

Overview of substance use among Minnesota youth

Part I: Use of tobacco, alcohol and illicit drugs

Data from 2010
Minnesota Student Survey

March 2011



Minnesota Department of **Human Services**
Performance Measurement and Quality Improvement Division

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By

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This is the first of a three-part series on issues related to substance use
among Minnesota youth.

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Introduction

Substance use has serious health and social consequences, including drug-related injury and deaths, HIV/AIDS and other sexually transmitted diseases, co-morbid psychiatric diseases, emergency room visits, loss of productivity, and substance use disorders. Preventing substance use among adolescents is of utmost importance and has been an ongoing goal of the *Healthy People* initiative by the U.S. Department of Human Services.¹

Research has shown that the perception of harm and risk associated with substance use is an important factor in decreasing substance use.² In addition, it is well documented that adolescents who use alcohol or drugs at an earlier age are more likely to develop substance use disorders.³ Monitoring adolescents' substance use, age at first use, and risk perception about substance use is critical for planning prevention programs.

This is the first of a series of reports, which provides an overview of substance use and other related issues using the data from the 2010 Minnesota Student Survey (MSS).⁴ The topics for each part of the series are as follows:

Part I: Use of tobacco, alcohol and illicit drugs

Part II: Age of first use, perception of risk and perceived parental disapproval

Part III: Substance use disorders

¹ For details on Healthy People initiative, see web page: <http://www.healthypeople.gov>

² National Institutes of Health and Substance Abuse and Mental Health Services Administration. *Healthy People 2010*, Vol. II, Sec. 26, Substance Abuse. Downloaded in December 2008 from <http://www.healthypeople.gov/Document/HTML/Volume2/toc.htm>.

Benthin A, Slovic P, Severson H. 1993. A psychometric study of adolescent risk perception. *J Adolesc.* 16(2):153-68.

³ Chen CY, O'Brien MS, Anthony JC, 2005. Who becomes cannabis dependent soon after onset of use? Epidemiological evidence from the United States:2000-2001. *Drug Alcohol Depend.* 79:11-22.

DeWit DJ, Adlaf EM, Offord DR, Ogborne AC, 2000. Age at first alcohol use: a risk factor for the development of alcohol disorders. *Am J Psychiatry* 157: 745-750.

Gil AG, Wagner EF, Tubman JG. 2004 Associations between early-adolescent substance use and subsequent young-adult substance use disorders and psychiatric disorders among a multiethnic male sample in south Florida. *American J Pub Health.* 94(9):1603-09.

Anthony JC, Petronis KR 1995. Early-onset drug use and risk of later drug problems. *Drug and Alcohol Dependence.* 40: 9-15.

Substance Abuse and Mental Health Services Administration, Office of Applied Studies. (December 4, 2008). *The NSDUH Report: Trend in Substance Use, Dependence or Abuse, and Treatment among Adolescents: 2002 to 2007*. Rockville, MD.

⁴ Information about the survey is described in Method section at the end of this report.

