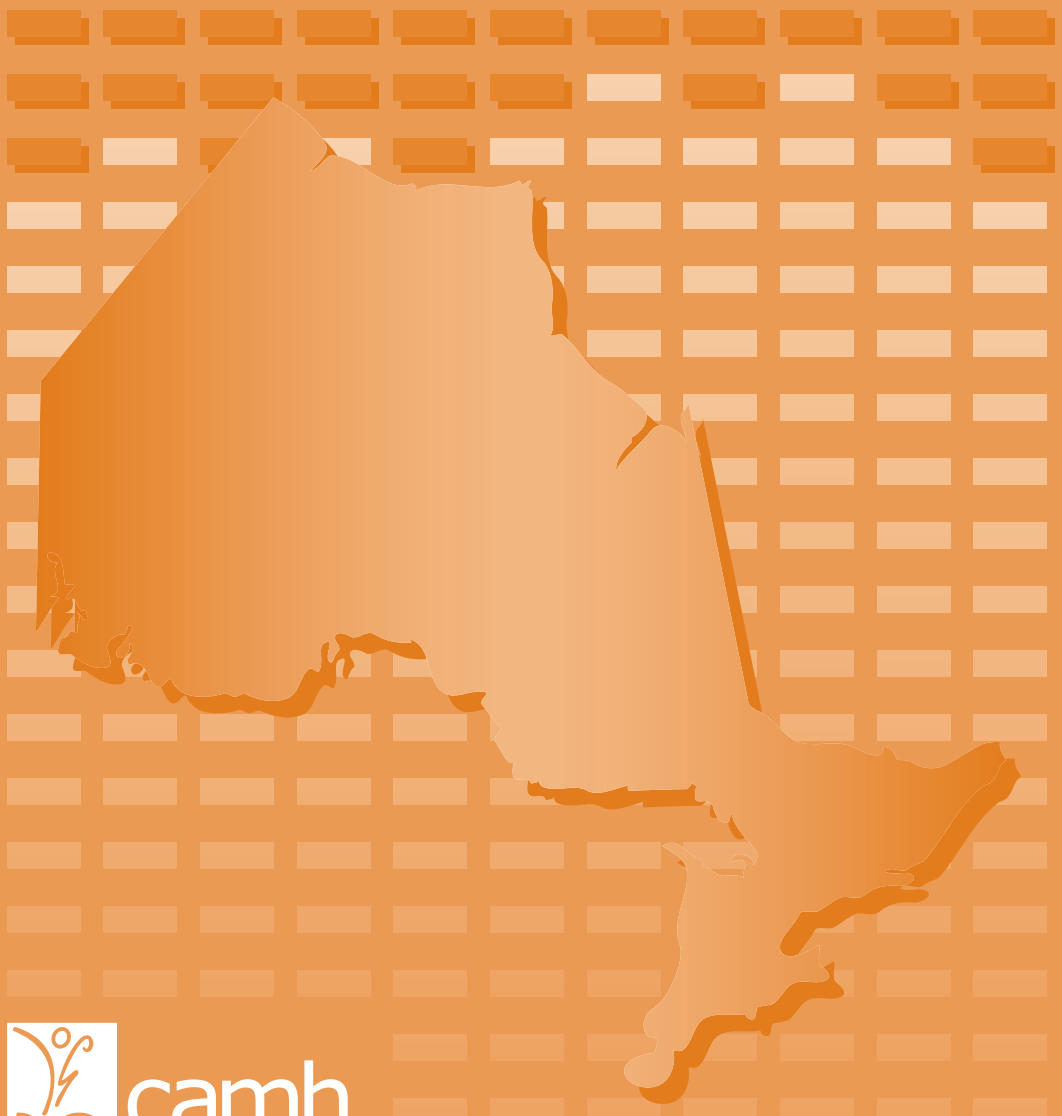
OSDUS HIGHLIGHTS

The Mental Health and Well-Being of Ontario Students



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OSDUS HIGHLIGHTS

The Mental Health and Well-Being of Ontario Students 1991-2003

CAMH Research Document Series
No. 15

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INTRODUCTION

The purpose of the *Ontario Student Drug Use Survey (OSDUS)* is to examine epidemiological trends in student substance use, mental health (e.g., depression), physical health, and risk behaviours (e.g., violence, gambling), as well as identifying risk and protective factors. In its entirety, the *OSDUS* now spans twenty-five years, and is the longest systematic health study among a youthful population in Canada.

In this *Highlights Report,* we summarize the current extent and patterns of physical and mental health indicators and risky behaviour among Ontario students enrolled in grades 7 to 12 using data from the 2003 *OSDUS*. The mental health indicators are divided into internalizing and externalizing indicators. By internalizing indicators we mean emotional health problems such as depression and self-esteem. By externalizing indicators we mean overt behaviours such as aggression and drug use. Also examined are potential determinants of these problems, such as the family and school experiences. Further, the findings incorporate trend data spanning back to 1991 where possible.

It is important to note that the mental health indicators in the *OSDUS* generally assess moderate functional impairment, rather than psychiatric disorders based on clinical criteria. Restricting attention to those experiencing current psychiatric disorders would underestimate the extent of mental health problems, since a sizeable percentage experience impaired functioning without meeting the clinical criteria for a diagnosis. Moreover, restricting attention to psychiatric disorders would overlook the fact that mental well-being exists as a continuum, spanning optimum mental health to mental illness to severe disorders. Finally, screening and monitoring broad mental health indicators provides more useful information to service planners and providers.

A more comprehensive analysis of the mental health and well-being findings presented here, as well as a complete description of methodology, may be found in the detailed report "The Mental Health and Well-Being of Ontario Students, 1991-2003: Detailed *OSDUS* Findings" (available in PDF format at: http://www.camh.net/research/population_life_course.html).

The 2003 *OSDUS* Mental Health and Well-Being report includes new material on the following issues:

- physical injuries sustained during the past year that required medical attention;
- trends in medical drug use since 1977;
- type of bullying involvement; and
- Internet gambling.

We also examined the overlap between substance use problems, mental health problems, and delinquent behaviour.

Note to Readers of Prior OSDUS Reports

Unlike prior OSDUS surveys, OAC (Grade 13) students were not surveyed in 2003. Thus, to ensure valid comparisons across years, we have made important changes to the 2003 OSDUS report:

- ***All percentages based on samples before 2003 have been recalculated to exclude OAC students.***

This means that percentages found in earlier OSDUS reports (from 1977 to 2001) cannot be compared to percentages in the 2003 report (the exception to this rule is for percentages based on individual grade levels).

METHOD

Sampling Design

For each of the 14 *OSDUS* surveys, the target population was all students enrolled in the public or Catholic regular school systems. Thus it excludes those enrolled in private schools, special education classes, those institutionalized for correctional or health reasons, those on Indian reserves and Canadian Forces bases, and those in the far northern regions of Ontario (a total of about 7% of Ontario students).

Like the 1999 and 2001 cycles, the 2003 *OSDUS* employed a two-stage (school, class), stratified (region and school type) cluster sample design, and oversampled students in Northern Ontario.

However, the 2003 *OSDUS* differs from previous surveys in several ways:

- Students in grades 7 through 12 were surveyed. Grade 13 (OAC) students were excluded, given that this grade no longer exists in Ontario schools.

