

# GAMBLING BEHAVIORS OF MN STUDENTS

Findings from the 2016 Minnesota Student Survey

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In the 2016 Minnesota Student Survey (MSS), several questions about gambling were asked to students in grades 8, 9 and 11 as follows:

*The next questions are about gambling. By gambling we mean when you bet money or something else of value so that you can win or gain money or something else.*

*During the last 12 months how often have you done the following gambling/betting activities?*

*Played cards, bet on sports teams or games of personal skill like video gaming, pool, golf or bowling.*

*Bought lottery tickets or scratch offs.*

*Gambled in a casino.*

*Gambled for money online.*

The response options were *not at all; less than once a month; about once a month; about once a week; 2 to 6 times a week; daily.*

The following additional questions were then asked to those students who reported gambling during the past year:

*During the last 12 months, how often have you ...*

*... hidden your gambling/betting from your parents, other family members or teachers?*

*... felt that you might have a problem with gambling/betting?*

*... skipped hanging out with friends who do not gamble/bet to hang out with friends who do gamble/bet?*

The response options were *never; sometimes; many times; all of the time.*

For the students in grade 5, only one question was asked about gambling in general with a dichotomous response category of yes/no:

*During the last 12 months, have you done any gambling/betting, such as playing cards, betting on sports teams or games of personal skill like video gaming, pool, golf or bowling, or buying lottery tickets/scratch offs?*

This report summarizes the findings from these questions on gambling in the 2016 MSS. The detailed information about the survey and the socio-demographic characteristics of participating students can be found in the Appendix.

### Gambling among students in grades 8, 9 and 11

Overall, about one in three (32.1%) students in grades 8, 9 and 11 reported that they had participated in some type of gambling activities during the past year before the survey. As seen in Table 1, the prevalence did not vary substantially across the grades or household income levels. On the other hand, male students were about twice as likely as female students to have gambled during the past year (42.7% vs. 21.7%). American Indian students had the highest

prevalence of gambling with about four in ten (40.6%) reporting to have gambled during the past year, followed by Hispanic students (35.7%) and students with multiple racial background (34.2%).

Table 1. Prevalence of past-year gambling among students in grades 8, 9 and 11.

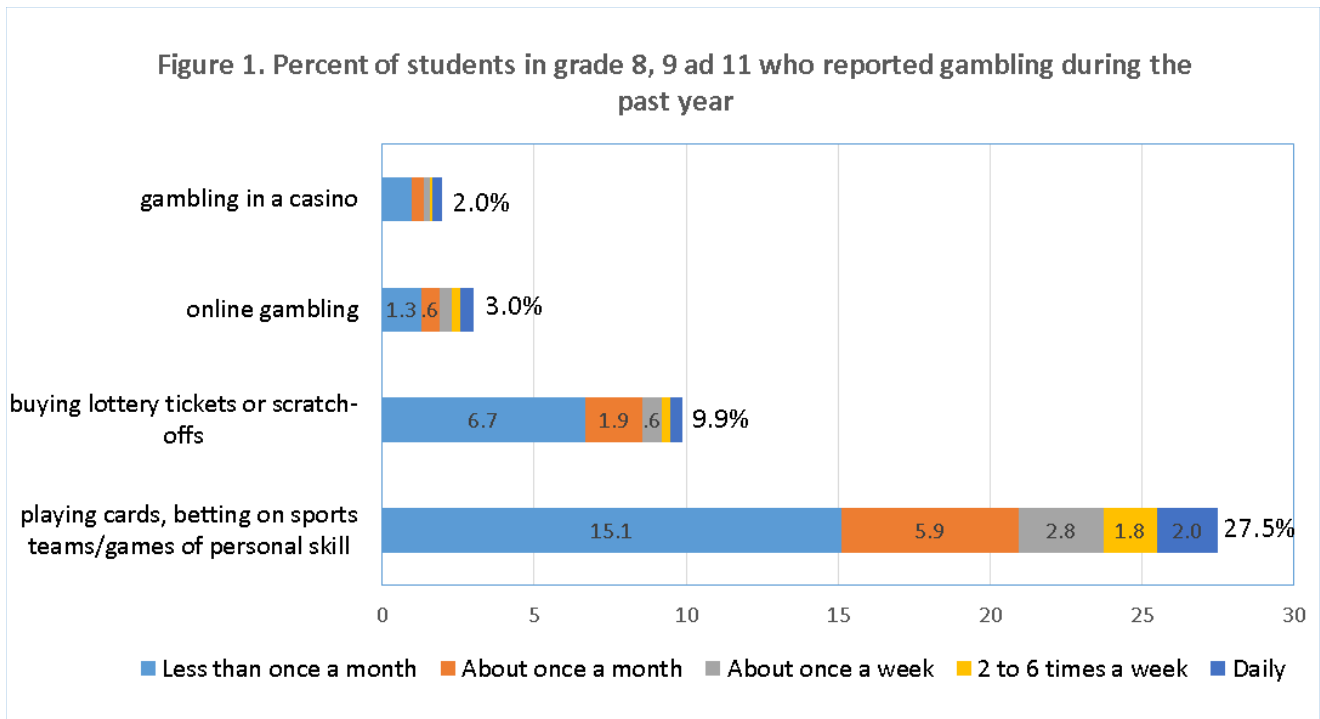
		Any gambling during past year (%)
Grade	8	32.9
	9	31.9
	11	31.4
Gender	Female	21.7
	Male	42.7
Race/Ethnicity <sup>1</sup>	White	31.8
	American Indian	40.6
	Black	29.2
	Asian/Pacific Islander	29.2
	Hispanic	35.7
	Multiple race	34.2
Household income <sup>2</sup>	Low	32.2
	High	32.2
Total		32.1