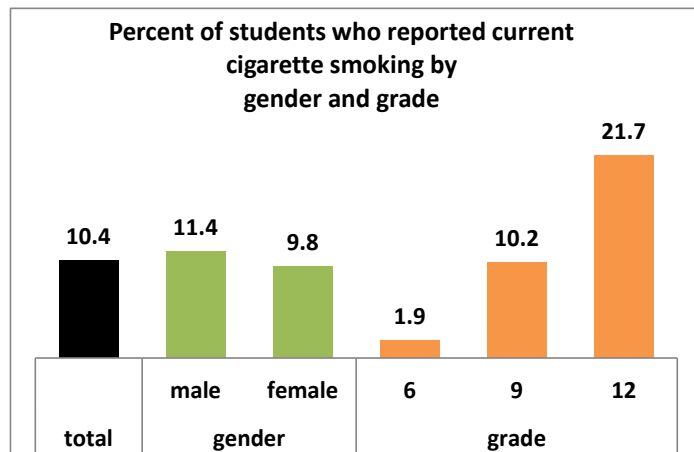
Tobacco Use

Current cigarette smoking

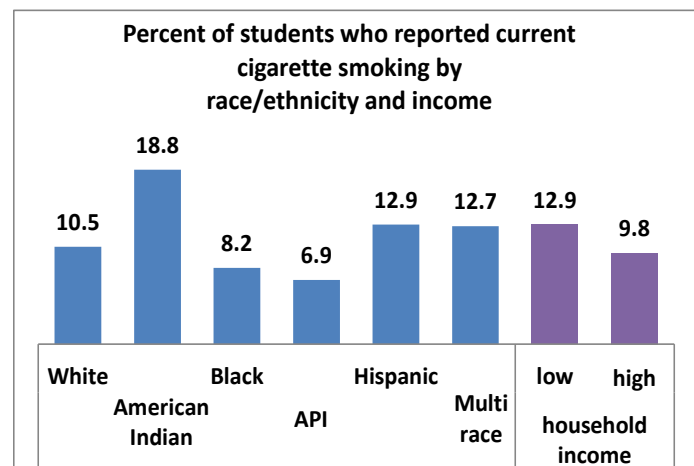
“During the last 30 days, on how many days did you smoke a cigarette?”

Statewide, about one in ten (10.4%) students in Minnesota smoked cigarettes on one or more of the 30 days preceding the MSS survey (current cigarette smoking). About 2% of 6th graders reported current cigarette smoking, and the prevalence was about five times higher among 9th graders and more than ten times higher among 12th graders.

Male students were more likely than females to report current smoking. While true for most subgroups, this gender difference was not found among 9th graders (10.0% for male and 10.3% for females), and it was reversed among American Indians (17.2% for males and 20.7% for females; see Table 2 in Appendix for details).



The prevalence of current cigarette smoking was highest among American Indian students and lowest among Asian and Pacific Islanders (API). In addition, Hispanic students or those with multiple racial backgrounds were more likely than whites to report current cigarette smoking while blacks were less likely than whites to report it.

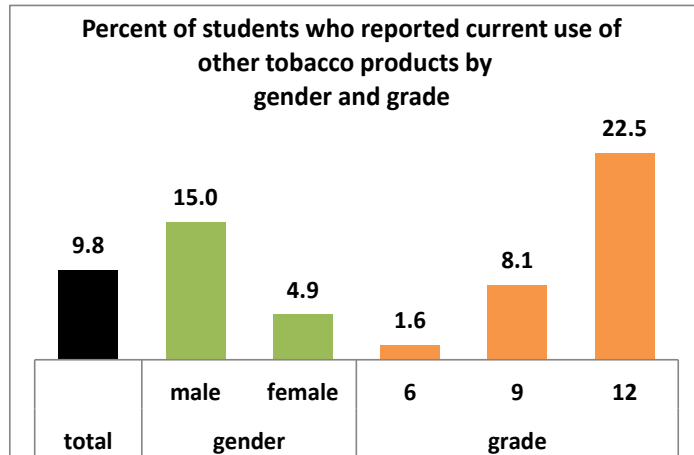


Students from low-income households were more likely than their more affluent counterparts to report current cigarette smoking.

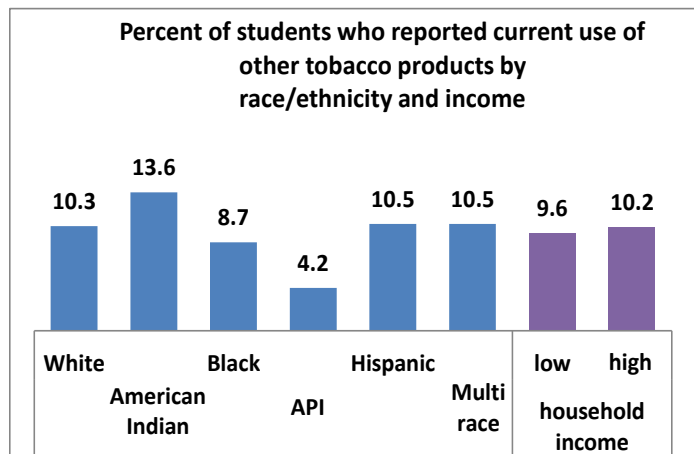
Current use of other tobacco product use

“During the last 30 days, on how many days did you smoke cigars, cigarillos or little cigars?” and “During the last 30 days, on how many days did you use chewing tobacco, snuff or dip?”