- Four classes were selected in each secondary school, one for each grade between 9 and 12. Prior surveys selected only three classes in secondary schools, regardless of grade.

- The sample of schools was based on a longitudinal sample commencing in 2001. The 2003 sample design employed a longitudinal sample of schools drawn from the 2001 sample. Forty-three percent (n=54) of the schools in the 2003 survey also participated in 2001. This feature of overlapping schools provides more efficient estimates of change over time.

The sample selection occurred as follows:

a) For the 2001 sample, schools were drawn from the Ministry of Education's 1996/1997 enrolment data, and were stratified according to the four regions used in previous surveys.

b) Within each regional strata, a random selection of schools was chosen with probability proportional to size (thus, larger schools have a greater probability of being selected). In 2003, these same schools were re-contacted.

c) Within each school, classes were randomly selected. In elementary/middle schools, two classes were randomly selected – one 7th-grade and one 8th-grade. In secondary schools, four classes were randomly selected, one in each grade between 9 and 12.

For all surveys, Ontario was divided into four regions based on the following boundaries: **Toronto**, schools within the former Metropolitan Toronto; **Northern** Ontario, schools within the North Bay and Sudbury areas and farther north; **Eastern** Ontario, schools within York Region district and farther east; and **Western** Ontario, schools west of, and including, Peel Region. Results for 2003 are presented for each of Ontario's seven public health planning regions (described on page 17).

Procedures

Students who returned a signed parental consent form responded to the anonymous, self-administered questionnaires in class groups within a 30 to 40 minute session, between January and June 2003. Participation was voluntary and anonymous. All students recorded their responses directly on the questionnaires, which were then entered and fully-verified by data entry staff.

The final sample size for the 2003 survey was 6,616 7th- to 12th-graders (72% of selected students) from 37 school boards, 126 schools and 383 classes. This sample represents about 970,000 Ontario students in grades 7 to 12. All survey estimates were weighted, and variance and statistical tests were corrected for the sampling design (see Tables A1 and A2 for detailed estimates).

The Questionnaire

To cover as many content areas as possible in a fixed time period, we employed two questionnaires, Form A and Form B. In each classroom, half the students were randomly assigned either Form A or Form B. On average, the questionnaire took about 30 minutes to complete.

RESULTS

Physical Health

Self-Rated Health

One of the more frequently used indicators of a person's current mental and physical health is perceived or self-rated health. Despite its simplicity, this global assessment of health has been shown to be a reliable indicator of health problems, health care utilization, and longevity.

From 1991 to 2003, self-rated health was measured with the following question: "How would you rate your physical health?" The response options are: poor, fair, good, very good, or excellent. We use the term "poor health" to reflect responses of poor or fair.

2003 (Grades 7 to 12):

- Over half of students perceive their health as excellent (21%) or very good (33%). At the risk end, about one-in-eight (13%) report poor health.

- Reported poor health is significantly higher among females (15%) than males (10%).

- Poor health significantly varies by grade: 7th-graders (7%) are the least likely to report poor health, whereas 11th-graders (17%) are the most likely.

- Reports of poor health do not significantly vary among the public health regions.

Physical Inactivity

Regular physical activity offers short-term physical and mental health benefits, such as reducing the risk of obesity and stress, and improving self-esteem. Moreover, an active lifestyle established during adolescence is likely to extend into adulthood.

Starting in 1997, the *OSDUS* asked students about their participation in physical activity, both in and outside of school. Students indicated on how many days they exercised or played sports "for at least 20 minutes that made you sweat and breathe hard" during the past seven days, as well as in physical education classes during the five school days prior to the survey.

2003 (Grades 7 to 12):

- About one-in-six (16%) students did not participate in any form of physical activity at least once during the seven days before the survey. On average, students exercised three and one-half days out of seven. Just under half (46%) of all students were physically inactive at school during the previous five school days.

- Males and females were equally inactive during the past seven days (about 16% each). However, females were more likely than males to be inactive at school during the past five days (49% vs 44%, respectively).

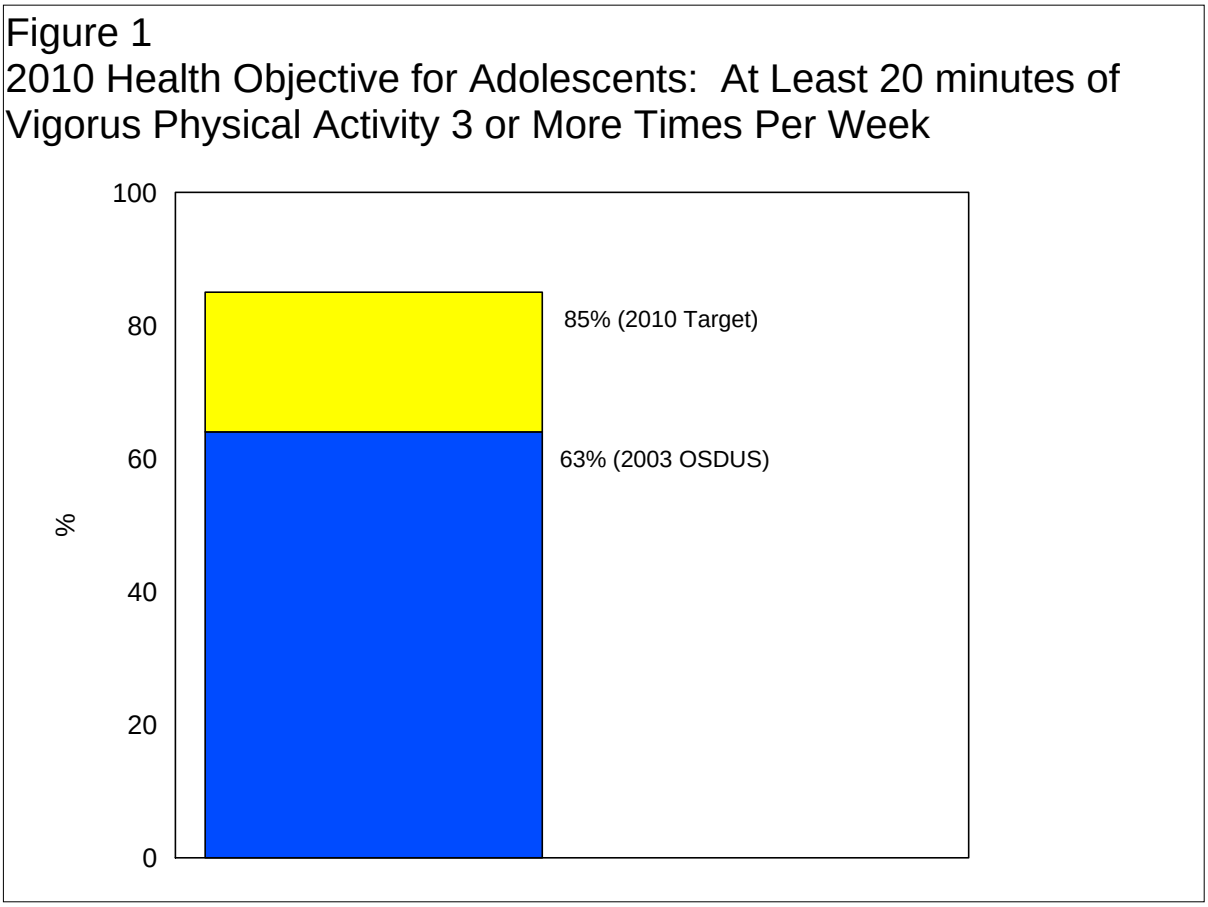
- Only school-based physical activity varies by grade: older students are more likely to be inactive, ranging from 28% of 7th-graders to 61% of 12th-graders.