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

<sup>2</sup> Household income was based on a proxy measure of getting free or reduced-price lunch at school. The students who were getting subsidized lunch at school are categorized as low income household and the others as high income household.

Figure 1 shows the prevalence of each gambling activity reported by students in grades 8, 9 and 11. Playing cards or betting on sports teams/games of personal skill was the most popular gambling activity, with more than a quarter of the students (27.5%) saying that they had done this type of gambling during the past year: 15% of the students in grades 8, 9 and 11 did it less than once a month, 5.9% about once a month and 6.6% about once a week or more often.

About one in ten (9.9%) students in grades 8, 9 and 11 reported that they bought lottery tickets or scratch offs during the past year. Just over 1% of the students reported doing it frequently during the past year -- about once a week (0.6%), 2 to 6 times a week (0.3%) or daily (0.4%).



Online gambling and gambling in a casino were reported by 3.0% and 2.0% of the students, respectively. While the prevalence of online gambling was less than half the prevalence of buying lottery tickets or scratch offs, the rate of frequent gambling was about the same for both types of gambling: 1.2% of students reported doing online gambling about once a week or more often and 1.3% reported buying lottery tickets or scratch offs about once a week or more often.

Table 2 shows the prevalence of each gambling activity by socio-demographic factors. For all of the gambling activities measured in the survey, no substantial variations across grades were found with one exception: 11<sup>th</sup> graders were more likely than those in grades 8 and 9 to report gambling in a casino during the past year (2.7% vs. 1.7% and 1.6%, respectively).

Across all four types of gambling activities, the prevalence was substantially higher among males than females. During the past year, 11.4% of male students, compared to 8.4% of female students, bought lottery tickets or scratch offs. The gender difference was even larger for the other gambling activities: Compared to females, male students in grades 8, 9 and 11 were more than twice as likely to have played cards or bet on sports teams/games of personal skill (38.5% vs. 16.8%), three times as likely to have gambled in a casino (3.0% vs. 1.0%) and more than six times as likely to have gambled online (5.3% vs. 0.8%) during the past year.

American Indian students had the highest prevalence of gambling across all four groups of gambling activities: They were about twice as likely as white students to have bought lottery tickets/scratch offs (18.7% vs 9.3%) and gambled online (5.4% vs. 2.7%), and about five times as likely to have gambled in a casino (7.4% vs. 1.5%).

Table 2. Percent of students in grades 8, 9 and 11 who reported each gambling activity during the past year by socio-demographic factors.

	Played cards, bet on sports teams/games of personal skill (%)	Bought lottery tickets/scratch offs (%)	Gambled for money online (%)	Gambled in a casino (%)
Grade				
8	27.9	10.3	2.8	1.7
9	27.5	9.5	3.0	1.6
11	27.0	9.8	3.3	2.7
Gender				
Female	16.8	8.4	0.8	1.0
Male	38.5	11.4	5.3	3.0
Race/Ethnicity <sup>1</sup>				
White	27.4	9.3	2.7	1.5
American Indian	32.5	18.7	5.4	7.4
Black	24.9	9.8	4.4	4.2
Asian/Pacific Islander	24.9	8.0	3.0	1.6
Hispanic	29.4	13.8	3.8	3.0
Multiple race	29.2	10.6	3.7	2.4
Household income <sup>2</sup>				
Low	27.0	11.5	3.8	3.0
High	27.8	9.3	2.7	1.6
Total	27.5	9.9	3.0	2.0

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

<sup>2</sup> Household income was based on a proxy measure of getting free or reduced-price lunch at school. The students who were getting subsidized lunch at school are categorized as low income household and the others as high income household.