Almost one in ten (9.8%) students said that they used these other tobacco products on one or more of the 30 days preceding the survey. Overall, males were three times more likely than females to report current use of other tobacco products; this gender difference was consistent across subgroups. The prevalence of current use of other tobacco products was higher among older students than their younger counterparts.



As in current cigarette smoking, American Indian students had the highest prevalence of current use of other tobacco products and API students had the lowest prevalence. In addition to API, blacks were less likely than whites to use other tobacco products, but there was virtually no difference between white and Hispanics or those with multiple racial backgrounds.



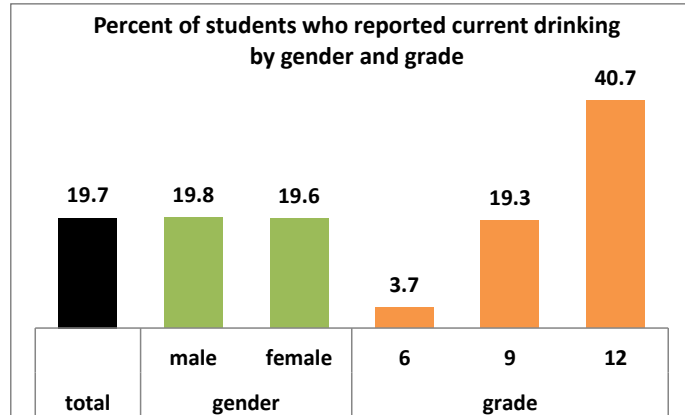
Overall, students from more affluent households were slightly more likely to report current use of other tobacco products, but a three way table shows an interaction between gender and household income (see Table 2 in Appendix). Among males, the prevalence was higher among students from more affluent households, but among females, it was higher in those from low-income households.

Alcohol Use

Current drinking

“During the last 30 days, on how many days did you drink one or more drinks of an alcoholic beverage?”

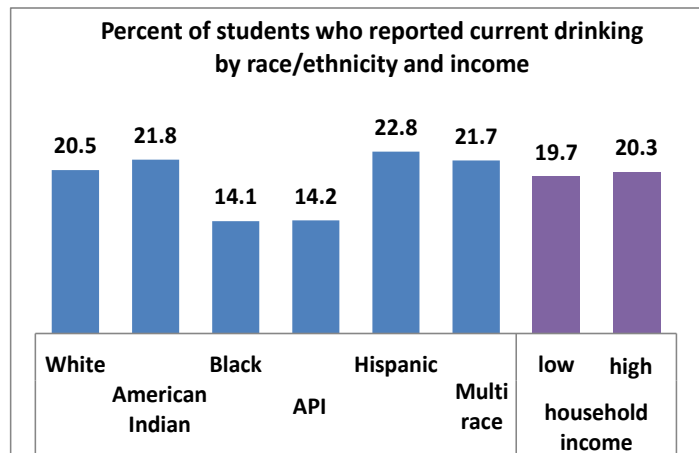
About one in five (19.7%) students in Minnesota reported consuming at least one drink of an alcoholic beverage on at least one day during the 30 days before the survey (current drinking). Just below 4% of 6th graders reported current drinking, and the prevalence was more than five times higher among 9th graders and more than ten times higher among 12th graders.



While the overall prevalence of current alcohol use was similar across genders, males had a higher prevalence of current drinking than females among some subgroups whereas females had higher prevalence among other subgroups (see Table 3 in Appendix for details). For example, males in 12th grade were more likely than 12th grade females to report current alcohol use (42.1% for males; 39.4% for females) but females were more likely to report it among 9th graders (18.5% for males; 20.1% for females).

Overall, the prevalence of current drinking was highest among Hispanics, closely followed by American Indians, students of multiple-race background, and white students. Black and API students had the lowest prevalence of current drinking.

Students from low-income households were only slightly less likely than their more affluent counterparts to report current drinking.