- There is a significant regional difference regarding inactivity over the past seven days, with students in the Toronto (21%) public health region and the Central-South (21%) region most likely to be inactive.

2010 Health Objective: Physical Activity

Recent health objectives in the United States have established that, by the year 2010, the target percentage of adolescents engaging in 20 minutes of vigorous physical activity three or more days per week should be 85%. The percentage of Ontario students reporting this level of activity in 2003 is only 63%. Thus, over one-third (37%) do not meet the current health recommendation of engaging in at least 20 minutes of vigorous exercise at least 3 times weekly.

Figure 1
2010 Health Objective for Adolescents: At Least 20 minutes of Vigorus Physical Activity 3 or More Times Per Week



Health Care Utilization

Starting in 1999, the *OSDUS* asked students about visits to physical and mental health care professionals during the 12 months before the survey. This provides another snapshot of students' health status. Students were asked: "*...how many times have you seen a doctor about your physical health or for a check-up?"* and *"...how often have you seen a doctor, nurse or counsellor about your emotional or mental health*?"

Doctor Visits

2003 (Grades 7 to 12):

- During the 12 months before the survey, 60% of students visited a doctor for their physical health at least once.

- Compared to males, females are significantly more likely to visit a doctor (54% vs 66%, respectively).

- There are no significant grade differences.

- Significant regional differences were found: students in the Central-South (53%) public health region and the North (55%) region are the least likely to visit a doctor.

Mental Health Care Visits

2003 (Grades 7 to 12):

- Among all students, 11% reported at least one visit to a mental health professional during the 12 months before the survey.

- Females are more likely to report a mental health visit compared to males (14% vs 8%, respectively).

- Mental health care visits are most likely among 11th-graders (14%) compared to other grades (range from 9% to 11%).

- Among the seven public health regions, students in the Toronto (8%) region are the least likely to seek mental health care.

Treated for a Physical Injury

For the first time, the 2003 *OSDUS* asked students about physical injuries during the past year. The question was: "*In the last 12 months, how many times were you hurt or injured, and had to be treated by a doctor or nurse?*"

2003 (Grades 7 to 12):

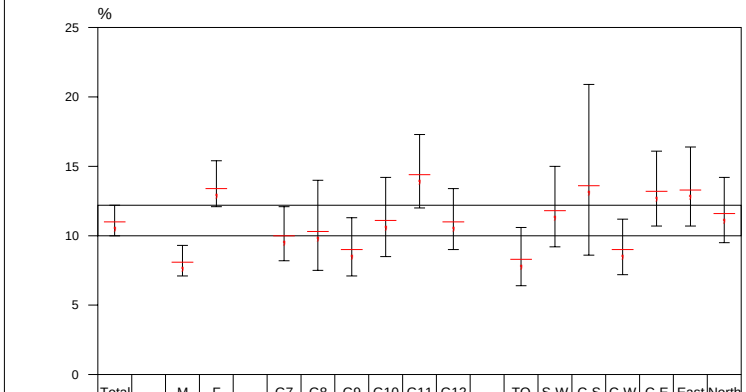
- Among the total sample, 35% were treated for an injury at least once in the 12 months before the survey. This represents about 336,900 students across Ontario. More specifically, 20% were treated just once, 9% were treated twice, 3% were treated three times, and 3% were treated four or more times.

- Males are more likely than females to report being treated for a physical injury at least once in the past year (38% vs 33%, respectively).

- There is no significant grade variation.

- There is significant regional variation, with students in the Toronto (26%) public health region least likely to be treated for an injury, and those in the North (43%) public health region most likely.

Figure 2
Percentage Reporting at Least One Mental Health Care Visit During the Past 12 Months by Sex, Grade and Public Health Region, OSDUS 2003



	Total		M	F		G7	G8	G9	G10	G11	G12		TO	S-W	C-S	C-W	C-E	East	North
Upper CI	12.2		9.3	15.4		12.1	14	11.3	14.2	17.3	13.4		10.6	15	20.9	11.2	16.1	16.4	14.2
Lower CI	10		7.1	12.1		8.2	7.5	7.1	8.5	12	9		6.4	9.2	8.6	7.2	10.7	10.7	9.5
Percentage	11		8.1	13.4		10	10.3	9	11.1	14.4	11		8.3	11.8	13.6	9	13.2	13.3	11.6

Vertical bars represent 95% confidence intervals; horizontal bar represents 95% CI for total estimate

Medical Drug Use

Spanning back to 1977, the *OSDUS* asked students about their use of certain drugs that were prescribed or advised by a doctor. Specifically, they were asked how often during the 12 months before the survey they had medically used barbiturates, stimulants, and tranquillizers. A question about the use of prescribed Ritalin was asked in more recent years.

2003 (Grades 7 to 12):

- Among the total sample, 6% used barbiturates medically (about 53,900 students), 6% used stimulants medically (about 54,700 students), 3% used tranquillizers (about 25,800), and 2.5% used Ritalin (about 24,400).

- Among these four drugs, only two show a significant sex difference: males are more like than females to use tranquillizers (3% vs 2%, respectively), and males are more likely than females to use Ritalin (4% vs 2%).

- There are no significant grade differences in the use of any of these medical drugs.

- Among the seven public health regions, only the use of medical barbiturates shows significant variation, with Toronto (3%) lower than the other regions (about 5%-9%).

Prescription Medication to Treat Depression or Anxiety

Starting in 2001, the *OSDUS* asked about prescription medication for depression or anxiety. The question was *"In the last 12 months, have you been prescribed medicine to treat anxiety or depression?"* The four response options were: yes for anxiety only; yes for depression only; yes for both; or no.

2003 (Grades 7 to 12):

- About 2% of students (17,000 across Ontario) report that they had been prescribed medication to treat depression in the past year. Just under 1% of students (about 6,600) were prescribed medication for anxiety. Another 2% (about 15,100) were prescribed medication for both their depression and anxiety.

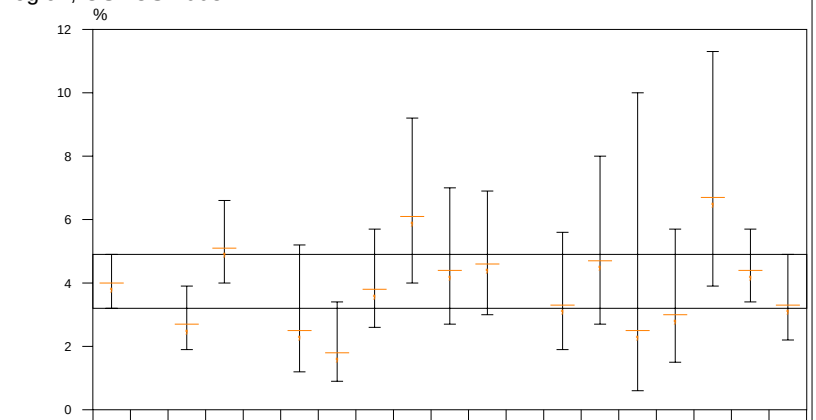
- Generally, about 4% of students (about 38,700) report they were prescribed medication to treat either depression, or anxiety, or both of these problems.