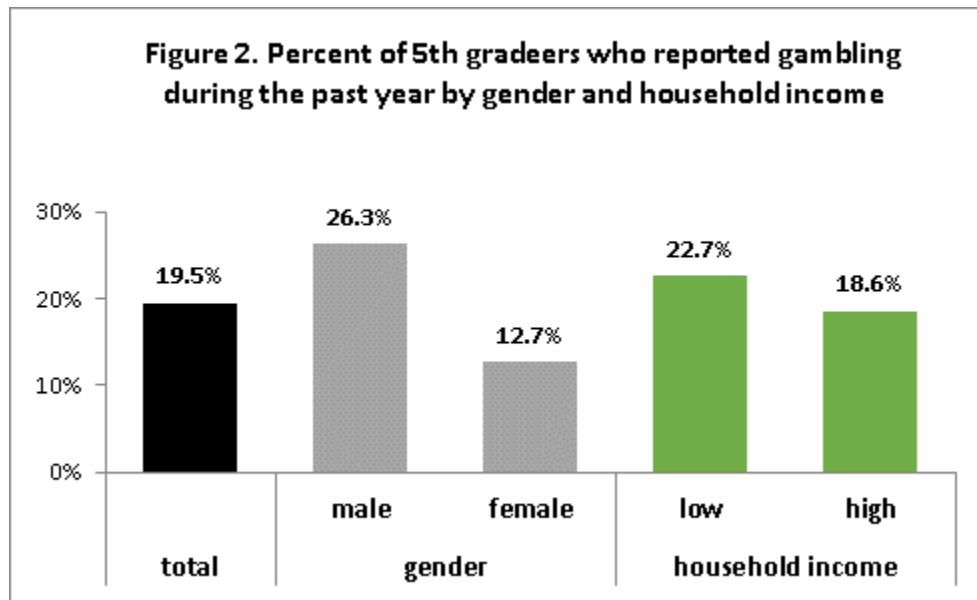
Hispanics and those with multiple racial background were consistently more likely than white students to have gambled during the past year. Black students, on the other hand, showed a unique pattern: They were slightly less likely than white students to report playing cards or betting on sports teams/games of personal skill (24.9% vs. 27.4%) and about the same as white students to have bought lottery tickets/scratch offs (9.8% vs. 9.3%), but more likely than white students to have gambled online or in a casino (4.4% vs. 2.7%; 4.2% vs. 1.5%, respectively).

When looking at the household income level in relation to gambling activity in general, no significant difference was found, as seen in Table 1. However, examining each gambling activity separately reveals a different story. While there was no substantial difference across household income levels in playing cards or betting on sports teams/games of personal skill, for all the other

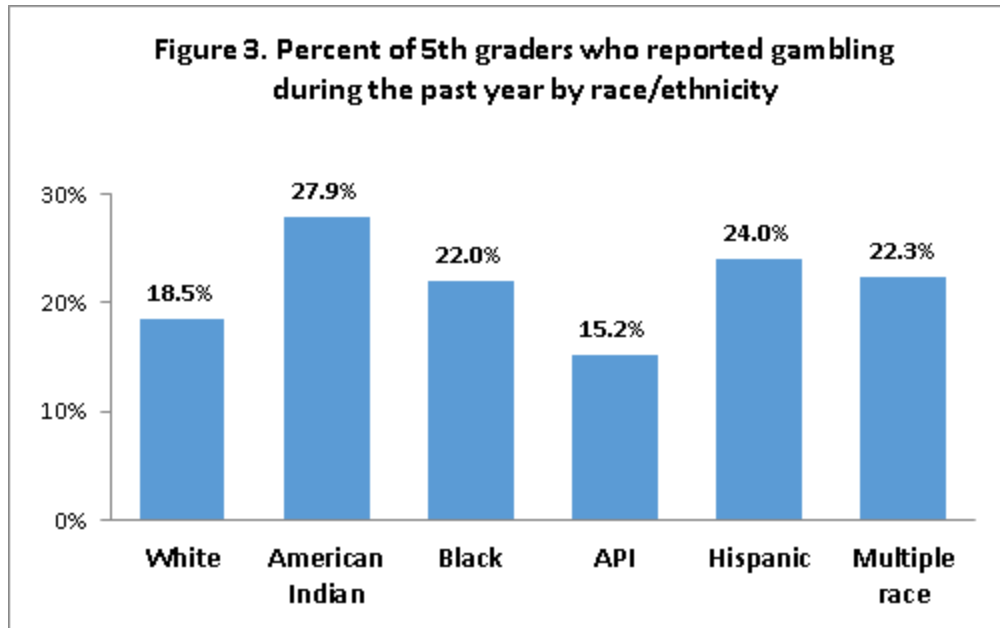
three groups of gambling activities, students from low income households were more likely than their more affluent counterparts to have gambled during the past year (see Table 2).

### Gambling among 5<sup>th</sup> graders

For students in grade 5, the 2016 MSS included one question asking about any gambling in general during the past year. About one in five (19.5%) of 5<sup>th</sup> graders reported that they had gambled during the past year. As seen among older students, boys in grade 5 were more likely than girls to have gambled during the past year (26.3% vs. 12.7%) and the 5<sup>th</sup> graders from low income households were more likely than their more affluent counterparts to have gambled during the past year (22.7% vs. 18.6%).



