

Gambling and Technology Use Among Students in the Haliburton, Kawartha, Pine Ridge District Health Unit, 2017 Ontario Student Drug Use and Health Survey (OSDUHS)

There is increasing awareness that gambling (1) and technology use such as video gaming (1) (2) and social media (3) can be addictive and harmful like the use of alcohol or other substances. Addiction traditionally refers to the “problematic use of a substance” but can also include behaviours that result in the 4 C’s: craving, loss of control of amount or frequency of use, compulsion to use, and use despite consequences. (4) Risk factors for problem gambling among youth include various social (having a family member with a gambling problem, difficulty making friends, feeling disconnected from others), mental health (substance or alcohol use, depression or anxiety, trauma), and behavioural (excessive video game playing, impulsivity) factors, among others. (5) Risk factors for problem technology use include low self-esteem, bullying, family conflict, perfectionism, poor social adjustment, lack of resilience, and learning difficulties or exceptionalities. (6)

While there can be benefits and some fun derived from gambling and technology use, there are also risks, such as problem use, reduced well-being, and mental health issues. (5) (7) For gambling, additional risks include substance use issues, financial loss, relationship difficulties, and difficulties in school; (5) for technology use, additional risks include exposure to age-inappropriate content, increased personal disclosure online, media multitasking (which may weaken working memory and attention span), hyperactivity, and displacement of time that would be spent on physical activity or sleep. (7)

The purpose of this *inFORM* is to highlight findings on gambling, video gaming, technology use, and physical inactivity from the 2017 Ontario Student Drug Use and Health Survey (OSDUHS) within the Haliburton, Kawartha, Pine Ridge District Health Unit (HKPRDHU).

Methods & Data Notes

The OSDUHS is a population survey of Ontario students from grade 7 through grade 12, conducted every two-years, that is distributed within publicly-funded schools within Ontario. (8) The survey is self-administered, anonymous, and considered representative of all Ontario students in both English and French language schools, within the Public and Catholic School Boards. (8) In 2016/17, the HKPRDHU purchased an over-sample of the OSDUHS in order to obtain estimates for youth residing within the HKPR District. In total, there were 1215 surveys completed for the 2016/2017 OSDUHS survey by students within the HKPR District; 585 by elementary-school students and 630 by high-school students. Male students accounted for 43.4% and female students accounted for 55.6% of respondents. Surveys were completed for students in grade 7 (n=232), grade 8 (352), and grades 9 – 12 (629)[†]. The median age of respondent was 14 years of age (mean: 14.1; standard deviation (SD): 1.72).

[†]Two surveys did not report the grade of the student; summing the number of students by grade will not match the total sample size.

Results

Gambling

- Almost two-in-five (37.9%, 95% confidence interval (CI): 31.6, 44.5) grade 7 – 12 HKPRDHU students reported gambling money on at least one activity in the past 12-months. The estimate for HKPRDHU students is not significantly different than the rest of Ontario students ($p < 0.05$).
- The most common gambling activities among all grade 7 – 12 HKPRDHU students were on a dare or private bet (15.6%, 95% CI: 13.3, 18.3), card games (12.1%*, 95% CI: 7.9, 18.1), or on games of skill other than sports, video games, or online gambling (9.4%, 95% CI: 7.6, 11.7).
- Of grade 7 – 12 HKPRDHU students that reported gambling money in the past 12-months, the largest amount of money that most (87.6%, 95% CI: 84.1, 90.4) students gambled was less than \$50. The estimate for HKPRDHU students is not significantly different than the rest of Ontario students ($p < 0.05$).
- A small percentage (4.5%*, 95% CI: 2.7, 7.6) of grade 9 – 12 HKPRDHU students were found to have a gambling problem (low, moderate, or high-severity), although this was significantly lower ($p < 0.05$) than the rest of Ontario students (8.7%, 95% CI: 6.4, 11.7).