- Compared to males, females are significantly more likely to be prescribed medication to treat depression (1% vs 2%, respectively), or both depression and anxiety (1% vs 2%).

- Students in grade 10 (6%) are most likely to be prescribed medication to treat depression, or anxiety, or both problems.

- There is no significant variation by public health region.

Figure 3
Percentage Reporting Having Been Prescribed Medication to Treat Either Depression, or Anxiety, or Both Problems, by Sex, Grade and Public Health Region, OSDUS 2003



	Total		M	F		G7	G8	G9	G10	G11	G12		TO	S-W	C-S	C-W	C-E	East	North
Upper CI	4.9		3.9	6.6		5.2	3.4	5.7	9.2	7	6.9		5.6	8	10	5.7	11.3	5.7	4.9
Lower CI	3.2		1.9	4		1.2	0.9	2.6	4	2.7	3		1.9	2.7	0.6	1.5	3.9	3.4	2.2
Percentage	4		2.7	5.1		2.5	1.8	3.8	6.1	4.4	4.6		3.3	4.7	2.5	3	6.7	4.4	3.3

Vertical bars represent 95% confidence intervals; horizontal bar represents 95% CI for total estimate

Internalizing Indicators

Low Self-Esteem

Low self-esteem, or self-worth, has been shown to be associated not only with risky health behaviours such as illicit drug use, but also with poor physical and mental health outcomes, and poor school and personal achievement.

Since 1993, the *OSDUS* has used 6 items to measure self-esteem, adapted items from the Rosenberg Self-Esteem Scale. An overall indicator for low self-esteem was defined as responding negatively (lower esteem) to at least three of the six items.

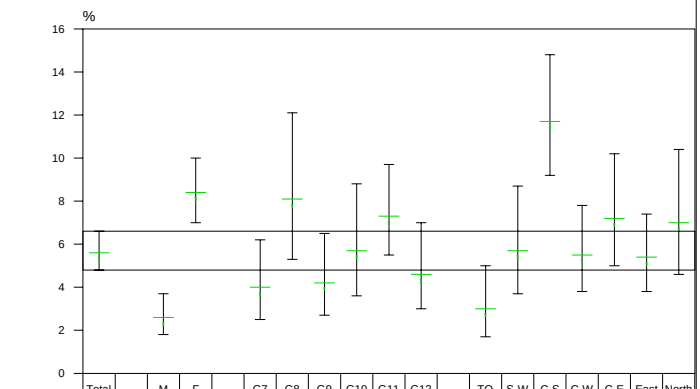
2003 (Grades 7 to 12):

- About 10% of students report low self-esteem.

- Females are significantly more likely to report low self-esteem than are males (11% vs 7%, respectively).

- There is no significant grade effect regarding low self-esteem, nor is there a significant regional effect.

Figure 4
Percentage At Elevated Risk for Depression, by Sex, Grade and Public Health Region, OSDUS 2003



	Total		M	F		G7	G8	G9	G10	G11	G12		TO	S-W	C-S	C-W	C-E	East	North
Upper I	6.6		3.7	10		6.2	12.1	6.5	8.8	9.7	7		5	8.7	14.8	7.8	10.2	7.4	10.4
Lower I	4.8		1.8	7		2.5	5.3	2.7	3.6	5.5	3		1.7	3.7	9.2	3.8	5	3.8	4.6
Percentage	5.6		2.6	8.4		4	8.1	4.2	5.7	7.3	4.6		3	5.7	11.7	5.5	7.2	5.4	7

Vertical bars represent 95% confidence intervals; horizontal bar represents 95% CI for total estimate

Depressive Symptoms

Depressed mood is a relatively common occurrence during adolescence and is characterized by pervasive feelings of sadness and worthlessness, loss of interest in activities, and disturbances in sleep, appetite, and concentration. Depression can range from mild to severe, and can adversely affect all areas of life. Typically, the onset of depression occurs during adolescence, affecting more females than males.

The Center for Epidemiologic Studies Depression Scale (CES-D) is a self-report scale used to screen for depressive symptomatology in the general population. The scale does not make a clinical diagnosis, but it does identify those at risk for a depressive disorder. The *OSDUS* used a shortened version of the CES-D, containing 4 items measuring the frequency of experiencing symptoms during the 7 days before the survey. We provide a measure of elevated risk for depression as indicated by those reporting a high frequency for all four symptoms.

2003 (Grades 7 to 12):

- About one-in-twenty (6%) students are at risk for depression (this represents about 55,200 Ontario students).

- Females are more likely to be at risk for depression, compared to males (8% vs 3%).

- There are no significant grade differences on the four symptoms, or on the overall depression measure.

- There is significant variation regarding risk for depression: students in the Toronto (3%) public health region are the least likely to be at risk for depression, while students in the Central-South (12%) region are most likely to be at risk.

Elevated Psychological Distress

The General Health Questionnaire (GHQ) is a screening instrument used to detect current psychological distress. The GHQ-12 uses twelve items to screen for three overarching problems: depressed mood, anxiety, and problems with social functioning. Note that this instrument is used as a screener and not for clinical diagnoses. A summary measure was calculated to estimate the percentage experiencing elevated psychological distress, defined as reporting at least 3 of the 12 symptoms (positive statements were reverse-coded). The GHQ was first used in the *OSDUS* in 1999.

2003 (Grades 7 to 12):

- Elevated psychological distress is reported by just under one-third (31%) of students. This represents about 303,300 Ontario students.

- The most common symptom experienced by students is the feeling of being constantly under stress (38%), followed by losing sleep because of worrying (29%). The least cited symptom is feeling incapable of making decisions (7%).

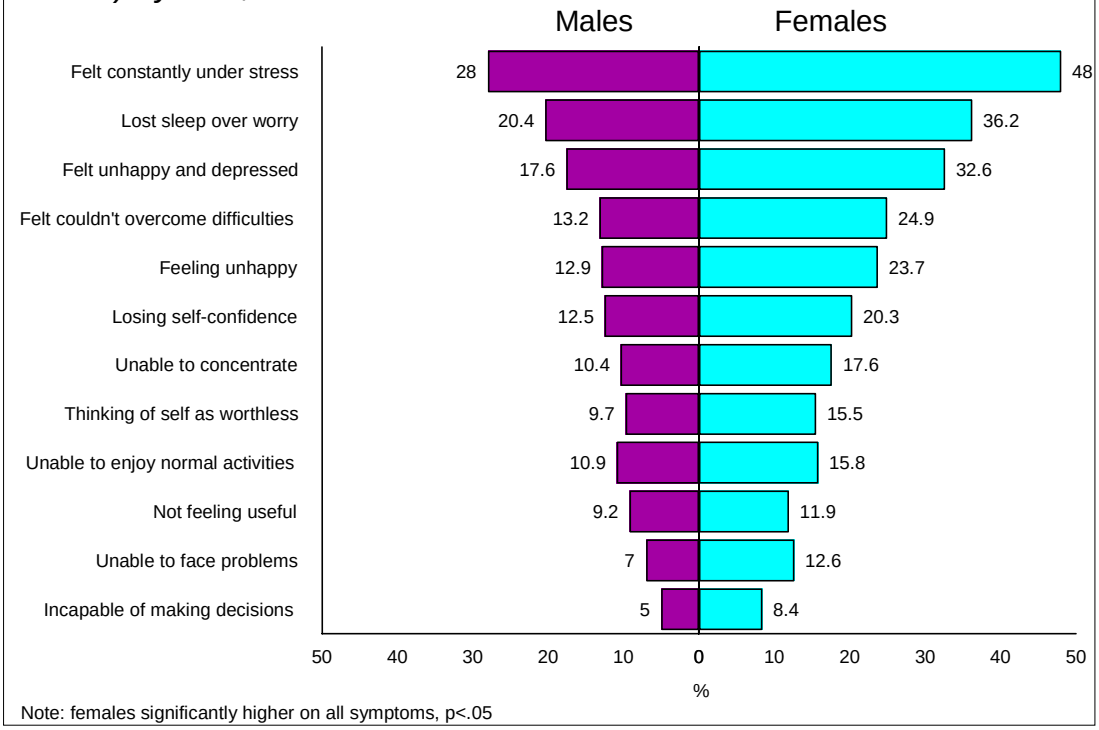
- Females are more likely to report elevated psychological distress compared to males (39% vs 22%, respectively). Indeed, females are significantly more likely to report each of the 12 symptoms.