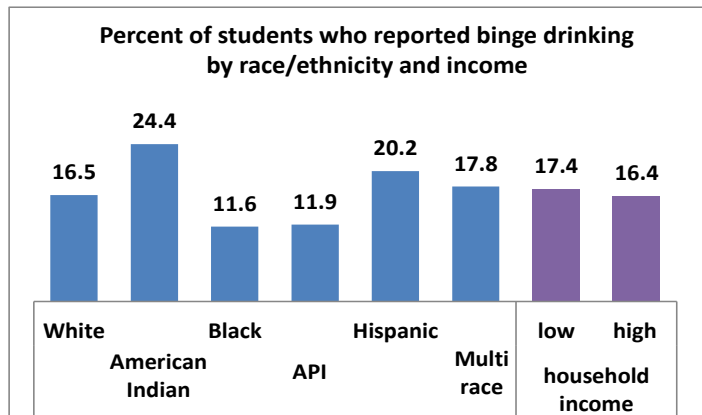
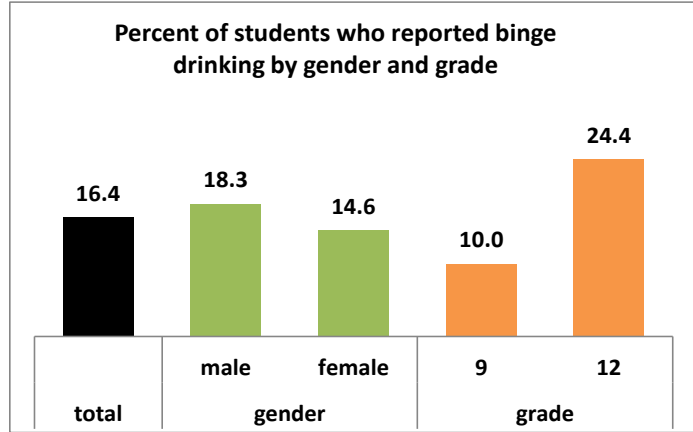
Binge drinking

“Think back over the last two weeks. How many times (if any) have you had five or more drinks in a row? A drink is a glass of wine, a bottle of beer, a wine cooler, a shot glass of liquor, or a mixed drink.”

Statewide, 16.4% reported binge drinking at least once during the two weeks before the survey. Overall, males had higher prevalence of binge drinking than females, and this pattern holds for most of subgroups except among 9th graders where females reported binge drinking at a rate almost as high as males (9.9% vs. 10.1%; see Table 3 in Appendix). High school seniors were more than twice as likely as 9th graders to report binge drinking. Binge drinking was not asked among 6th graders.

American Indians had the highest prevalence of binge drinking, followed by Hispanics, students of multiple race background, and whites. As in current drinking, API and black students had the lowest prevalence of binge drinking.

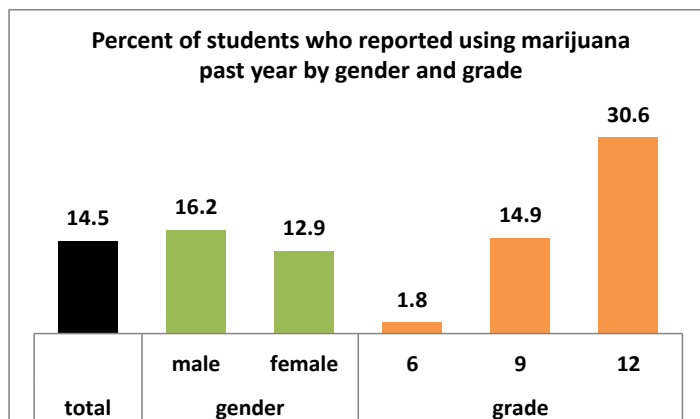
Overall, students from low-income households were slightly more likely to report binge drinking than their more affluent counterparts, and this difference was more pronounced among females (16.3% vs. 14.1%; see Table 3 in Appendix for details).



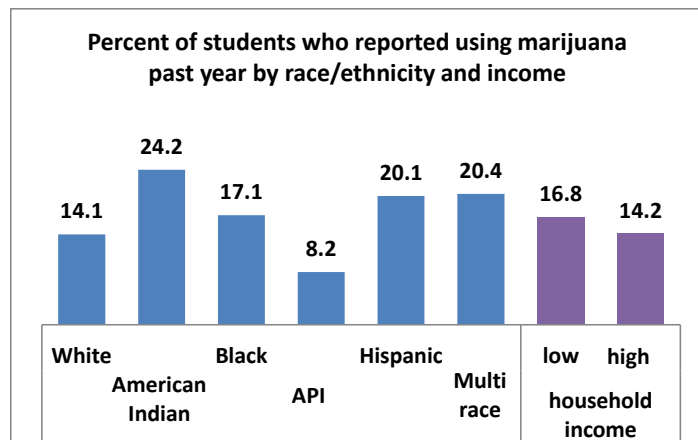
Marijuana Use

Past-year marijuana use

“During the last 12 months, on how many occasions, if any, have you used marijuana or hashish?”