As seen among older students, American Indian students in grade 5 had the highest rate of gambling with almost three in ten (27.9%) reporting past-year gambling. All the other minority students in grade 5, except Asian/Pacific Islanders (API), had higher prevalence of gambling than white counterparts. The API 5<sup>th</sup> graders had the lowest gambling rate of 15.2% (see Figure 3).



### Gambling and substance use

To examine the relationship between gambling and substance use, the students in grades 8, 9 and 11 were divided into three subgroups: those who gambled once a week or more often during past year (frequent gambling group), those who gambled during the past year but with less frequency, and those who didn't gamble during the past year. If a student reported gambling once a week or more often on any of the four gambling activities asked in the survey s/he was categorized as the frequent gambling group. About 7.5% of the students in grades 8, 9 and 11 reported frequent gambling and additional 24.6% reported gambling with less frequency during the past year (Table 3).

While there was no substantial difference in the prevalence of frequent gambling across grades, male students were more than three times as likely as females to report frequent gambling during the past year (11.8% vs. 3.3%). All the minority subgroups, except API, were more likely than white students to report frequent gambling. American Indian students had the highest rate of frequent gambling with 13.4% reporting that they had gambled about once a week or more often with at least one of the four gambling activities asked in the survey. This is about twice of the rate among white students (6.6%).

An interesting interaction was found between household income level and the frequency of gambling. Students from low income households were more likely than their more affluent counterparts to report frequent gambling during the past year (9.6% vs. 6.7%). This relationship, however, was reversed for gambling with less frequency. That is, students from low income households were slightly less likely than their counterparts to report gambling once a month or less frequently during the past year (22.7% vs. 25.4%). This reverse direction in relationship

between the two levels of gambling frequency and the household income level resulted in obscuring the relationship between the overall gambling and household income level as seen earlier in Table 1.

Table 3. Percent of students in grades 8, 9 and 11 who reported frequent gambling, any gambling and no gambling during the past year by socio-demographic factors.

	Students who gambled once a week or more often (%)	Students who gambled less frequently (%)	Student who did not gamble (%)
Grade			
8	7.5	25.4	67.1
9	7.6	24.3	68.1
11	7.4	24.0	68.6
Gender			
Female	3.3	18.4	78.3
Male	11.8	31.0	57.3
Race/Ethnicity <sup>1</sup>			
White	6.6	25.2	68.2
American Indian	13.4	27.2	59.4
Black	10.0	19.1	70.8
Asian/Pacific Islander	7.6	21.5	70.8
Hispanic	10.4	25.2	64.3
Multiple race	9.3	24.9	65.8
Household income <sup>2</sup>			
Low	9.6	22.7	67.8
High	6.7	25.4	67.8
Total	7.5	24.6	67.9

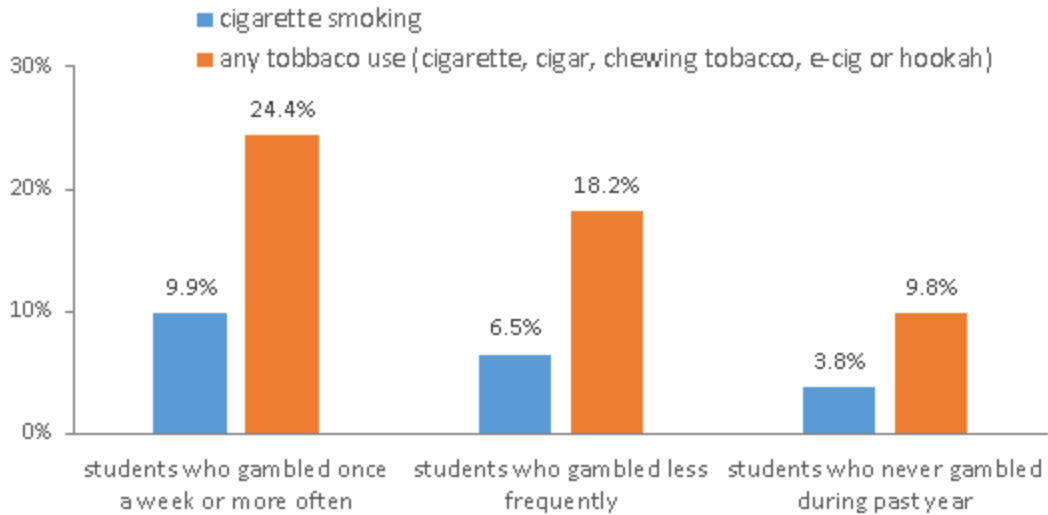
<sup>1</sup> All the race categories (white, American Indian, black, Asian/Pacific Islander and multiple race) are non-Hispanic.

<sup>2</sup> Household income was based on a proxy measure of getting free or reduced-price lunch at school. The students who were getting subsidized lunch at school are categorized as low income household and the others as high income household.