- Psychological distress significantly increases with grade, peaking in 11th - and 12th-grades (just under 40% each).

- There is substantial grade variation on 10 of the 12 symptoms, generally showing inferior mental health with increasing grade. For example, constantly feeling stressed increases dramatically with grade, with only 21% of 7th-graders reporting so versus 52% of 12th-graders. Symptoms that do not significantly differ by grade include feeling like one is playing a useful part in things, and thinking of oneself as a worthless person.

- There are no significant regional differences on these distress measures.

Figure 5
Percentage Reporting Psychological Distress Symptoms (Past Weeks) by Sex,OSDUS 2003



Note: females significantly higher on all symptoms, p<.05

Suicide Ideation

Starting in 2001, the *OSDUS* included a question about suicide. Specifically, students were asked "*During the last 12 months, did you ever seriously consider attempting suicide?"*

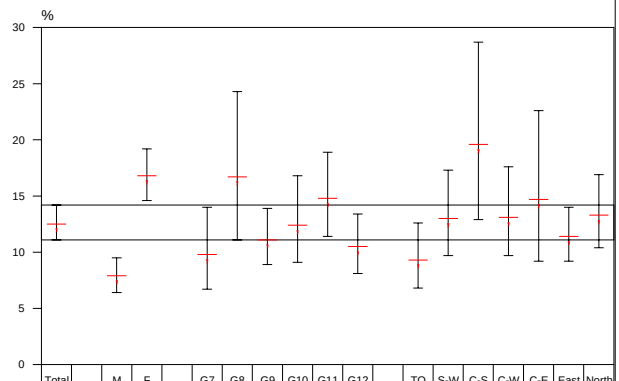
2003 (Grades 7 to 12):

- About one-in-eight (12%) students reported that they had seriously considered suicide in the past year. This represents about 122,100 Ontario students.

- Females are significantly more likely to think about suicide than males (17% vs 8%, respectively).

- There is no significant association with grade or region.

Figure 6
Percentage Reporting Suicide Ideation, by Sex, Grade and Public Health Region, OSDUS 2003



	Total		M	F		G7	G8	G9	G10	G11	G12		TO	S-W	C-S	C-W	C-E	East	North
Upper CI	14.2		9.5	19.2		14	24.3	13.9	16.8	18.9	13.4		12.6	17.3	28.7	17.6	22.6	14	16.9
Lower CI	11.1		6.4	14.6		6.7	11.1	8.9	9.1	11.4	8.1		6.8	9.7	12.9	9.7	9.2	9.2	10.4
Percentage	12.5		7.9	16.8		9.8	16.7	11.1	12.4	14.8	10.5		9.3	13	19.6	13.1	14.7	11.4	13.3

Vertical bars represent 95% confidence intervals; horizontal bar represents 95% CI for total estimate

Body Image

The 2001 and 2003 *OSDUS* included questions concerning beliefs about personal weight and desired change in weight. Students were asked two questions: one about perceived body weight, and the second about what they are doing about their weight, if anything.

2003 (Grades 7 to 12):

- Over two-thirds (69%) of all students are satisfied with their weight. One-fifth (20%) feel they are too fat, while one-tenth (11%) feel they are too thin.

- Over one-third (38%) of students are not trying to do anything about their weight. About another third (29%) are trying to lose weight; 21% want to keep from gaining weight; and 12% want to gain weight.

- Females are significantly more likely to believe that they are too fat, compared to males (26% vs 13%, respectively), whereas males are more likely to believe that they are too thin, compared to females (16% vs 7%).

- Significantly more females than males want to lose weight (39% vs 18%, respectively), whereas more males want to gain weight (18% vs 5%).

- As grade increases, so does the desire to change one's weight: reports of trying to lose weight increase with grade, from 23% of 7th-graders up to about 32% among older students.

- There are no significant regional differences for these two items.

Externalizing Indicators

This chapter deals with externalizing indicators that are acting-out behaviours such as delinquency, violence and gambling. Delinquency and violent activities are not only a social problem, but a public health issue as well. Indeed, not only is violence related to physical injury, but having been a victim of violence or threatened with violence can also negatively impact a person's mental health.

Delinquent Behaviour

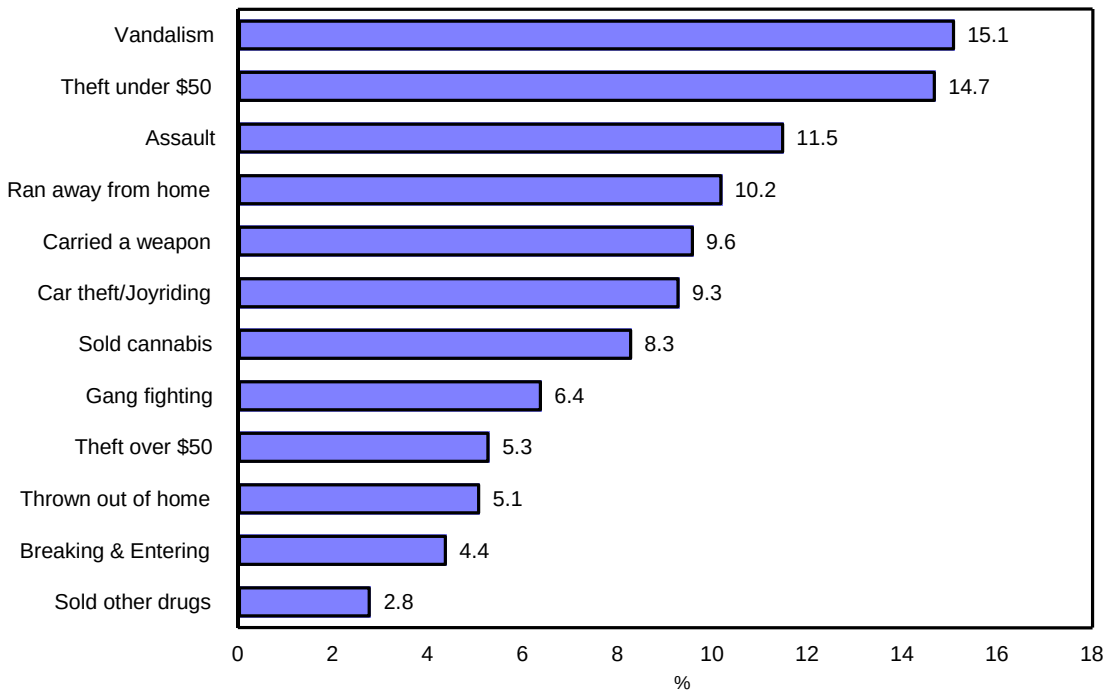
Since 1991, the *OSDUS* has asked students about their involvement in twelve delinquent acts. Nine of the 12 items refer to non-violent acts (e.g., vandalism, theft, joyriding), and the remaining 3 items refer to violent acts (assault, weapon carrying, and gang fighting).

