



Gambling Behaviors of MN Students:

Findings from the 2019 Minnesota Student Survey

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This report describes the gambling behaviors of Minnesota students based on the 2019 MN Student Survey (MSS) data. The 2019 MSS asked students in grades 8, 9 and 11 about their gambling behaviors during the past year. Specifically the survey asked about four groups of gambling activities: Playing cards, betting on sports or games of personal skill; buying lottery tickets or scratch offs; gambling in a casino; gambling for money online. Students who reported any gambling in the past year were asked three follow-up questions, which were used to estimate the prevalence of problem gambling. The actual questions used in the survey can be found in the Appendix.

The overall prevalence of past-year gambling as well as the type and frequency of gambling activities will be examined across various socio-demographic subgroups of students. Substance use, suicidal ideation and suicidal attempts by gambling students will be discussed and the prevalence of problem gambling will be estimated in relation to various socio-demographic factors.

Although the same questions of gambling were asked in 2016, there were some changes in the 2019 MSS that warrant precautions in comparison analysis across the years. It is recommended to use the 2019 MSS data as the baseline for trend analysis in gambling behaviors among students in MN. Thus, the comparison with the 2016 MSS data on gambling will be only briefly discussed at the end of this report. The trend results, however, should be interpreted with caution due to the limited comparability of the data between 2016 and 2019.

Gambling behaviors of students in grades 8, 9 and 11

Table 1 shows the percentage of students who, during the past year, participated in any of the four groups of gambling activities asked in the survey. Overall, about seven in ten students in grades 8, 9 and 11 never gambled during the past year.

About 32% of 8th graders reported that, during the past year, they had done at least one of the gambling activities asked in the survey. It was reported by 29% of 9th graders and 28% of 11th graders.

Gender difference in gambling participation was more pronounced with 39% of male students reporting past-year gambling compared to 21% of female students. American Indian students had the highest prevalence of gambling with 36% reporting to have gambled during the past year. Asian students had the lowest prevalence of gambling with 27% reporting that they had gambled in the past year.

Household income level of students was measured by a question asking if they were receiving a free or reduced-price lunch at school. The difference in the overall prevalence of past-year

gambling was not substantial between those who reported receiving a free or reduced-price lunch at school and the others (29% vs. 30%).

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

	Any gambling during past year (%)
Grade	
8	31.9
9	29.0
11	27.9
Gender	
Female	21.1
Male	38.8
Race/Ethnicity ¹	
American Indian	36.1
Asian	26.6
Black	28.8
Hispanic	30.9
Mixed	30.5
White	29.8
Free or Reduced-price Lunch at School	
Yes	28.9
No	30.2
Not Sure	29.0
Total	29.7

¹ Native Hawaiian and other Pacific Islander subgroup is not included in the table due to the small N size.

Figure 1 compares the prevalence of past-year gambling by students across the four types of gambling activities. Playing cards, betting on sports teams and betting on games of personal skill were the most popular gambling activities reported by students. Just over a quarter of the students in grades 8, 9 and 11 (26%) said that they had done this type of gambling during the past year: 15% reported that they did it less frequently than once a month, 5.5% about once a month and 5.3% about once a week or more often.

Buying lottery tickets or scratch-offs were reported by 7.5% of students in grade 8, 9 and 11. Gambling for money online and gambling in a casino were reported by 2.4% and 2.0% of the students, respectively.

Figure 1. Percent of students in grade 8, 9 ad 11 who reported gambling during the past year by gambling type and frequency