Screen use

- More than half (53.1%, 95% CI: 47.3, 58.8) of grade 7 – 12 HKPRDHU students reported averaging 3 or more hours a day of recreational time on a screen (such as watching videos, playing games, texting, or surfing the internet) in the past seven days, significantly lower than the rest of Ontario students (3 or more hours: 64.3%, 95% CI: 62.0, 66.7, $p < 0.05$).
- Additionally, one-in-five (20.5%, 95% CI: 16.6, 25.1) reported averaging 5 or more hours a day of recreational time in front of a screen, significantly lower than the rest of Ontario students (5 or more hours: 29.0%, 95% CI: 27.0, 31.0, $p < 0.05$).

Electronic device use

- Most (99.2%, 95% CI: 98.1, 99.6) grade 9 – 12 HKPRDHU students reported using electronic devices, such as smartphones, tablets, laptops, computers, or video game consoles, in their free time daily. The estimate for HKPRDHU students is significantly higher compared to the rest of Ontario students ($p < 0.05$).
- Most (83.0%, 95% CI: 76.6, 87.9) grade 9 – 12 HKPRDHU reported spending 2 or more hours of free time on electronic devices daily, and one-in-five (21.1%, 95% CI: 16.6, 26.3) reported spending 5 or more hours on electronic devices daily. Spending 5 or more hours on electronic devices each day is significantly lower among HKPRDHU students, compared to the rest of Ontario students (29.5%, 26.5, 32.7, $p < 0.05$).
- One-in-ten (10.3%*, 95% CI: 6.0, 17.1) grade 9 – 12 HKPRDHU students have a moderate or serious technology use problem, based on the Short Problematic Internet Use Test (SPIUT), significantly lower than the rest of Ontario students (18.1%, 95% CI: 16.2, 20.2, $p < 0.05$).
- The most common symptoms of a technology use problem among grade 9 – 12 HKPRDHU students were staying on electronic devices longer than intended (31.4% reported “quite often” or “very often”, 95% CI: 25.9, 37.5) and neglecting homework to spend time on electronic devices (18.6%*, 95% CI: 11.3, 29.1).

Video games

- One-in-five (20.3%, 95% CI: 16.5, 24.7) grade 7 – 12 HKPRDHU students reported playing video games daily or almost daily in the past 12-months, such as on a computer, television, cell phone, or an arcade. The estimate for HKPRDHU students is not significantly different than the rest of Ontario students ($p > 0.05$).
- Fewer than one-in-twelve (7.0%, 95% CI: 5.2, 9.3) grade 7 – 12 HKPRDHU students reported playing video games for 5 or more hours a day in the past 12-months. The estimate for HKPRDHU students is not significantly different than the rest of Ontario students ($p > 0.05$).
- One-in-ten (9.7%*, 95% CI: 6.5, 14.7) grade 7 – 12 HKPRDHU students have a probable video gaming problem. Among grade 7 – 12 HKPRDHU students that reported playing video games daily or almost daily in the past year, about one-in-four (26.6%*, 95% CI: 18.4, 36.8) have a probable video gaming problem. These estimates for HKPRDHU students are not significantly different than the rest of Ontario students ($p > 0.05$).
- The most common symptoms of a probable video gaming problem among HKPRDHU students were continuing to play if they did not win or achieve desired target (43.3%, 95% CI: 37.2, 49.6), continued to think about video games when not playing them (20.7%, 95% CI: 16.6, 25.6), and tried to control, cut back, stop playing video games, or played for longer than intended (20.5%, 95% CI: 15.8, 26.2).

Social media

- Most (87.2%, 95% CI: 81.5, 91.4) grade 7 – 12 HKPRDHU students reported using social media daily. The estimate for HKPRDHU students is not significantly different than the rest of Ontario students ($p > 0.05$).
- One-in-seven (14.0%, 95% CI: 10.8, 18.0) grade 7 – 12 HKPRDHU students reported using social media for 5 or more hours per day, which is significantly lower than the rest of Ontario students (20.2%, 95% CI: 17.5, 23.2, $p < 0.05$).