2003 (Grades 7 to 12):

- Among all 12 acts, the 3 most common were: property damage (15%), theft under $50 (15%), and beating up someone (12%). The least reported activity was selling drugs other than cannabis (3%).

- Overall, 14% of students report involvement in at least 3 of the 12 behaviours. More males than females report this level (18% vs 11%, respectively). Tenth graders (17%) and 11th-graders (18%) are the most likely to report at least 3 delinquent acts. There are no significant regional differences.

Figure 7
Percentage Reporting Delinquent Acts During the Past 12 Months, OSDUS 2003



Violent Acts

Assault, 2003 (Grades 7 to 12):

- Among all students, 12% (about 108,400) assaulted someone at least once during the 12 months before the survey, with more males than females reporting so (14% vs 9%).

- Although there is grade variation in assault (ranging from 9% of 12th-graders to 15% of 11th-graders), it is not statistically significant.

- There are significant differences among the seven public health regions, with students in Toronto and the East regions (about 9%) less likely to report assaulting someone, and students in the Central-East (17%) and North (15%) regions are most likely.

Weapon Carrying, 2003 (Grades 7 to 12):

- Overall, 10% of all students (about 90,200) report carrying a weapon in the 12 months before the survey.

- Males are significantly more likely than females to report carrying a weapon (15% vs 5%).

- Although weapon carrying varies by grade (ranging from 7% of 8th-graders to 12% of 9th-graders), these are not statistically significant differences.

- No significant regional differences exist.

Gang Fighting, 2003 (Grades 7 to 12):

- Among all students, 6% (about 60,500) report participating in gang fighting at least once during the past 12 months.

- Gang fighting is more prevalent among males than females (9% vs 4%).

- Although 8th-graders (4%) are the least likely to report gang fighting, the differences among the grades are not significant

- Gang fighting does not significantly differ by public health region.

Violence on School Property

Starting in 2001, the *OSDUS* included a question about fighting on school property. In 2003, students were also asked about being threatened with a weapon on school property. This section presents reports of experiencing each at least once during the 12 months before the survey.

Physical Fighting at School, 2003 (Grades 7 to 12):

- Among the total sample, 18% (about 168,100 of students in Ontario) report fighting on school property at least once.

- There is a significant sex difference, with males much more likely to report fighting than females (27% vs 9%, respectively).

- There is significant variation by grade: 7th-graders (30%) are the most likely to fight at school, whereas 12th-graders are the least likely (9%).

- There are no significant differences among the public health regions.

Threatened or Injured with a Weapon at School, 2003 (Grades 7 to 12):

- Among all students, 8% (about 73,200 students) report having been threatened or injured with a weapon on school property.

- Males are significantly more likely than females to report being threatened or injured with a weapon at school (10% vs 6%, respectively).

- Despite some variation, there are no significant differences among the grades.

- There are no significant differences among the public health regions.

Bullying at School

The 2003 *OSDUS* included four questions about bullying. Bullying was defined in the questionnaire as "...when one or more people tease, hurt or upset a weaker person on purpose." Students were asked about the typical way they were bullied at school, and the typical way they bullied others, if at all. The questions were: *"In what way were you bullied the most at school?"* and *"In what way did you bully other students the most at school?"* For each of these questions, students were asked to choose only one of the following response options: physical attacks (for example, beat up, pushed or kicked), verbal attacks (for example, teased, threatened, spread rumours), stole or damaged possessions, or not involved in bullying at all.

Students were also asked about the frequency of bullying with the questions. We combined responses into three categories: daily or weekly, monthly or less often, and never.

Bullying Victims, 2003 (Grades 7 to 12):

- Among all students in grades 7 to 12, 33% have been bullied at school since September. This represents about 310,300 students in Ontario.

- The most prevalent form of victimization is verbal (27%), while 4% were bullied physically, and 2% were victims of theft or vandalism.

- About 8% of students report being bullied on a daily or weekly basis, and about 21% were bullied monthly or less often.

- Significantly more males are bullied than females (35% vs 30%, respectively). Males are more likely to be bullied in a physical manner than are females (7% vs 0.8%), and also more likely to be victims of theft or vandalism (3% vs 1.5%). The frequency of being bullied does not significantly vary between the sexes.

- There is significant grade variation, with 7th-graders (47%) the most likely to be bullied and 12th-graders (20%) the least likely. Seventh graders are the most likely to be bullied physically (8%) and verbally (35%). They are also the most likely to be bullied on a daily/weekly basis (15%).

- Among the public health regions, Toronto students (25%) are the least likely to be bullied, whereas students in the Central-South region are the most likely (48%).

Bullying Perpetrators, 2003 (Grades 7 to 12):

- Among all students, 30% report bullying other students at school. This represents about 282,900 students in Ontario.

- The most prevalent form of bullying others is through verbal attacks (25%), followed by physical attacks (4%), and theft/vandalism (1%).

- About 7% of students reported bullying someone on a daily or weekly basis, and about 23% did so monthly or less often.

- Males are more likely to report bullying someone than are females (35% vs 25%, respectively).

- Students in grades 7 to 9 are the most likely to report bullying someone (about one-third in each grade), whereas 12th-graders are the least likely (22%).

- Again, Toronto students (22%) are the least likely to report bullying others, whereas students in North (36%) region are most likely.

Gambling Activity

The 2003 *OSDUS* contained 10 questions about engaging in various gambling activities during the past year. We present the percentage that report gambling in each activity at least once. Further, the percentage reporting engaging in at least 5 of the 10 activities is used here as an indicator of heavy gambling activity.