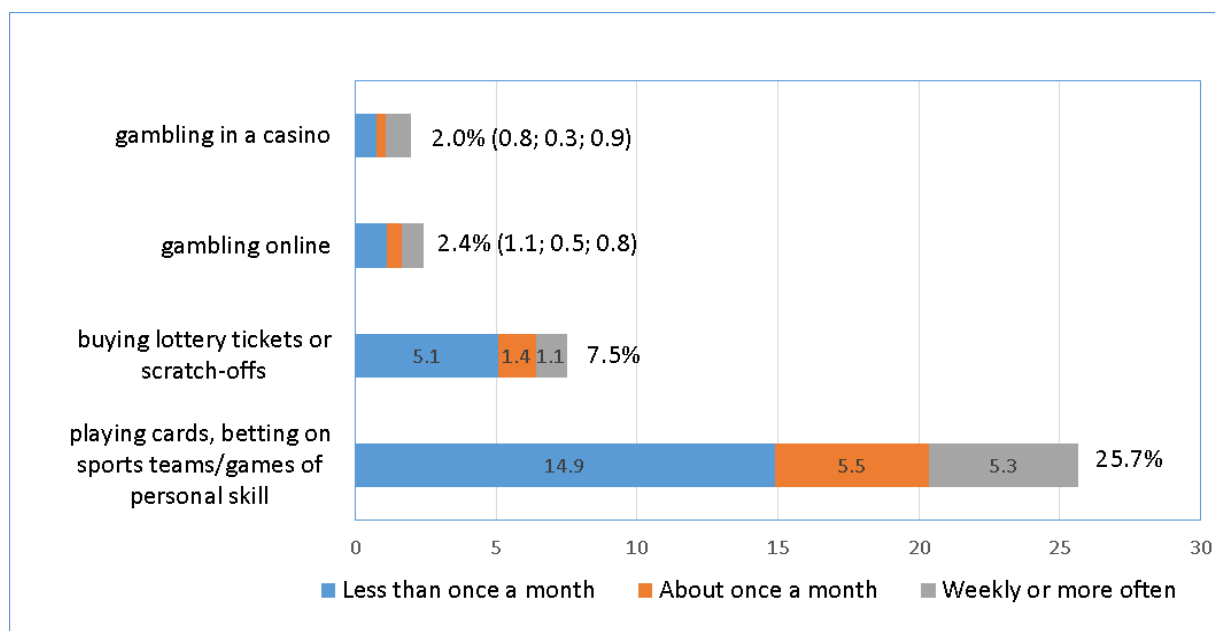


Table 2 shows the prevalence of each type of gambling activities by socio-demographic factors. Students in grade 8 were more likely than those in grade 9 or 11 to have played cards, bet on sports teams, bet on games of personal skill, or bought lottery tickets or scratch-offs. On the other hand, 11th graders were slightly more likely than younger students to report gambling online or gambling at a casino.

Across all four types of gambling, the prevalence was substantially higher among male students than female students: Compared to female counterparts, male students were about twice as likely to have played cards or bet on sports teams/games of personal skill (35% vs. 17%), three times more likely to have gambled in a casino (3.0% vs. 1.0%) and five times more likely to have gambled online (4.2% vs. 0.8%) during the past year.

American Indian students had the highest prevalence of gambling across all four groups of gambling activities: Compared to white students, American Indian students were about twice as likely to have bought lottery tickets or scratch offs (14% vs 7%), or to have gambled online (4.4% vs. 2.1%), and they were more than three times as likely to have gambled in a casino (5.8% vs. 1.6%). Black students were more likely than white students to have gambled online (4.4% vs. 2.1%) or in a casino (3.0% vs. 1.6%).

Table 2. Percentage of students in grades 8, 9 and 11 who reported each type of gambling activity in the past year.

	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	27.5	8.6	2.2	1.9
9	25.1	6.9	2.4	1.8
11	23.9	6.7	2.7	2.4
Gender				
Female	17.1	6.6	0.8	1.0
Male	34.7	8.4	4.2	3.0
Race/Ethnicity ¹				
American Indian	29.4	14.3	4.4	5.8
Asian	23.6	5.1	2.2	1.3
Black	24.0	7.4	4.4	4.8
Hispanic	25.8	9.5	2.9	3.0
Mixed	25.6	8.8	3.1	2.6
White	25.9	7.3	2.1	1.6
Free or Reduced-price Lunch at School				
Yes	24.0	8.4	3.2	2.9
No	26.5	7.2	2.2	1.6
Not Sure	24.7	7.5	2.4	2.2

¹ Native Hawaiian and other Pacific Islander subgroup is not included in the table due to the small N size.