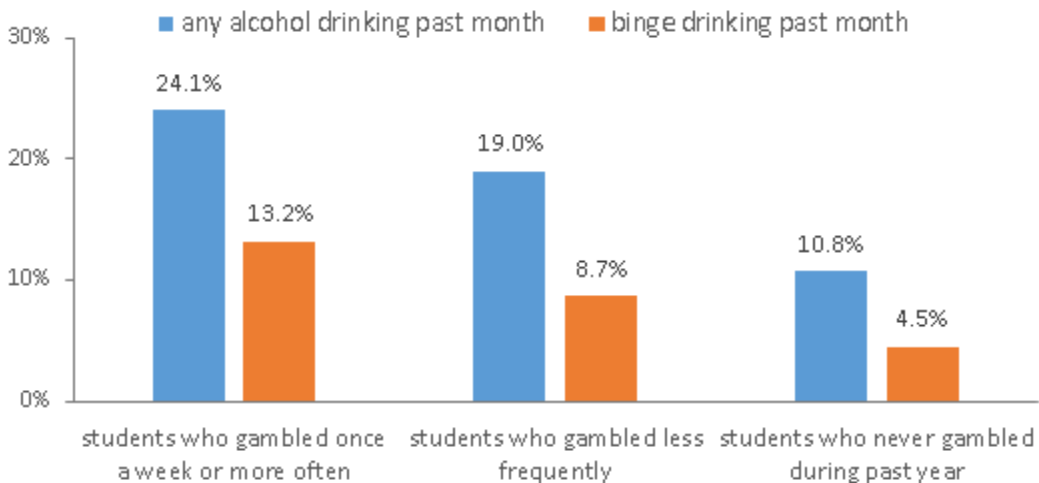
The following three charts show the prevalence of substance use (tobacco, alcohol, marijuana and prescription drugs) across the three subgroups of students by their gambling activities during the past year. Across all the substances examined, students who gambled during the past year were more likely than those who did not gamble to have used a substance. In addition, the prevalence of substance use was higher among the frequent gambling students even when it was compared to those who gambled less frequently.



**Figure 4. Percent of students in grades 8, 9 & 11 who reported tobacco use during the past 30 days by their gambling behavior during past year**



**Figure 5. Percent of students in grades 8, 9 & 11 who reported drinking during the past 30 days by their gambling behavior during past year**



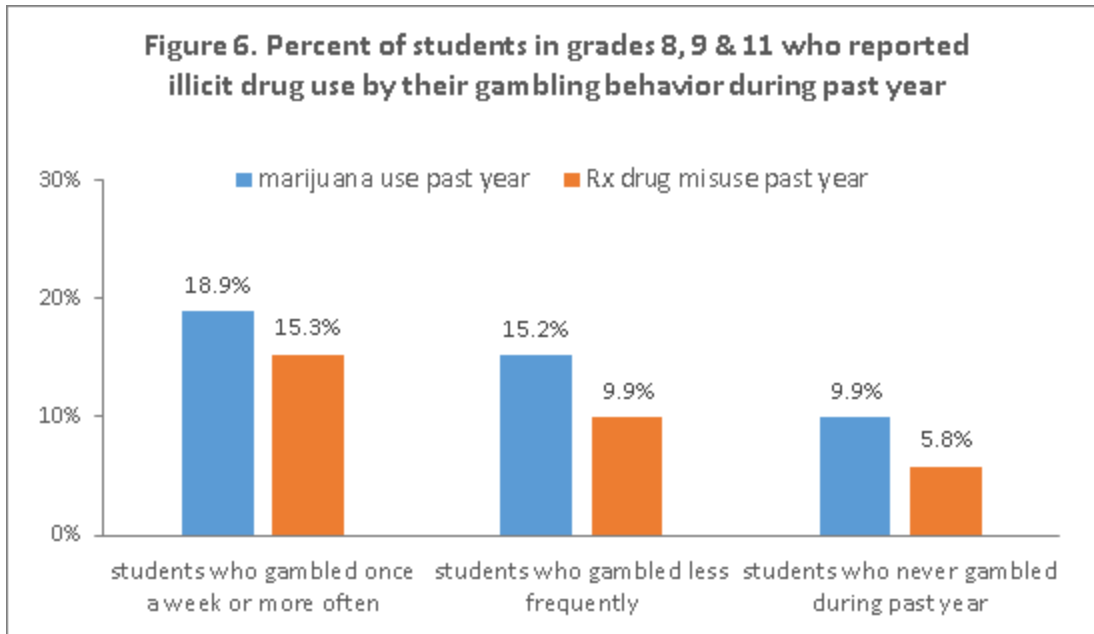


Figure 4 shows that the students in grades 8, 9 and 11 who gambled frequently during the past year were more than twice as likely as non-gambling students to report cigarette smoking as well as use of any tobacco products (cigarette, cigar, chewing tobacco, e-cigarette and hookah) during the past 30 days (9.9% vs. 3.8% and 24.4% vs. 9.8%, respectively). Even when compared to those who gambled but less frequently, the students who gambled frequently were more likely to smoke cigarettes or use any tobacco products during the past 30 days (9.9% vs. 6.5% and 24.4% vs. 18.2%, respectively).