2003 (Grades 7 to 12):

- Among all students, the 10 activities ranked in the following manner, from most to least prevalent:

Gambled in other ways	27%
Cards	24%
Lottery tickets	22%
Sports pools	20%
Dice	13%
Bingo	10%
Sports lottery tickets	8%
Video gambling machines	7%
Internet gambling	2%
Casinos	2%

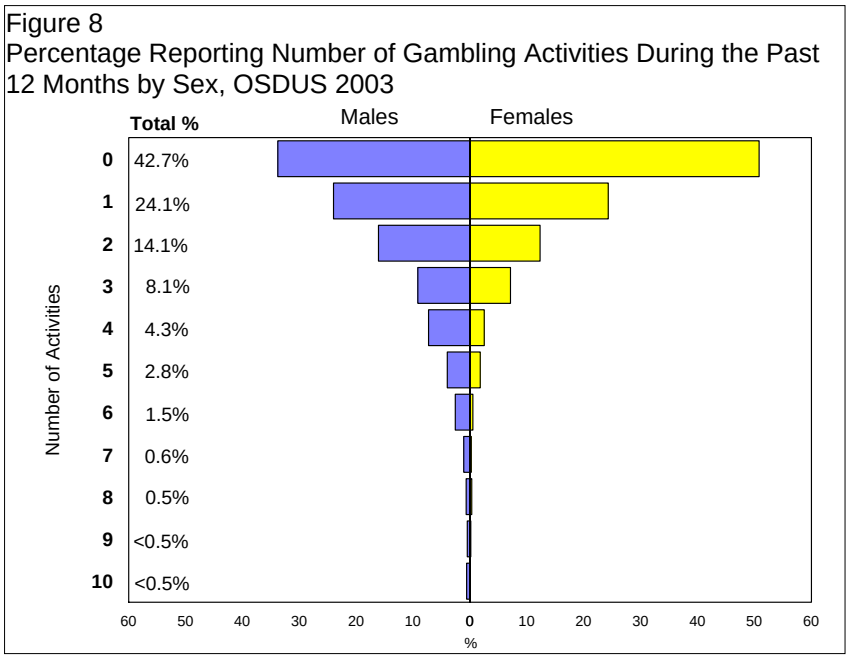
- Among all students, 6% gambled in at least 5 of the 10 activities during the past 12 months, and this group can be considered to be heavy gamblers. The percentage represents about 58,000 students across Ontario.

- Eight of the gambling behaviours vary by sex. Males are significantly more likely than females to play cards for money (32% vs 17%, respectively); play dice for money (19% vs 7%); bet in sports pools (33% vs 9%); buy sports lottery tickets (14% vs 2%); play video gambling machines (9% vs 5%); bet money in a casino (2% vs 1%); bet over the Internet (3% vs 2%); and to gamble in other ways not listed (33% vs 22%). Males are also more likely to report heavy gambling activity than females (10% vs 3%).

- There are significant grade differences for: playing dice for money, sports pools, sports lottery tickets, other lottery tickets, and casino gambling. Generally, these activities gradually increase with grade, with the exception of playing dice, which peaks in grade 9 (17%) and sports pool gambling, which peaks in grade 10 (24%). Despite some variation, heavy gambling activity does not significantly differ by grade.

- Some gambling activities significantly vary by public health region. Playing bingo for money is most likely among students in the Central-South and Central-East regions (at 16% each). Playing dice is most likely in Toronto and the Central-East (18% each). Sports pool betting is most likely in the Central-East (26%). Central-South students are most likely to gamble at video gambling machines (13%) and to bet over the Internet (7%). There is no significant regional variation in heavy gambling activity.

Figure 8
Percentage Reporting Number of Gambling Activities During the Past 12 Months by Sex, OSDUS 2003



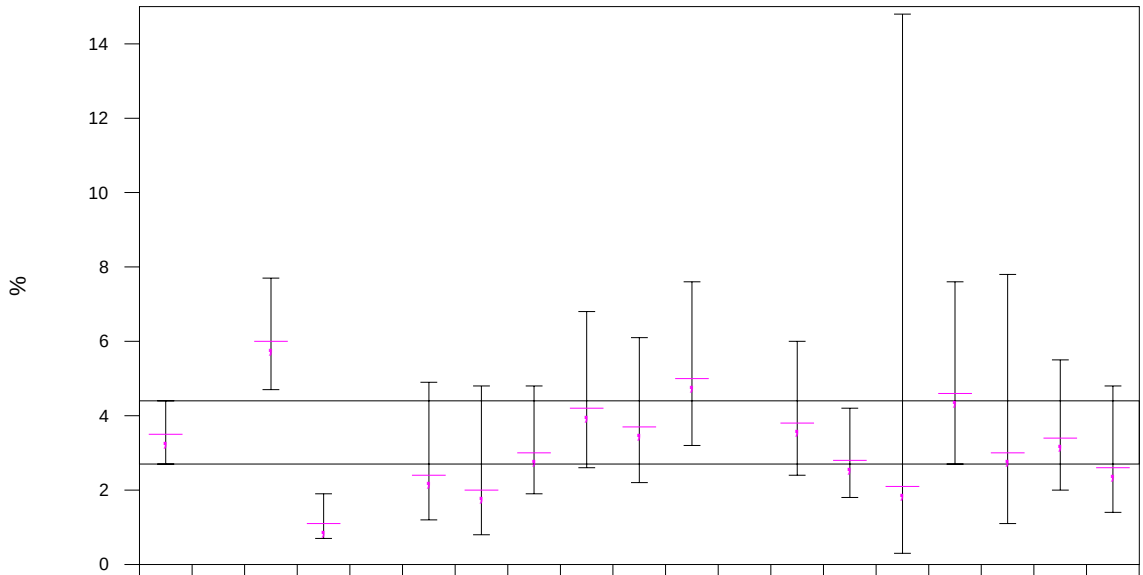
Gambling Problems

Starting in 1999, the *OSDUS* asked students about gambling problems using the South Oaks Gambling Screen Revised for Adolescents (SOGS-RA). This enables us to assess the percentage of students who are at risk for a pathological gambling problem, as defined by answering positive to 4 or more of the 12 questions.

2003 (Grades 7 to 12):

- Overall, 4% (about 33,800 Ontario students) report signs of pathological gambling.
- Males are more likely than females to indicate a pathological gambling problem (6% vs 1%).
- Despite some variation, there are no significant grade differences regarding a pathological gambling problem.
- The prevalence of a pathological gambling problem does not significantly differ by public health region.

Figure 9
Percentage Reporting Pathological Gambling Problem (Past 12 Months) by Sex, Grade and Public Health Region, OSDUS 2003



	Total		M	F		G7	G8	G9	G10	G11	G12		TO	S-W	C-S	C-W	C-E	East	North
Upper I	4.4		7.7	1.9		4.9	4.8	4.8	6.8	6.1	7.6		6	4.2	14.8	7.6	7.8	5.5	4.8
Lower I	2.7		4.7	0.7		1.2	0.8	1.9	2.6	2.2	3.2		2.4	1.8	0.3	2.7	1.1	2	1.4
Percentage	3.5		6	1.1		2.4	2	3	4.2	3.7	5		3.8	2.8	2.1	4.6	3	3.4	2.6

Vertical bars represent 95% confidence intervals; horizontal bar represents 95% confidence interval for total estimate

Co-Existing Problems

This chapter examines the overlap between substance use, mental health, and delinquent behaviour. Given the potential array of mental health and substance use problems, it is important to consider the co-occurrence of problems experienced by students.

Research on co-existing substance use and mental disorders among clinical samples indicate that this problem is not uncommon. Epidemiological estimates, however, are less conclusive mainly due to the lack of general population surveys on adolescents in Canada and the United States. Much is yet to be understood about the prevalence of co-existing disorders, the pattern of age of onset, and about the specific combinations of substances and mental health problems.

Configurations of Risk

This section presents the degree of overlap among the following 4 problems: (1) elevated psychological distress (as indicated by a score of 3 or more on the GHQ-12 screener); (2) hazardous drinking (indicated by a score of 8 or more on the AUDIT screener); (3) a drug problem (indicated by a score of 2 or more on the CRAFFT-D screener)*; and (4) delinquent behaviour (indicated by engaging in 3 or more of 12 delinquent acts). This section examines the nature of the overlap, and the group of students who report 3 or all 4 of these problems.