When the overall prevalence of gambling was examined in Table 1 there was no substantial difference found across the household income level. However, examining each type of gambling activities separately reveals an interesting relationship between household income and students' gambling behavior (see Table 2).

Students from low-income households were more likely than their counterparts to have gambled in a casino, gambled online or bought lottery tickets or scratch offs during the past year. The difference was small but consistent across the three groups of gambling activities. However, this relationship was obscured in the overall gambling prevalence by the reverse correlation found in the fourth type of gambling, that is, playing cards, betting on sports teams

or betting on games of personal skill, for which students from low-income households were less likely to participate than their more affluent counterparts.

Frequent gambling

To further examine the gambling behavior of students, the students were divided into three groups: those who gambled once a week or more often (frequent gambling group), those who gambled during the past year but with less frequency, and those who didn't gamble at all during the past year.

Table 3. Socio-demographic characteristic of students in grades 8, 9 and 11 who gambled once a week or more often, who gambled less frequently and who did not gamble at all during the past year.

	Students who gambled once a week or more often (%)	Students who gambled less frequently (%)	Student who never gambled past year (%)
Grade			
8	7.3	24.6	68.1
9	6.4	22.6	71.0
11	5.8	22.1	72.1
Gender			
Female	3.4	17.7	78.9
Male	9.8	28.9	61.2
Race/Ethnicity ¹			
American Indian	12.2	24.0	63.9
Asian	6.2	20.3	73.4
Black	11.3	17.5	71.2
Hispanic	8.6	22.2	69.1
Mixed	7.2	23.3	69.5
White	5.7	24.1	70.2
Free or Reduced-price Lunch at School			
Yes	8.4	20.5	71.1
No	5.7	24.5	69.8
Not Sure	7.6	21.5	71.0
Total	6.6	23.2	70.3

¹ Native Hawaiian and other Pacific Islander subgroup is not included in the table due to the small N size.

Students who reported gambling once a week or more often on any of the four gambling activities asked in the survey were coded into the frequent gambling group. About 6.6% of the students reported frequent gambling with additional 23% gambling less frequently during the past year (Table 3).

Male students were more than twice as likely as females to have gambled frequently during the past year (9.8% vs. 3.4%). Frequent gambling was reported by 5.7% among white students and the rate was higher for all the other racial/ethnic subgroups of students. Especially American Indians and black students stand out with 12% and 11% respectively, reporting that they gambled once a week or more often during the past year.

An interesting interaction was found between household income and the frequency of gambling. Students from low income households were more likely than their counterparts to have gambled weekly or more often during the past year (8.4% vs. 5.7%). This relationship, however, was reversed for less frequent gambling. That is, students from low income households were less likely than their counterparts to report gambling once a month or less frequently during the past year (21% vs. 25%).

