

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

Many factors that influence chronic disease outcomes are modifiable. Physical inactivity, unhealthy eating, and excess consumption of refined sugars are associated with increased rates of chronic disease. (1) (2) Unhealthy eating is a key contributor to poor health outcomes such as cardiovascular diseases, some types of cancer, and type 2 diabetes. Additionally, despite the preventable nature of injuries, injuries continue to be the leading cause of death for young Canadians. (3)

The Canadian 24-Hour Movement Guidelines recommend that, each day, children ages 5 – 17 accumulate at least 60 minutes of physical exercise, several hours of light physical activities, no more than 2 hours of screen time, and limited sitting time. Per night, it is recommended that children ages 5 – 13 receive 9 to 11 hours of uninterrupted sleep, and that children ages 14 – 17 receive 8 to 10 hours of sleep. (4)

With the constant presence of cell phones and other mobile devices, there is concern related to the use of these devices while driving, especially around young drivers. The use of cell phones and other mobile devices while driving increases inattentive/distracted driving, which has been identified as a factor in 18.8% of all traffic fatalities in Ontario in 2016. (5) The level of perceived risk by youth, related to inattentive/distracted driving, seatbelt use, and cycling-related injuries and collisions may not be adequate. The potential for serious and life-long consequences, including death, should not be ignored.

The purpose of this *inform* is to highlight findings on physical health 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. (4) 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. (4) 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)<sup>†</sup>. The median age of respondent was 14 years of age (mean: 14.1; standard deviation (SD): 1.72).

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<sup>†</sup>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

### Self-health and health services

- Almost one-in-four (23.1%, 95% confidence interval (CI): 19.3, 27.4) grade 7 – 12 HKPRDHU students self-rated their physical health as excellent while one-in-eleven (9.0%\*, 95% CI: 6.2, 12.7) self-rated their physical health as fair or poor. These estimates for HKPRDHU students are not significantly different than the rest of Ontario students ( $p > 0.05$ ).
- Two-in-five (40.2%, 95% CI: 34.3, 46.4) grade 7 – 12 HKPRDHU students reported that they did not see a physician for a check-up or otherwise 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-five (20.9%, 95% CI: 16.2, 26.6) grade 9 – 12 HKPRDHU students reported using prescription pain relief pills for medical reasons in the past 12-months. The estimate for HKPRDHU students is not significantly different than the rest of Ontario students ( $p > 0.05$ ).

### Body image

- Almost two-thirds of HKPRDHU students had a body mass index (BMI) considered to be a “healthy weight” (63.4%, 95% CI: 58.0, 68.4). These estimates for HKPRDHU students are not significantly different than the rest of Ontario students ( $p > 0.05$ ).
- More than one-in-four (27.6%, 95% CI: 23.4, 32.3) grade 7 – 12 HKPRDHU students had a BMI considered to be overweight or obese; over one-in-six (17.3%, 95% CI: 13.7, 21.5) of all grade 7 - 12 HKPRDHU students were considered overweight and one-in-ten (10.4%, 95% CI: 8.4, 12.7) were considered obese. These estimates for HKPRDHU students are not significantly different than the rest of Ontario students ( $p > 0.05$ ).
- More than 30% (31.4%, 95% CI: 24.6, 39.1) of students viewed themselves as not having the “right body weight”. This estimate for HKPRDHU students is not significantly different than the rest of Ontario students ( $p > 0.05$ ).
- More than 60% (63.1%, 95% CI: 57.4, 68.5) of students reported they were either trying to gain weight, trying to lose weight, or trying to keep from gaining weight. This estimate for HKPRDHU students is not significantly different than the rest of Ontario students ( $p > 0.05$ ).