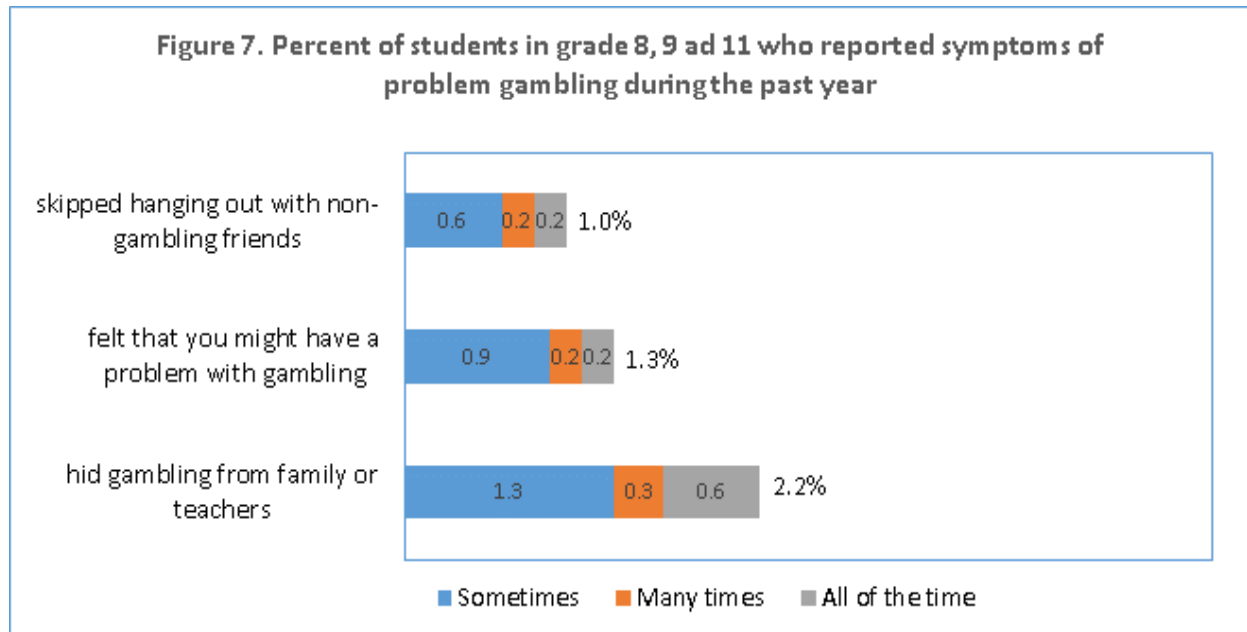
A similar pattern was observed for both alcohol and illicit drug use (see Figures 5 and 6). Students in grades 8, 9 and 11 who gambled frequently during the past year were more likely than students who gambled less frequently or those who never gambled to have drunk alcohol during the past 30 days (24.1% vs. 19.0% or 10.8%, respectively). A similar pattern was observed for binge drinking (5 or more drinks in a row): 13.2% of the students who gambled frequently said that they had binged during the 30 days before the survey whereas the prevalence was 4.5% for non-gambling students and 8.7% for those who gambled less frequently.

About one in ten (9.9%) students in grades 8, 9 and 11 who never gambled during the past year reported using marijuana during the past year. The prevalence of marijuana use was 15.2% among those who gambled once a month or less frequently and it was even higher among those who gambled more frequently with almost one in five (18.9%) of them reporting marijuana use during the past year.

The prevalence of illicit use of prescription drugs during the past year was 5.8% among students in grades 8, 9 and 11 who never gambled during the past year. The rate went up to 9.9% among those who gambled once a month or less frequently and it was even higher among those who gambled more frequently with 15.3% of them reporting misuse of prescription drugs.

## Problem gambling, substance use disorders and suicide ideation/attempt

The 2016 MSS had several additional questions asking about symptoms related to problem gambling. About 2.2% of the students in grades 8, 9 and 11 reported that they had hidden their gambling/betting activities from parents, other family members or teachers during the past year (see Figure 7). In addition, 1.3% of the students in grades 8, 9 and 11 felt that they might have a problem with gambling and 1.0% had skipped hanging out with friends who did not gamble to hang out with friends who did gamble during the past year.