Public Health Messaging

Gambling

Protective factors against problem gambling in youth include good coping skills, positive family relationships, sense of belonging, healthy relationships, extracurricular activities, and discussing technology use guidelines for online gambling. (9) The risks and consequences of problem gambling can be reduced through the following recommendations for parents: (9)

- Talk with your child about gambling and the associated risks
- Help your child learn good coping skills
- Be aware of how your child uses technology
- Limit your child's access to money, including credit cards
- Discuss any debts acquired through gambling with your child and involve them in planning to pay debts off
- Do not involve your child in your own gambling activities
- Communicate with your child with a focus on listening, and spend time with them

Parents, children themselves, and others can also watch for common behavioural, emotional, financial, and health signs of problem gambling to know when to reach out for additional support. (10)

Screen use

Public Health Ontario (PHO) (11) recommends following Canadian Screen Time Guidelines:

- Less than 2 years of age: no screen time
- 2 to 4 years of age: less than 1 hour a day
- 5 to 17 years of age: less than 2 hours a day

To encourage healthier screen use, PHO also recommends that parents “use screens L.E.S.S.”: (11)

- Limit snacking at screens
- Enforce screen time rules
- Stand more and sit less
- Socialize away from screens

PHO also recommends that parents follow any screen use rules themselves to role model behaviour for their children. (11) The Canadian Paediatric Society also provides many recommendations for parents that fall under the four M’s: manage screen use, encourage meaningful screen use, model healthy screen use, and monitor for signs of problematic screen use. (7)

References

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10. **Centre for Addiction and Mental Health.** Problem Gambling. [Online] [Cited: January 9, 2020.] <https://www.camh.ca/en/health-info/mental-illness-and-addiction-index/problem-gambling>.
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Limitations

Only students attending a school in the Catholic or Public-School system were including in the sampling for the OSDUHS. Students attending private schools, students that are home-schooled, and school-aged children that are not attending school (dropped out) were not eligible to participate in the survey.

Although individual school boards agreed to allow the OSDUHS to be administered in their schools, the decision for a school to participate or not was at the discretion of the school's Principal, which may lead to over- or under-reporting for students in certain areas within the HKPRDHU's region.

All responses provided by the students are self-reported may be subject to some amount of bias—potentially more so with questions considered to be sensitive—however, it is not possible to confirm or refute the responses provided. Children absent on the day the survey was administered or children who declined to participate in the survey may also contribute to potential bias in the data, if these children systematically differed from those who participated.

Definition of Terms

Estimate – The estimate is the per cent or value observed/reported in the sample that is generalized to the broader population with similar characteristics (e.g., grade 7 – 12 students).

95% confidence interval (95% CI) – Confidence intervals (CIs) are the range of variability around an estimate. The 95% CI displays the range surrounding an estimate in which there is a 95% probability that the population value occurs.

Significantly different ($p < 0.05$) – When estimates are said to be significantly different (or statistically significant; $p < 0.05$), this indicates that the differences observed are not likely due to chance alone. Additional factors may be present (or absent) to a greater degree in one or more of the groups being compared.

Mean – The mean (or average) is calculated by adding the observed values together and dividing by the number of observations.

Standard Deviation (SD) – The standard deviation (SD) indicates how much the observed values vary from the mean. A lower SD indicates that more of the observed values are closer to the mean (higher precision), whereas a higher SD would indicate that the observed values are spread out more widely around the mean (lower precision).

Coefficient of Variation (CV) – The coefficient of variation is the ratio of the standard deviation to the estimate, displayed as a percentage. The CV indicates the size of the standard deviation compared to the estimate. As the variability around an estimate increases so too does the CV. For example, a CV of 33% indicates that the SD is 33% or one-third the size of the estimate.

Sample-size – The sample-size is the number of responses or individuals observed. As the size of a sample increases the SD decreases, and the ability to detect differences (power) increases.

* – A single asterisk (*) indicates that the reported estimate has a higher degree of variability and should be interpreted with caution. When a single asterisk (*) is used, the CV for the estimate is within the range of 16.6% – 33.3%.