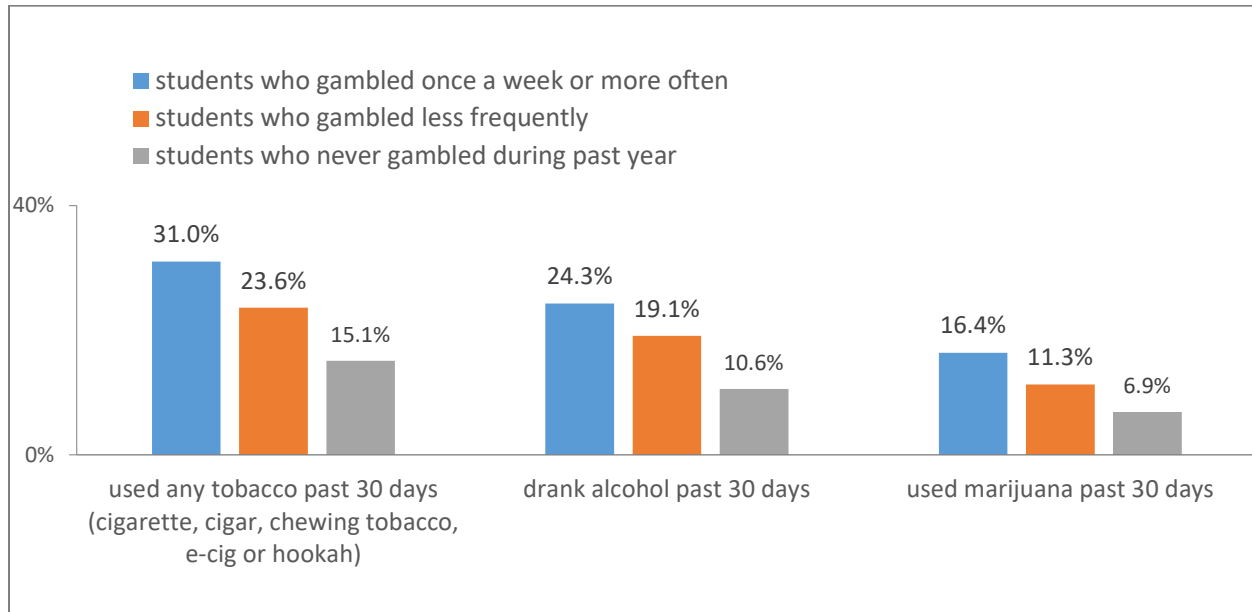
Gambling and substance use

To examine the relationship between substance use and gambling behaviors of students, the use of tobacco products, alcohol and marijuana during the past 30 days were examined across three subgroups of students by their gambling activities during the past year—those who gambled once a week or more often, those who gambled less frequently and those who never gambled in the past year.

Across all three substances, students who gambled during the past year were more likely than those who never gambled to report substance use during the 30 days before the survey. For example, 15% of students in grades 8, 9 and 11 who never gambled during the past year reported using a tobacco product in the past 30 days. It was reported by 31% of those who gambled weekly or more often and 24% of those who gambled less frequently. A similar pattern of relationship was observed for drinking and marijuana use (see Figure 2).

Across all three substances, students who gambled frequently were more than twice as likely as those who did not gamble at all to report its use in the past 30 days (31% vs. 15% for tobacco, 24% vs. 11% for alcohol and 16% vs. 7% for marijuana).

Figure 2. Prevalence of substance use among students in grade 8, 9 ad 11 by their gambling behavior



Problem gambling, substance use disorder and suicide ideation/attempt

All the students who reported any gambling during the past year were asked a brief adolescent gambling screen (BAGS) ¹ questions. BAGS is a three-item screener for adolescent problem gambling. About 2% of students in grades 8, 9 and 11 said that they had hidden their gambling or betting activities from parents, other family members or teachers during the past year. In addition, 1.3% of the students felt that they might have a problem with gambling and 1% had skipped hanging out with friends who did not gamble to hang out with friends who did gamble during the past year.

Following the scoring algorithm of BAGS, the prevalence of problem gambling was estimated. Table 4 shows the prevalence across socio-demographic factors. Overall, 0.5% of students in grades 8, 9 and 11 were estimated to have problem gambling. Male students were more likely than female students to have problem gambling (0.9% vs. 0.2%). Compared to white students, all subgroups of minority students were more likely to have problem gambling. The prevalence of problem gambling was estimated to be 0.4% among white students and the rate was about

¹ BAGS was developed by researchers at the University of Minnesota from Gambling Problem Severity Subscale (GPSS) of the Canadian Adolescent Gambling Inventory (CAGI). More details on the screener and its scoring algorithm can be found in an article by Randy Stinchfield et al. "Development and Psychometric Evaluation of the Brief Adolescent Gambling Screen (BAGS)" *Frontiers in Psychology* 2017; 8; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5742264/>

four times higher among American Indian students (1.7%), about three times higher among black students (1.3%), and more than twice among Hispanic students (1.0%). Students from low-income households were about twice as likely as their counterparts to have problem gambling (0.9% vs. 0.4%).