Statewide, 14.5% of students used marijuana on at least one occasion during the 12 months before the survey. Overall, male students had a higher prevalence than females, and this was consistent across all subgroups (see Table 4 in Appendix for details). Almost 2% of 6th graders reported past-year marijuana use, and the prevalence jumped to 14.9% among 9th graders and 30.6% among 12th graders.

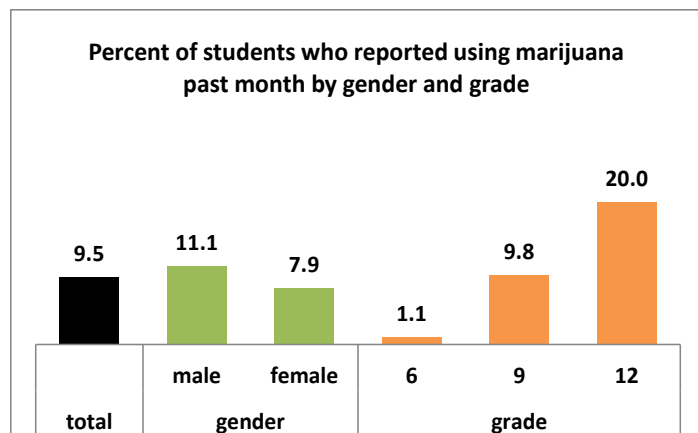


Compared to white students, the prevalence of past-year marijuana use was higher among all minority sub-groups, except API students who had the lowest level of prevalence. The prevalence was highest among American Indians with almost one in four (24.2%) reporting use during the past year. Students from low-income households were more likely than their more affluent counterparts to report past-year marijuana use.

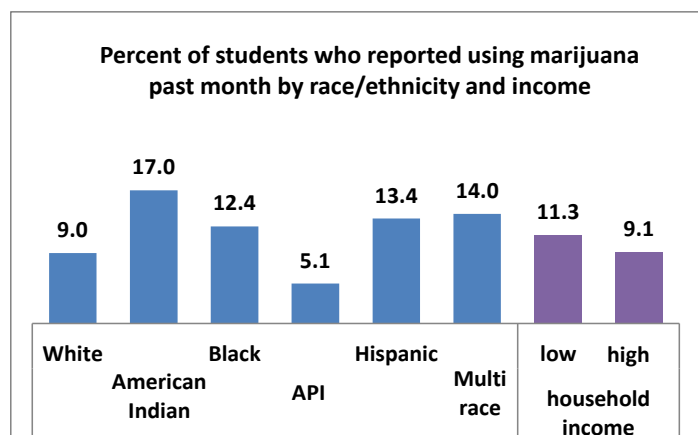
Current marijuana use

“During the last 30 days, on how many days did you use marijuana or hashish?”

Statewide, 9.5% of students used marijuana on at least one day during the 30 days before the survey. As with past-year marijuana use, the prevalence of current marijuana use was higher among males than females. Similar gender differences appeared in all subgroups except American Indians, who showed no gender difference (17.1% for male; 16.9% for female, see Table 4 in Appendix). About one in five (20.0%) 12th graders and one in ten (9.8%) 9th graders, compared to 1.1% of 6th graders, reported current marijuana use.



Compared to white students, the prevalence of current marijuana



use was higher among all minority subgroups except API students who had the lowest prevalence. Students from low-income households were more likely than their more affluent counterparts to report current marijuana use.