### Nutrition

- Approximately 14% (13.7, 95% CI: 11.5, 16.3) of HKPRDHU students reported eating fruits and vegetables 5 times or more per day (on average). This estimate for HKPRDHU students is not significantly different than the rest of Ontario students ( $p > 0.05$ ).
- More than 8-in-10 (85.8%, 95% CI: 82.1, 88.7) grade 7 – 12 HKPRDHU students reported drinking a sugar-sweetened beverage such as pop, a sport drink, or sweetened tea or coffee in the past week. The estimate for HKPRDHU students is significantly different than the rest of Ontario students ( $p < 0.05$ ).
- One-in-four (25.5%, 95% CI: 20.9, 30.8) grade 7 – 12 HKPRDHU students reported drinking at least five (5) sugar-sweetened beverages in the past seven days. The estimate for HKPRDHU students is higher than the rest of Ontario students ( $p < 0.05$ ).

- One-in-five (20.8%, 95% CI: 17.8, 24.1) grade 7 – 12 HKPRDHU students reported going to bed or school hungry sometimes, often, or always. The estimate for HKPRDHU students is significantly lower than the rest of Ontario students (27.3%, 95% CI: 25.1, 29.7,  $p < 0.05$ ).

#### Physical activity

- Almost one-in-twenty (4.2%\*, 95% CI: 2.9, 6.1) grade 7 – 12 HKPRDHU students reported that they were not active for more than 60-minutes on any of the past seven days, significantly lower than the rest of Ontario students (9.0%, 95% CI: 7.8, 10.3,  $p < 0.05$ ).
- Almost half (47.5%, 95% CI: 40.8, 54.3) of grade 7 – 12 HKPRDHU students reported that they were not physically active as part of a physical education class in the past five days of school, which is not significantly different than the rest of Ontario students ( $p > 0.05$ ).
- Half (51.6%, 95% CI: 45.1, 58.1) of grade 7 – 12 HKPRDHU students reported getting less than eight hours of sleep on an average school night, significantly lower than the rest of Ontario students (60.9%, 95% CI: 58.8, 63.1,  $p < 0.05$ ).
- One-in-four (25.9%, 95% CI: 21.4, 30.9) grade 7 – 12 HKPRDHU students reported being physically active for at least 60-minutes each day in the past week, not significantly different than the rest of Ontario students ( $p > 0.05$ ).

#### Risk perception and injury

- More than half (53.3%, 95% CI: 46.9, 59.5) of grade 7 – 12 HKPRDHU students reported being medically treated for an injury at least once in the previous 12-months. The estimate for HKPRDHU students is significantly higher than the rest of Ontario students (42.4%, 95% CI: 39.7, 45.1,  $p < 0.05$ ).
- Almost half (46.2%, 95% CI: 43.2, 49.3) of grade 7 – 12 HKPRDHU students reported ever receiving a head injury that resulted in concussion symptoms. One-in-five (19.7%, 95% CI: 16.7, 23.0) grade 7 – 12 HKPRDHU students reported receiving such an injury in the past 12-months. These estimates for HKPRDHU students are significantly higher than the rest of Ontario students (lifetime prevalence: 35.9%, 95% CI: 33.6, 38.1,  $p < 0.05$ ; past 12-months prevalence: 14.8%, 95% CI: 13.6, 16.0,  $p < 0.05$ ).
- The most common causes of head injuries that resulted in concussion symptoms were playing a team sport (other than hockey or soccer, 20.8%, 95% CI: 15.0, 28.1), playing hockey (16.5%\*, 95% CI: 11.6, 23.1), fell by accident (12.7%, 95% CI: 9.5, 16.8), and an object hit them by accident (7.8%\*, 95% CI: 4.4, 13.5).
- Nearly one-in-ten (9.4%, 95% CI: 5.4, 16.0) grade 10-12 HKPRDHU students with a driver's license reported being in a collision as a driver 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-five (20.6%, 95% CI: 16.9, 25.0) grade 7 – 12 HKPRDHU students reported not always wearing a seatbelt when in a vehicle. The estimate for HKPRDHU students is not significantly different than the rest of Ontario students ( $p > 0.05$ ).
- One-in-three (31.8%, 95% CI: 26.9, 37.2) grade 10 – 12 HKPRDHU students with a driver's license reported texting while driving at least once in the past 12-months. The estimate for HKPRDHU students is not significantly different than the rest of Ontario students ( $p > 0.05$ ).