These three questions were derived by Randy Stinchfield at University of Minnesota from the Canadian Adolescent Gambling Inventory (CAGI) to estimate the prevalence of problem gambling using a brief adolescent gambling screen<sup>1</sup>. Following the scoring algorithm suggested by Randy Stinchfield, problem gambling prevalence is estimated from these questions. As seen in Table 4, 0.5% of students in grades 8, 9 and 11 were estimated to be problem gamblers. Male students were more likely than female students to be screened as problem gamblers (0.9% vs. 0.2%). Black students had the highest prevalence of problem gambling (1.5%) with other minorities, such as American Indian (1.0%), Hispanic (0.9%) and students with multi-racial background (0.9%), also having higher prevalence than white students (0.4%). Students from low-income households were twice more likely than their more affluent counterparts to be screened as problem gamblers (0.8% vs. 0.4%).

<sup>1</sup> More details on the psychometric and scoring algorithm of the brief adolescent gambling screen (BAGS) can be found in a report by Randy Stinchfield, "Development and Psychometric Evaluation of the Brief Adolescent Gambling Screen, derived from the Canadian Adolescent Gambling Inventory (CAGI) for the Minnesota Student Survey."

Table 4. Prevalence of problem gambling among students in grades 8, 9 and 11 by socio-demographic factors.

	Students in grades 8, 9 & 11 who are screened as problem gamblers (%)
Grade	
8	0.5
9	0.5
11	0.6
Gender	
Female	0.2
Male	0.9
Race/Ethnicity <sup>1</sup>	
White	0.4
American Indian	1.0
Black	1.5
Asian/Pacific Islander	0.4
Hispanic	0.9
Multiple race	0.9
Household income <sup>2</sup>	
Low	0.8
High	0.4
Total	0.5

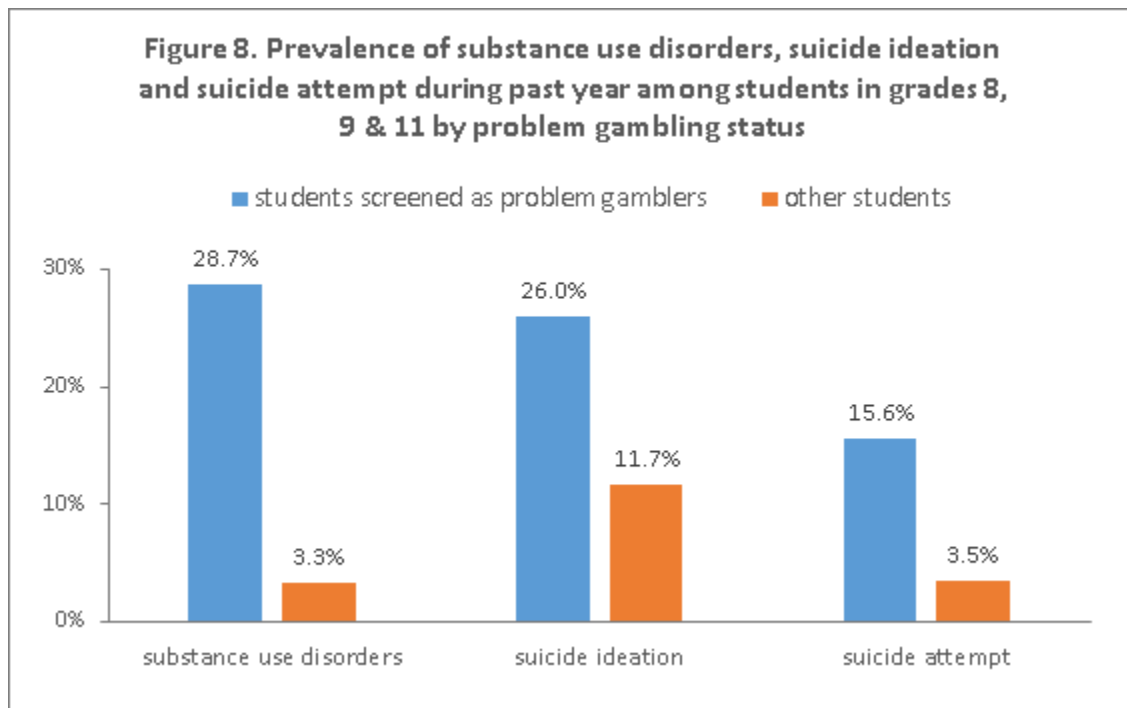


Figure 8 compares the prevalence substance use disorders, suicide ideation and suicide attempt during the past year across problem gambling status of students in grades 8, 9 and 11. Students who were screened as problem gamblers by the brief adolescent gambling screen were almost 9 times more likely to have a substance use disorder than those who were not (28.7% vs. 3.3%). More than one in four (26.0%) of the students who were screened as problem gamblers reported to have seriously considered attempting suicide during the past year, which was more than twice the rate for those who were not screened as problem gamblers (11.7%). The prevalence of actual attempt of suicide during the past year was almost five times higher among students who were screened as problem gamblers than those who were not (15.6% vs. 3.5%).