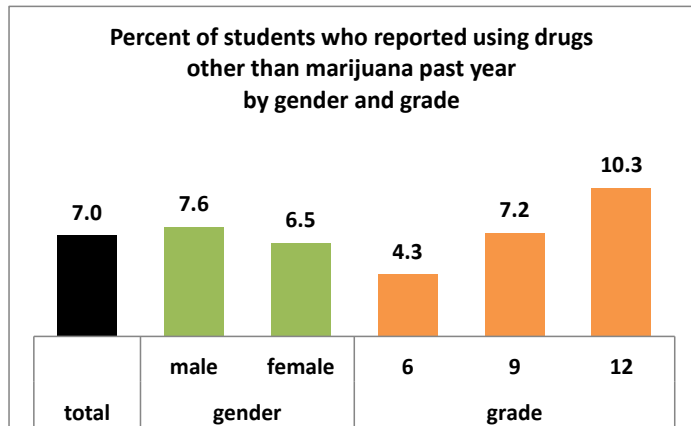
Other Illicit Drug Use

The Minnesota Student Survey asked about using illicit drugs other than marijuana. In the questionnaire, “other drugs” were described as “*drugs that are taken for non-medical reasons such as cocaine and crack, heroin, prescription drugs, stimulants, methamphetamine, MDMA (ecstasy) or LSD (acid)/PCP. We also mean sniffing glue or breathing gases or contents of spray cans.*”

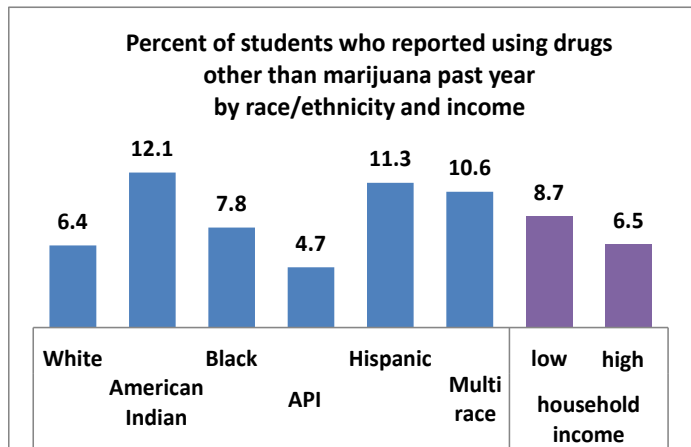
Past-year use of other drugs

“During the last 12 months, have you used any of these ,other drugs’?”

Statewide, 7.0% of students reported using illicit drugs other than marijuana during the 12 months before the survey. Overall, male students were slightly more likely than females to report past-year use of other drugs (7.6% vs. 6.5%) and such gender difference was found in most sub-groups except American Indians and 9th graders, where the prevalence was higher among females (13.7% vs. 10.9% among AI; 7.6% vs. 6.9% among 9th graders; see Table 5 in Appendix). About 4.3% of 6th graders, 7.2% of 9th graders, and 10.3% of 12th graders reported past-year use of other drugs.



The prevalence was highest among American Indians (12.1%), followed by Hispanics (11.3%), and students of multiple-race background (10.6%). About 7.8% of black students and 6.4% of white students reported using other drugs during the past year. The prevalence was the lowest among API students with 4.7%. Students from low-income households were more likely

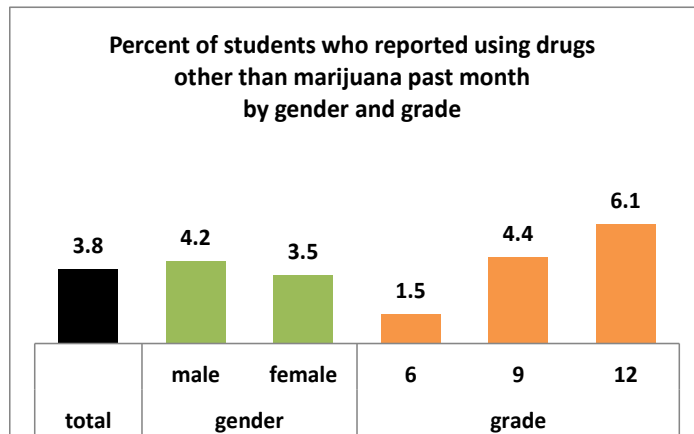


than their more affluent counterparts to report past-year use of other drugs (8.7% vs. 6.5%).