** – A double asterisk (**) indicates that an estimate has been suppressed. Data are suppressed when the CV or an estimate is equal to or greater than 33.3%. Additionally, values have been suppressed when the reported sample-size (the number of people responding to a question) is less than 30.

Table. 1 Gambling, Video Gaming, and Technology Use Determinants and Risk Factors, HKPRDHU vs. Ontario

Topic	Response	HKPRDHU	Ontario	Difference
GAMBLING ACTIVITY, YES OR NO	Gambled at least once in the past 12 months	38.2 (31.8-45.1)	35.8 (34.2-37.5)	
	Did not gamble more than once in the past 12 months	61.8 (54.9-68.2)	64.2 (62.5-65.8)	
GAMBLING ON DARE OR PRIVATE BET	Gambled at least once in the past 12 months	15.6 (13.3-18.3)	11.6 (9.5-14.0)	↑
	Did not gamble more than once in the past 12 months	84.4 (81.7-86.7)	88.4 (86.0-90.5)	↓
GAMBLING ON CARDS	Gambled at least once in the past 12 months	12.1 * (7.9-18.2)	9.4 (8.0-11.0)	
	Did not gamble more than once in the past 12 months	87.9 (81.8-92.1)	90.6 (89.0-92.0)	
GAMBLING ON OTHER GAMES OF SKILL	Gambled at least once in the past 12 months	9.4 (7.6-11.7)	7.6 (6.5-9.0)	
	Did not gamble more than once in the past 12 months	90.6 (88.3-92.4)	92.4 (91.0-93.5)	
LARGEST AMOUNT OF MONEY SPENT GAMBLING	Less than \$50	87.6 (84.1-90.4)	84.3 (77.9-89.1)	
	\$50 or more	12.4 (9.6-15.9)	15.7 * (10.9-22.1)	
PROBLEM GAMBLING, YES OR NO	No problem	95.5 (92.4-97.3)	91.3 (88.3-93.6)	↑
	Low, moderate, or high problem severity	4.5 * (2.7-7.6)	8.7 (6.4-11.7)	↓
SCREEN TIME	None (no hours a day)	** (0.9-4.0)	1.1 (0.8-1.5)	
	Less than 1 hour	10.7 (8.3-13.7)	8.2 (6.8-9.9)	
	1 to 2 hours	34.4 (30.6-38.4)	26.4 (24.7-28.1)	↑
	3 or more hours per day on average in past week	53.1 (47.3-58.8)	64.3 (61.9-66.7)	↓
	5 or more hours per day on average in past week	20.5 (16.6-25.1)	29.0 (27.0-31.0)	↓
TECHNOLOGY USE DAILY	Don't use electronic devices daily	** (0.4-1.9)	1.8 * (1.3-2.6)	↓
	Use electronic devices daily	99.2 (98.1-99.6)	98.2 (97.4-98.7)	↑
TECHNOLOGY USE HOURS, 2 OR MORE HOURS	1 hour or less a day	16.2 * (11.4-22.6)	15.6 (13.9-17.5)	
	2 hours or more a day	83.0 (76.6-87.9)	82.6 (80.6-84.4)	
TECHNOLOGY USE ALL HOURS	Less than 1 hour a day	** (3.7-17.0)	5.5 (4.7-6.3)	
	1 hour a day	8.0 * (4.9-12.9)	10.1 (8.6-11.8)	
	2 hours a day	31.9 (24.4-40.5)	19.7 (18.1-21.5)	↑
	3-4 hours a day	30.0 (25.4-35.0)	33.3 (30.7-36.1)	
	5 or more hours a day	21.1 (16.6-26.3)	29.5 (26.5-32.7)	↓
PROBLEM TECHNOLOGY USE YES OR NO	No problem	89.7 (82.9-94.0)	81.9 (79.8-83.8)	↑
	Moderate or serious problem	10.3 * (6.0-17.1)	18.1 (16.2-20.2)	↓
PROBLEM TECHNOLOGY USE, LONGER THAN INTENDED	Never, rarely, or sometimes	68.6 (62.5-74.1)	59.1 (56.9-61.4)	↑
	Quite often or very often	31.4 (25.9-37.5)	40.9 (38.6-43.1)	↓
PROBLEM TECHNOLOGY USE, NEGLECT HOMEWORK	Never, rarely, or sometimes	81.4 (70.9-88.8)	72.2 (69.3-74.9)	↑
	Quite often or very often	18.6 * (11.2-29.1)	27.8 (25.1-30.7)	