## Public Health Messaging

### Body image

The Canadian Mental Health Association offers several suggestions for encouraging healthy body image, including: (6)

- Treat your body with respect
- Eat well-balanced meals and exercise because it makes you feel good and strong—not to control your body weight
- Surround yourself with positive friends and family who like you just as you are
- Be aware of how you talk about your body with family and friends. Do you often seek reassurance or validation from others to feel good about yourself?
- When negative thoughts come up, think about what you'd tell a friend if they were in a similar situation and then take your own advice
- Be mindful of messages you hear and see in the media and how those messages inform the way people feel about the way they look.

### Nutrition

Healthy eating plays an important role in towards both physical and mental health. Canada's Food Guide provides information on healthy foods and healthy eating habits, including: (7)

- Eating plenty of vegetables and fruits, whole grain foods and protein foods
- Limit highly processed foods. If you choose these foods, eat them less often and in small amounts
- Prepare meals and snacks using ingredients that have little to no added sodium, sugars or saturated fat
- Choose healthier menu options when eating out
- Replace sugary drinks with water
- Use food labels
- Be aware that food marketing can influence your choices

### Physical activity

The Canadian 24-Hour Movement Guidelines for Children and Youth (8) recommends that children and youth aged 5 to 17:

- Get at least 60 minutes of moderate-to-vigorous physical activity each day
- Get an additional several hours of light physical activity through structured and unstructured activities
- Limit recreational screen time to under 2 hours per day
- Get plenty of uninterrupted sleep (9 to 11 hours for ages 5 to 13 and 8 to 10 hours for ages 14 to 17)

### Risk perception and injury

Parachute Canada offers numerous resources for injury prevention and education, including concussions. (9) In Ontario, it is mandatory for sports organizations to: (10)

- Ensure that athletes, parents of athletes under 18, coaches, team trainers and officials annually review Ontario's Concussion Awareness Resources
- Establish a Concussion Code of Conduct
- Establish a Removal-from-Sport and Return-to-Sport protocol

Transport Canada includes the following as partial recommendations to prevent and reduce distracted driving: (11)

- Never text while driving, even when you are stopped in traffic or at a traffic light
- If you must send or receive a call or text, pull over to a safe location and park your car first
- Avoid using any device that may take your attention away from the task of driving
- Encourage friends and family to drive distraction-free

## References

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7. **Government of Canada.** Canada's Food Guide: Healthy eating recommendations. [Online] December 17, 2019. <https://food-guide.canada.ca/en/healthy-eating-recommendations/>.
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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 Physical Health Determinants and Risk Factors, HKPRDHU vs. Ontario