### In summary

- About one in three students in grades 8, 9 and 11 and about one in five of 5<sup>th</sup> graders reported gambling during the past year.
- The most popular gambling activity was playing cards, betting on sports teams or games of personal skill.
- Male students were more likely than females to report any gambling during the past year and to have gambled more frequently during the past year.
- American Indian students had the highest prevalence of gambling across all four types of gambling activities and had the highest rate of frequent gambling during the past year.
- Students from low income households were more likely to have gambled frequently during the past year.
- Students who have gambled during the past year were more likely than non-gambling students to report smoking, drinking and illicit drug use.
- Students who have gambled frequently during the past year were more likely than those who gambled less frequently to report smoking, drinking and illicit drug use.
- Statewide, the prevalence of problem gambling is estimated to be 0.5% among students in grades 8, 9 and 11.
- Male students were more likely than females to be screened as problem gambler (0.9% vs. 0.2%).
- Black students had the highest prevalence of problem gambling (1.5%) with other minorities, such as American Indian (1.0%), Hispanic (0.9%) and multi-racial students (0.9%), also having higher prevalence than white students (0.4%).
- Students from low-income households were twice more likely than their more affluent counterparts to be screened as problem gambler (0.8% vs. 0.4%).
- Students who were screened as problem gamblers were almost 9 times more likely than their counterparts to have a substance use disorder (28.7% vs. 3.3%).
- Students who were screened as problem gamblers were more likely than their counterparts to report suicide ideation and attempt during the past year (26.0% vs. 11.7%; 15.6% vs. 3.5%).

## Appendix

### Technical Note

#### Data

The Minnesota Student Survey (MSS) is a statewide school-based survey conducted every three years by an interagency team consisting of four state agencies (Education, Health, Human Services, and Public Safety).

MSS is not a sample-based but a census-like survey where all the public schools with grades 5, 8, 9 and 11 were invited to participate. In 2016, the MSS was administered between January and June of 2016 to public school students in grades 5, 8, 9 and 11<sup>2</sup>. In total, 168,733 students had participated with 41,865 5<sup>th</sup> graders, 44,983 8<sup>th</sup> graders, 45,309 9<sup>th</sup> graders, and 36,576 11<sup>th</sup> graders.

#### Questionnaires and the Mode of Administration

There were three levels of questionnaires: Level 1 for 5<sup>th</sup> graders, level 2 for 8<sup>th</sup> graders and level 3 for 9<sup>th</sup> and 11<sup>th</sup> graders. The majority of questions on substance use were asked only in Level 2 and 3 questionnaires. Thus, this report covers data from students in grades 8, 9 and 11.

In 2016, a web survey was the main mode of administration with limited number of paper surveys being offered only for the level 3 questionnaire on a first-come-first-serve basis. About a quarter of the 9<sup>th</sup> and 11<sup>th</sup> graders who participated in the 2016 MSS took the survey in paper mode. In the final total for the regular school data, there were 20,587 students who completed the survey in paper mode.

#### Participation 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. Parents were informed in advance about the administration and offered an opt-out option.

In 2016, 282 of the 330 public school districts (85.5%) agreed to participate. Overall, approximately 67.6% of the statewide student population enrolled in the four grades participated in the 2016 MSS (65.7% of fifth graders, 73.4% of eighth graders, 70.7% of ninth graders, and 60.5% of eleventh graders).

#### Socio-demographic description of participating students

Gender is evenly divided across all four grades. Overall, almost one third of students (31.7%) are members of a minority population or of multiple-race background. The proportion of minority students was higher among younger students (34.4% of 5<sup>th</sup> graders; 33.9% of 8<sup>th</sup> graders; 30.5% of 9<sup>th</sup> graders; 27.3% of 11<sup>th</sup> graders).

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<sup>2</sup> In addition to the regular public schools, MSS is administered to students in Alternative Learning Settings as well as those in Juvenile Correctional Facilities which are not included in the estimates reported here.

Just under three in ten students (29.0%) reported getting a free or reduced-price lunch at school. This is used as a proxy measure for low-income status throughout the analyses.

Table A-1. Socio-demographic characteristics of survey participants

	Grade 5 (n=41,865) %	Grade 8 (n=44,983) %	Grade 9 (n=45,309) %	Grade 11 (n=36,576) %	Total (n=168,733) %
Gender					
Female	49.4	49.6	49.5	49.6	49.5
Race/Ethnicity <sup>1</sup>					
White	65.6	66.1	69.5	72.7	68.3
American Indian	2.7	1.5	1.2	0.9	1.6
Black	9.2	7.2	6.2	5.6	7.1
Asian/Pacific Islander	5.9	5.9	6.2	6.4	6.1
Hispanic	9.6	10.8	9.4	8.2	9.6
Multiple race	6.9	8.4	7.6	6.1	7.3
Household income					
Currently get a free or reduced-price lunch at school	30.6	30.4	28.5	26.0	29.0

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