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Topic	Response	HKPRDHU	Ontario	Difference
VIDEO GAMING FREQUENCY	Daily or almost daily	20.3 (16.5-24.6)	22.9 (20.8-25.1)	
	4-5 times a week	13.2 * (8.4-20.3)	11.3 (10.3-12.3)	
	2-3 times a week	13.0 (10.2-16.4)	15.7 (13.8-17.7)	
	Once a week	8.6 * (5.9-12.6)	7.4 (6.2-8.8)	
	3 times a month or less	27.3 (23.2-31.7)	26.0 (23.5-28.6)	
	Did not play	17.6 (14.4-21.2)	16.9 (15.5-18.4)	
VIDEO GAMING HOURS	Did not play in last 12 months	19.5 (16.2-23.3)	17.5 (15.9-19.1)	
	Less than 1 hour per day	28.0 (23.1-33.6)	23.4 (21.7-25.2)	
	1 hour a day	17.1 (14.3-20.4)	17.6 (16.0-19.4)	
	2 hours a day	16.1 * (11.0-23.0)	17.4 (15.8-19.0)	
	3 or more hours a day	19.2 (15.6-23.5)	24.2 (22.0-26.5)	↓
PROBLEM VIDEO GAMING	Probable video gaming problem	9.8 * (6.5-14.7)	12.0 (9.8-14.7)	
	No video gaming problem	90.2 (85.3-93.5)	88.0 (85.3-90.2)	
PROBLEM VIDEO GAMING, PLAYED AGAIN TO ACHIEVE TARGET	Yes	43.3 (37.2-49.6)	45.1 (43.1-47.2)	
	No	56.7 (50.4-62.8)	54.9 (52.8-56.9)	
PROBLEM VIDEO GAMING, KEPT THINKING ABOUT THEM	Yes	20.7 (16.6-25.6)	22.2 (20.2-24.4)	
	No	79.3 (74.4-83.4)	77.8 (75.6-79.8)	
PROBLEM VIDEO GAMING, TRIED TO STOP CUT BACK OR PLAYED LONGER THAN INTENDED	Yes	20.5 (15.8-26.2)	25.8 (23.9-27.7)	
	No	79.5 (73.8-84.2)	74.2 (72.3-76.1)	
SOCIAL MEDIA USE, YES OR NO	Use the internet but not social media	5.3 * (3.6-7.6)	7.3 (6.2-8.5)	
	Use social media but not daily	7.5 * (4.7-11.8)	7.3 (6.0-8.8)	
	Use social media daily	87.2 (81.5-91.4)	85.4 (83.2-87.4)	
SOCIAL MEDIA USE HOURS	Do not use social media	5.3 * (3.6-7.6)	7.3 (6.2-8.5)	
	Use social media but not daily	7.5 * (4.7-11.8)	7.3 (6.0-8.8)	
	Less than 1 hour per day	13.2 (11.1-15.6)	7.1 (5.9-8.5)	↑
	1 hour a day	20.6 (15.6-26.6)	13.8 (12.2-15.6)	↑
	2 hours a day	21.0 (16.8-26.0)	18.9 (16.4-21.8)	
	3-4 hours a day	18.4 (16.2-20.9)	25.3 (23.5-27.3)	↓
	5 or more hours a day	14.0 (10.8-18.0)	20.2 (17.5-23.2)	↓

↑ Indicates a significantly higher estimate compared to the rest of Ontario; ↓ Indicates a significantly lower estimate compared to the rest of Ontario.