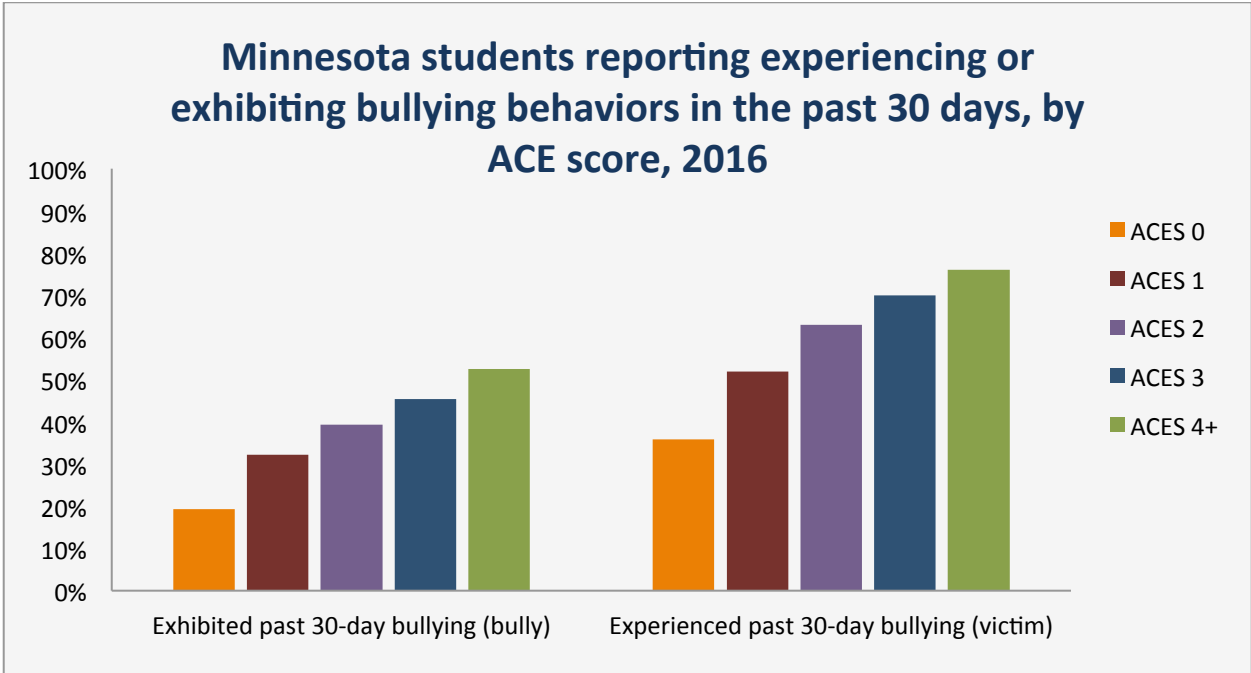
- Pushed, shoved, slapped, hit or kicked you when they weren't kidding around, *and/or*
- Threatened to beat you up, *and/or*
- Spread mean rumors or lies about you, *and/or*
- Made sexual jokes, comments or gestures toward you, *and/or*
- Excluded you from friends, other students, or activities

BULLY

Students reporting, during the last 30 days, ANY times at school THEY:

- Pushed, shoved, slapped, hit or kicked someone when you weren't kidding around, *and/or*
- Threatened to beat someone up, *and/or*
- Spread mean rumors or lies about someone, *and/or*
- Made sexual jokes, comments or gestures toward someone, *and/or*
- Excluded someone from friends, other students, or activities

Data Source: MSS



Risk factor: Experiencing bullying