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	0.6
11	0.6
Gender	
Female	0.2
Male	0.9
Race/Ethnicity ¹	
American Indian	1.7
Asian	0.6
Black	1.3
Hispanic	1.0
Mixed	0.8
White	0.4
Free or Reduced-price Lunch at School	
Yes	0.9
No	0.4
Not Sure	0.7
Total	0.5

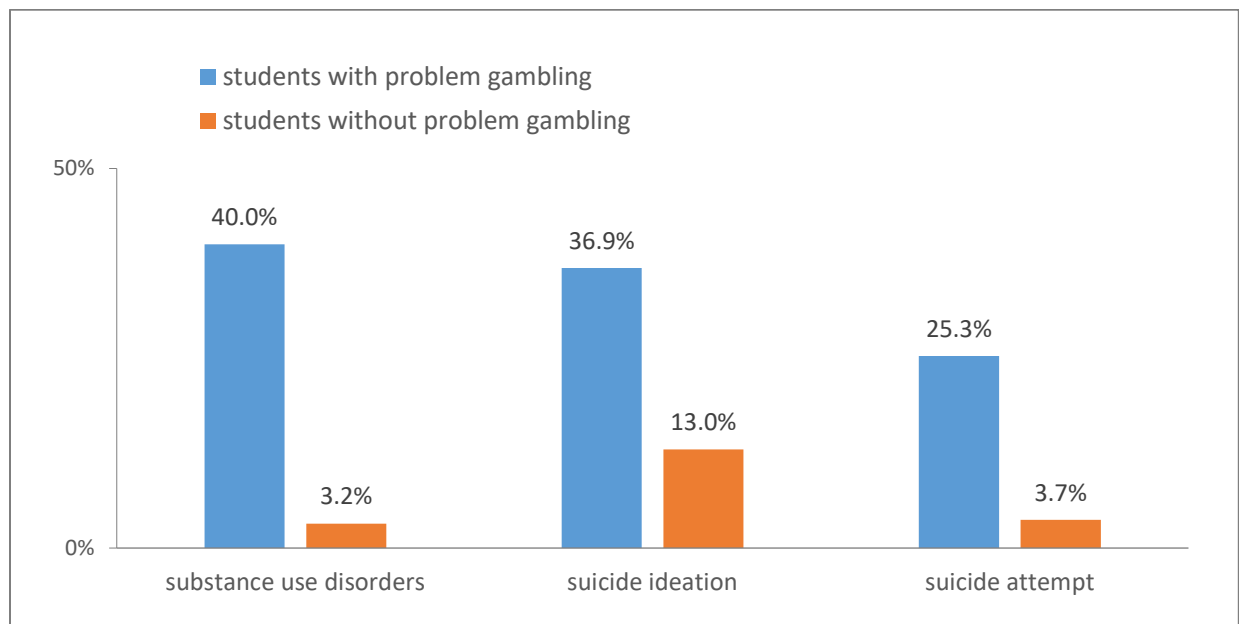
¹ Native Hawaiian and other Pacific Islander subgroup is not included in the table due to the small N size.

Figure 3 shows a striking difference in the prevalence of substance use disorder (SUD)², suicide ideation and suicide attempt during the past year between students who were screened to have problem gambling and the others. About four in ten (40%) students who were screened to have problem gambling also had SUD during the past year. This was more than ten times the

² SUD was estimated using DSM-5 criteria. For more details on SUD, go to: https://mn.gov/dhs/assets/sud-estimates-region_tcm1053-434424.pdf

rate among those without problem gambling (3.2%). Similarly, about 37% of students with problem gambling reported that they seriously considered attempting suicide during the past year. This was almost three times the rate for those without problem gambling (13%). The prevalence of suicide attempt during the past year was about seven times higher among students with problem gambling than those without problem gambling (25% vs. 3.7%).