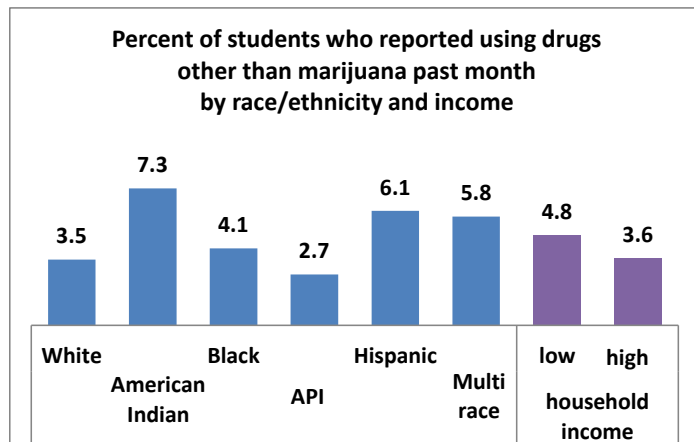
Current use of other drugs

“During the last 30 days, on how many days did you use any of these ,other drugs’?”

Statewide, 3.8% of students reported using illicit drugs other than marijuana on at least one day during the 30 days before the survey. Overall, male students were slightly more likely than females to report current use of other drugs (4.2% vs. 3.5%). Among American Indians and 9th graders, however, females were more likely than males to report current use of other drugs (8.6% vs. 6.3% among AI; 4.7% vs. 4.1% among 9th graders; see Table 5 in Appendix). As with past-year use of other drugs, the prevalence of current use was higher among older students. About 1.5% of 6th graders, 4.4% of 9th graders, and 6.7% of 12th graders reported current use of other drugs.



American Indians (7.3%) had the highest prevalence of current use of other drugs, followed by Hispanics (6.1%) and those from multiple-race background (5.8%). API students had the lowest prevalence (2.7%). Students from low-income households had a slightly higher prevalence than their more affluent counterparts (4.8% vs. 3.6%).



Methods

Data

The Minnesota Student Survey (MSS) is a statewide school-based, paper-and-pencil survey conducted every three years for students in grades 6, 9, and 12, by an interagency team consisting of four state agencies (Education, Health, Human Services, and Public Safety). This report is based on the 2010 MSS data.

Response rates

MSS is not a sample-based, but a census-like survey, where all public school districts are invited to participate and student participation is voluntary. In 2010, 295 of the 335 public school districts (88%) agreed to participate. The overall student participation across the three grades was approximately 71% of total enrollment.

Socio-demographic description of sample

Gender is evenly divided. Overall, about one in four students (24.4%) are members of a minority population or of multiple-race background. The proportion of minority students was higher among younger students. Just under a quarter of students (23.8%) reported getting a free or reduced-price lunch at school at the time of survey. This was used as a proxy measure for low-income status (see Table 1 in Appendix for details).

Appendix

Table 1. Socio-demographic characteristics of survey participants

	Grade 6 (n=46,787) %	Grade 9 (n=47,387) %	Grade 12 (n=36,734) %	Total (n=130,908) %
Gender				
Female	50.0	50.4	50.3	50.2
Race/Ethnicity ¹				
White	72.3	74.9	80.3	75.6
American Indian	2.3	1.4	0.9	1.6
Black	6.5	5.6	5.0	5.7
Asian/Pacific Islander	5.5	5.7	5.5	5.6
Hispanic	7.8	6.8	4.7	6.5
Multiple race	5.6	5.5	3.7	5.0
Household income				
Currently get a free or reduced-price lunch at school	32.7	27.4	22.7	27.9

¹ All the race categories (white, American Indian, black, Asian/Pacific Islander and multiple race) are non-Hispanic.

Table 2. Prevalence of tobacco use by socio-demographic factors — Minnesota Student Survey, 2010

Category	Smoked cigarettes at least 1 day during the 30 days before the survey			Used other tobacco products ¹ at least 1 day during the 30 days before the survey		
	Male %	Female %	Total %	Male %	Female %	Total %
Grade						
6	2.1	1.7	1.9	2.2	1.1	1.6
9	10.0	10.3	10.2	12.0	4.4	8.1
12	24.1	19.4	21.7	35.4	10.2	22.5
Race/Ethnicity						
White	11.0	9.9	10.5	16.1	4.7	10.3
American Indian	17.2	20.7	18.8	17.8	8.6	13.6
Black	9.9	6.3	8.2	12.0	5.3	8.7
Asian/Pacific Islander	8.0	5.8	6.9	6.3	2.3	4.2
Hispanic	13.6	12.2	12.9	14.1	7.3	10.5
Multiple race	13.4	12.0	12.7	15.6	6.2	10.5
Household income ²						
Low	13.2	12.6	12.9	13.7	5.9	9.6
High	10.6	9.0	9.8	15.9	4.6	10.2
Total	11.1	9.8	10.4	15.0	4.9	9.8

¹ Other tobacco products include cigars, cigarillos, little cigars, chewing tobacco, snuff or dip.