Topic	Response	HKPRDHU	Ontario	Difference
BMI	"Healthy weight"	63.4 (58.0-68.4)	63.3 (61.5-65.1)	
	Overweight or obese	27.6 (23.4-32.3)	28.0 (26.1-30.1)	
	Underweight	9.0 (7.0-11.4)	8.6 (7.7-9.7)	
BODY IMAGE	About the right weight	68.6 (60.9-75.4)	64.1 (61.3-66.8)	
	Too fat	22.7 (16.6-30.1)	23.7 (21.5-26.1)	
	Too thin	8.7 * (6.0-12.6)	12.2 (10.8-13.8)	
CAR ACCIDENT WHILE DRIVING	At least once	9.4 * (5.4-16.0)	8.5 (6.1-11.7)	
	Never	90.6 (84.0-94.6)	91.5 (88.3-93.9)	
CONCUSSION	Had injury like this but not in past 12 months	26.6 (23.6-29.8)	21.1 (19.7-22.6)	↑
	Had injury like this in past 12 months	19.7 (16.7-23.0)	14.8 (13.6-16.0)	↑
	Never had injury like this	53.8 (50.7-56.8)	64.1 (61.9-66.4)	↓
CONCUSSION CAUSE	Fell by accident	12.7 (9.5-16.8)	12.7 (10.9-14.8)	
	Object hit me by accident	7.8 * (4.4-13.5)	7.2 (5.8-8.9)	
	Other cause	36.8 (29.8-44.4)	38.1 (34.8-41.5)	
	Other sports injury	5.3 * (3.2-8.7)	6.1 (4.7-7.8)	
	Playing another team sport	20.8 (15.0-28.1)	16.5 (14.0-19.4)	
	Playing hockey	16.5 * (11.5-23.1)	19.4 (16.5-22.7)	
DAILY PHYSICAL ACTIVITY	Physically active each day in the past week	25.9 (21.4-30.9)	23.0 (21.7-24.4)	
	Physically active for 1 to 6 days in the past week	69.9 (64.6-74.8)	68.0 (66.9-69.2)	
	Physically inactive (0 days of activity)	4.2 * (2.9-6.0)	9.0 (7.8-10.3)	↓
HOURS OF SLEEP	8 or more hours of sleep	48.4 (41.9-54.9)	39.1 (37.0-41.2)	↑
	Less than 8 hours of sleep	51.6 (45.1-58.1)	60.9 (58.8-63.0)	↓
MEDICALLY TREATED INJURY	Not treated in the past 12 months	46.7 (40.5-53.1)	57.6 (54.9-60.3)	↓
	Treated at least once	53.3 (46.9-59.5)	42.4 (39.7-45.1)	↑
PHYSICIAN HEALTH CARE VISIT	Did not see a doctor in past 12 months	40.2 (34.3-46.3)	33.7 (30.8-36.6)	↑
	Did see a doctor in past 12 months	59.8 (53.7-65.7)	66.3 (63.4-69.2)	
SEATBELT	Always wear a seatbelt or never travel by vehicle	79.4 (75.0-83.2)	76.3 (73.8-78.6)	

Topic	Response	HKPRDHU	Ontario	Difference
	Do not always wear a seatbelt	20.6 (16.8-25.0)	23.7 (21.4-26.2)	
SELF-RATED PHYSICAL HEALTH	Excellent	23.1 (19.3-27.4)	24.2 (22.6-26.0)	
	Fair or Poor	9.0 * (6.2-12.7)	8.7 (7.7-9.7)	
	Good	26.6 (24.3-28.9)	29.9 (27.7-32.3)	↓
	Very good	41.3 (37.2-45.7)	37.2 (34.2-40.3)	
SUGAR SWEETENED BEVERAGE	1 to 6 times in past week	71.5 (65.9-76.6)	70.2 (68.7-71.7)	
	At least once a day	14.2 (11.0-18.2)	11.5 (9.5-13.7)	
	Did not drink in past week	14.2 (11.3-17.9)	18.3 (16.8-20.0)	↓
TEXTING WHILE DRIVING	At least once	31.8 (26.8-37.2)	32.3 (28.7-36.0)	
	Never	68.2 (62.8-73.2)	67.7 (64.0-71.3)	
WEIGHT CONTROL	Not doing anything	36.9 (31.5-42.6)	35.2 (33.8-36.7)	
	Trying to lose, gain, or keep from gaining weight	63.1 (57.4-68.5)	64.8 (63.3-66.2)	
FRUITS AND VEGETABLES	0 - 2 times	43.8 (41.5-46.0)	45.8 (43.6-48.1)	
	3 - 4 times	42.5 (40.0-45.1)	38.6 (36.2-41.1)	↑
	5 or more times	13.7 (11.5-16.3)	15.5 (14.1-17.1)	
OPIOID PILLS WITH A PRESCRIPTION	Has not used opioid pills with a prescription	79.1 (73.4-83.8)	82.4 (80.1-84.5)	
	Has used opioid pills with a prescription	20.9 (16.2-26.6)	17.6 (15.5-19.9)	

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