Figure 3. Co-occurrence of problem gambling with SUD, suicide ideation and suicide attempt among students in grades 8, 9 and 11



Comparison of students' gambling behaviors: 2019 vs. 2016

The 2019 MSS was the first administration of the survey being conducted 100% in web-based mode. In 2016, schools were allowed to select between the traditional paper-and-pencil questionnaires and the web-based survey. In addition to this change in survey administration, there were some revisions in the questions asking about students' racial and ethnic background and household income, which were the major socio-demographic factors used in the analysis for this report. These changes could have affected how students answered these questions, limiting the comparability of the data. Any difference on students' gambling behaviors observed between 2016 and 2019 could be a result from these methodological changes instead of or in addition to the actual changes in students' behavior over the years. Therefore, this section should be read with that caveat in mind.

Table 5. Prevalence of past-year gambling among students in grades 8, 9 and 11 over the years.

		% of students who reported any gambling during past year		% of students who screened as problem gambler	
		2016 MSS	2019 MSS	2016 MSS	2019 MSS
Grade	8	32.9	31.9	0.5	0.5
	9	31.9	29.0	0.5	0.6
	11	31.5	27.9	0.6	0.6
Gender	Female	21.7	21.1	0.2	0.2
	Male	42.7	38.8	0.9	0.9
Race/Ethnicity ¹					
	American Indian	40.6	36.1	1.0	1.7
	Asian	28.8	26.6	0.4	0.6
	Black	29.2	28.8	1.5	1.3
	Hispanic	35.7	30.9	0.9	1.0
	Mixed	34.2	30.5	0.9	0.8
	White	31.8	29.8	0.4	0.4
Free or Reduced-price Lunch at School					
	Yes	32.2	28.9	0.8	0.9
	No	32.2	30.2	0.4	0.4
	Not Sure ²	N/A	29.0	N/A	0.7
Total		32.1	29.7	0.5	0.5

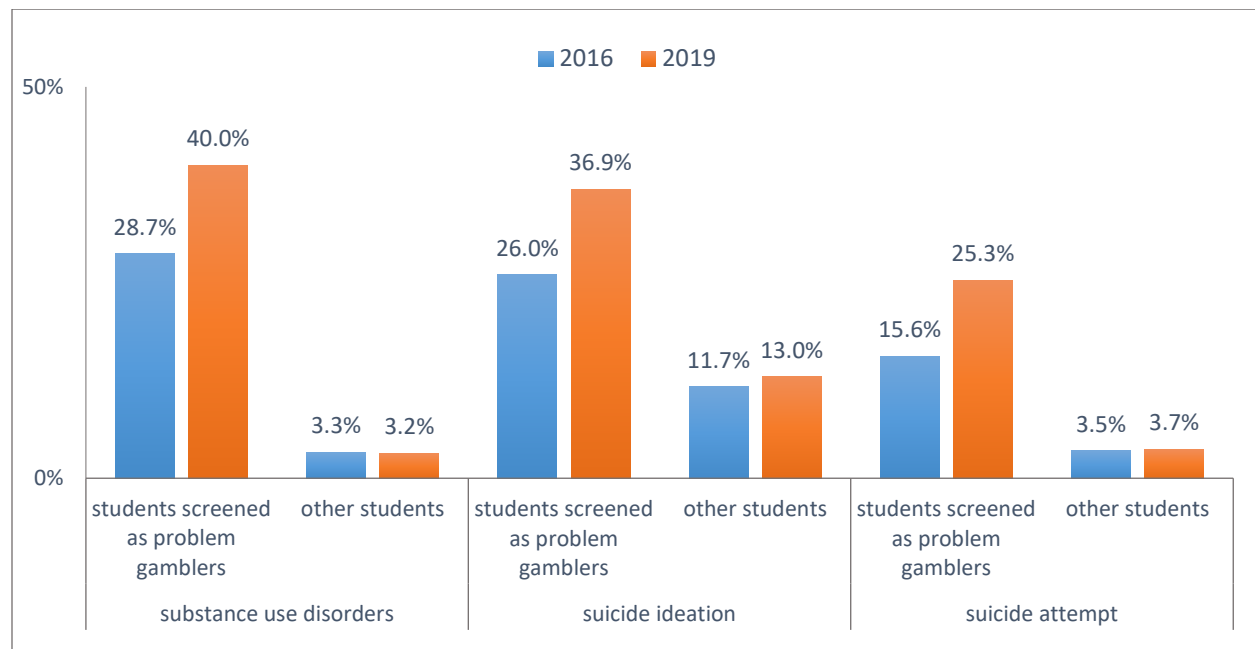
¹ There were some major revision in the race/ethnicity questions in 2019 affecting the comparability of racial/ethnic subgroups, especially for Hispanic and Mixed subgroups. In 2016, Hispanic was measured in a question asked separately from race question and all the students who marked “yes” to Hispanic were coded as Hispanic regardless of their answers to race question and all racial categories, including Mixed, were non-Hispanic. In 2019, however, Hispanic was one response option listed with all the racial subgroups in the same question and “Mixed” subgroup included those who selected Hispanic and at least one other response option.