² Those who reported getting free or reduced-price lunch at school are coded as low-income household.

Table 3. Prevalence of alcohol use by socio-demographic factors — Minnesota Student Survey, 2010

Category	Drank alcohol on at least 1 day during the 30 days before the survey			Had 5 or more drinks in a row at least once in 2 weeks before the survey ¹		
	Male %	Female %	Total %	Male %	Female %	Total %
Grade						
6	4.0	3.3	3.7	--	--	--
9	18.5	20.1	19.3	10.1	9.9	10.0
12	42.1	39.4	40.7	28.6	20.5	24.4
Race/Ethnicity						
White	20.6	20.4	20.5	18.5	14.6	16.5
American Indian	21.3	22.4	21.8	25.9	22.5	24.4
Black	14.6	13.6	14.1	13.8	9.2	11.6
Asian/Pacific Islander	15.1	13.3	14.2	13.4	10.5	11.9
Hispanic	22.6	22.9	22.8	21.8	18.8	20.2
Multiple race	21.0	22.3	21.7	18.4	17.2	17.8
Household income ²						
Low	19.1	20.3	19.7	18.6	16.3	17.4
High	20.6	19.9	20.3	18.3	14.1	16.4
Total	19.8	19.6	19.7	18.3	14.6	16.4

¹ This was not asked of 6th graders.

² Those who reported getting free or reduced-price lunch at school are coded as low-income household.

Table 4. Prevalence of marijuana use by socio-demographic factors — Minnesota Student Survey, 2010

Category	Used marijuana during the 12 months before the survey			Used marijuana on one or more days during the 30 days before the survey		
	Male %	Female %	Total %	Male %	Female %	Total %
Grade						
6	2.2	1.3	1.8	1.3	0.9	1.1
9	16.2	13.8	14.9	10.9	8.8	9.8
12	34.6	26.8	30.6	24.6	15.8	20.0
Race/Ethnicity						
White	15.6	12.6	14.1	10.5	7.5	9.0
American Indian	25.1	23.1	24.2	17.1	16.9	17.0
Black	20.4	13.6	17.1	15.3	9.3	12.4
Asian/Pacific Islander	10.3	6.2	8.2	6.9	3.4	5.1
Hispanic	22.2	18.2	20.1	15.5	11.5	13.4
Multiple race	21.8	19.3	20.4	15.8	12.4	14.0
Household income ¹						
Low	17.9	15.7	16.8	12.7	10.0	11.3
High	16.0	12.3	14.2	10.9	7.3	9.1
Total	16.2	12.9	14.5	11.1	7.9	9.5

¹ Those who reported getting free or reduced-price lunch at school are coded as low-income household.

Table 5. Prevalence of using drugs other than marijuana by socio-demographic factors — Minnesota Student Survey, 2010

Category	Used drugs other than marijuana during the 12 months before the survey			Used drugs other than marijuana on one or more days of the 30 days before the survey		
	Male %	Female %	Total %	Male %	Female %	Total %
Grade						
6	4.6	3.9	4.3	1.6	1.5	1.5
9	6.9	7.6	7.2	4.1	4.7	4.4
12	12.3	8.4	10.3	7.6	4.8	6.1
Race/Ethnicity						
White	6.9	5.9	6.4	3.8	3.3	3.5
American Indian	10.9	13.7	12.1	6.3	8.6	7.3
Black	9.5	6.1	7.8	5.5	2.8	4.1
Asian/Pacific Islander	5.3	4.1	4.7	3.5	2.0	2.7
Hispanic	11.9	10.7	11.3	6.4	5.8	6.1
Multiple race	10.9	10.3	10.6	6.0	5.8	5.8
Household income ¹						
Low	8.9	8.5	8.7	5.1	4.5	4.8
High	7.2	5.8	6.5	3.9	3.3	3.6
Total	7.6	6.5	7.0	4.2	3.5	3.8

¹ Those who reported getting free or reduced-price lunch at school are coded as low-income household.