² This was a newly added answering option in 2019.

Overall, the gambling prevalence among students in grade 8, 9 and 11 had slightly decreased over the years from 32% in 2016 to 30% in 2019. The change is small, yet consistent across various socio-demographic subgroups of students (see Table 5). The prevalence of problem gambling remained steady at 0.5% in both years. While the overall prevalence of problem gambling remained steady, it was increased among American Indian students from 1.0% in 2016 to 1.7% in 2019. This increase in problem gambling among American Indian students is

worth noting not only because it was the only pronounced change observed across various subgroups, but also because this increase happened while the prevalence of gambling among American Indian students was decreased from 41% in 2016 to 36% in 2019.

Figure 4. Co-occurrence of problem gambling with SUD, suicide ideation and suicide attempt among students in grades 8, 9 and 11: Comparison of 2016 and 2019 MSS data



Another trend worth noting is the increased comorbidity. The prevalence of SUD among students with problem gambling had increased from 29% in 2016 to 40% in 2019 while it remained steady among the students without problem gambling (3% both in 2016 and 2019). A similar trend was observed for suicide ideation and suicide attempt: Among students with problem gambling the prevalence of suicide ideation had increased from 26% in 2016 to 37% in 2019 whereas it was about the same among those without problem gambling (12% in 2016 and 13% in 2019). The prevalence of suicide attempt among students with problem gambling had increased from 16% in 2016 to 25% in 2019 whereas it stayed about the same at around 4% across the years among the students without problem gambling.

In summary

- About three in ten (30%) students in grades 8, 9 and 11 reported that they gambled during the past year, and 0.5% of students in grades 8, 9 and 11 were estimated to have problem gambling.
- The most popular gambling activity was playing cards and betting on sports teams or games of personal skill.
- Male students were more likely than females to report any gambling during the past year, to have gambled more frequently and to be screened as problem gamblers.
- American Indian students had the highest prevalence of gambling across all four types of gambling activities measured in the survey and had the highest rate of frequent gambling during the past year.
- American Indian and black students had the highest rates of problem gambling.
- Students from low income households were more likely than their counterparts to have gambled frequently during the past year and to be screened as problem gamblers.
- Students who gambled during the past year were more likely than non-gambling students to report substance use in the past month and suicide ideation and attempt during the past year; Students who gambled frequently during the past year were more likely than those who gambled less frequently to report substance use, suicide ideation and suicide attempt.
- While the overall prevalence of problem gambling stayed the same between 2016 and 2019, the comorbidity rate between problem gambling and other behavioral health issues, such as SUD, suicide ideation and suicide attempt, substantially increased over the years.

Appendix

The following are the questions asked about gambling to students in grades 8, 9 and 11 in the 2019 MN Student Survey:

During the last 12 months, how often have you done the following gambling/betting activities:

	Not at all	Less than once a month	About once a month	About once a week	2 to 6 times a week	Daily
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?						

To those students who reported any gambling during the past year, the following additional questions were asked:

During the last 12 months, how often have you:

	Never	Sometimes	Many times	All of the time
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?				