2003 (Grades 7 to 12):

- Overall, the majority (52%) of students report none of these 4 problems. About 28% report 1 problem, 10% report 2 problems, 7% report 3 problems, and 3% report all 4 problems.

- By far, the most prevalent configuration is psychological distress only, reported by 18% of students. The remaining configurations, such as hazardous drinking only or drug problem only, are reported by 4% or less of the sample.

- The percentage reporting 3 or all 4 problems is 10%. This represents about 100,200 students across Ontario.

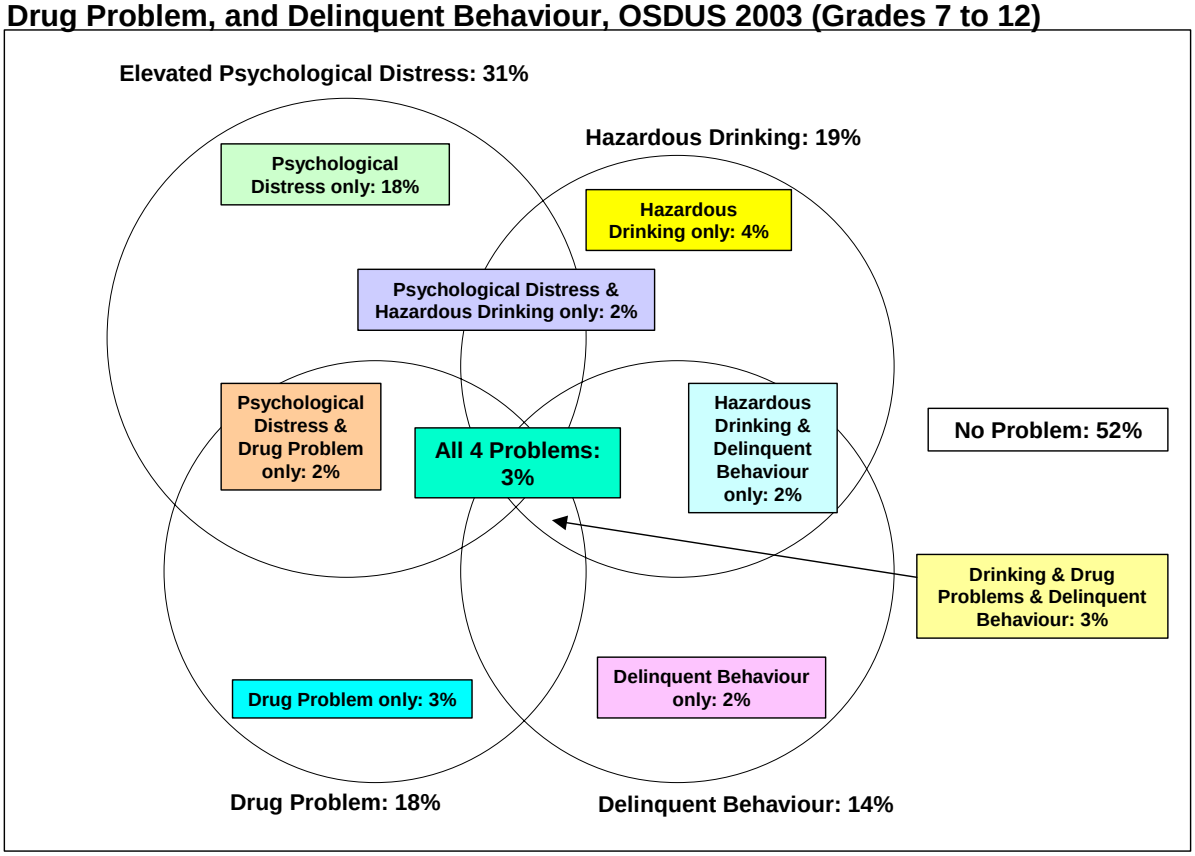
- There is no significant sex difference in reports of 3 or all 4 of these co-existing problems (10% for females, 10% for males).

- There is significant grade variation, with 11th-graders (16%) most likely to experience 3 or all 4 of these problems.

- There are no significant differences among the public health regions.

* Details on the AUDIT and CRAFFT-D screeners can be found in the companion OSDUS drug report *"Drug Use Among Ontario Students, 1977-2003: Detailed OSDUS Findings"* available on our website: http://www.camh.net/research/population_life_course.html

Figure 10
Co-Existing Problems: Elevated Psychological Distress, Hazardous Drinking, Drug Problem, and Delinquent Behaviour, OSDUS 2003 (Grades 7 to 12)



Note: based on a random half sample (N=3464)

Public Health Planning Regions

This section provides an overview of results for Ontario Ministry of Health's seven public health planning regions. The seven regions are delineated as such:

Toronto

Southwest
- Essex
- Kent, Lambton
- Elgin, Oxford, Middlesex
- Bruce, Grey, Perth, Huron

Central South
- Niagara
- Hamilton-Wentworth
- Brant, Haldimand-Norfolk

Central West
- Halton
- Peel
- Wellington, Dufferin
- Waterloo

Central East
- Northumberland, Victoria, Haliburton, Peterborough
- Durham
- York
- Simcoe

East
- Ottawa-Carleton
- Renfrew, Prescott & Russell, Stormont, Dundas & Glengarry
- Lanark/Leeds/Grenville, Hastings, Prince Edward, Frontenac, Lennox, Addington

North
- Algoma, Cochrane
- Manitoulin, Sudbury (R.M.), Sudbury (T.D.)
- Muskoka, Parry Sound, Nipissing, Timiskaming
- Thunder Bay, Kenora, Rainy River

Table 1. Selected Outcomes by Public Health Planning Region (Percentages & 95% CIs), *OSDUS* 2003

	Toronto	South-West	Central-South	Central-West	Central-East	East	North	Ontario
(N=)	(1,097)	(934)	(218)	(1,361)	(724)	(1,049)	(1,233)	(6,616)
Poor Self-Rated Health	13.7 (10.8-17.3)	13.7 (11.2-16.7)	13.0 (8.7-18.9)	13.0 (11.5-14.7)	13.9 (10.9-17.5)	9.8* (7.9-12.2)	12.0 (9.5-15.1)	12.6 (11.7-13.7)
1+ Physical Health Doctor Visit	61.3 (59.4-63.2)	58.4 (54.5-62.3)	52.8** (51.8-53.7)	58.7 (55.6-61.7)	64.4* (58.6-69.7)	64.1* (59.2-68.8)	54.6** (52.2-57.0)	60.2 (58.7-61.7)
Treated for a Physical Injury	26.4** (22.4-31.0)	37.6 (33.6-41.8)	35.9 (30.5-41.8)	35.1 (30.9-39.6)	39.2 (34.3-44.4)	37.4 (33.6-41.3)	42.6** (38.8-46.4)	35.4 (33.7-37.2)
Inactive Past 7 Days	21.3** (17.5-25.6)	14.8 (12.0-18.2)	20.7 (15.0-27.9)	15.4 (12.3-19.1)	13.9 (11.4-16.8)	13.9 (11.8-16.3)	14.1 (11.3-17.4)	16.1 (14.7-17.5)
1+ Mental Health Visit	8.3** (6.4-10.6)	11.8 (9.2-15.0)	13.6 (8.6-20.9)	9.0* (7.2-11.2)	13.2 (10.7-16.1)	13.3 (10.7-16.4)	11.6 (9.5-14.2)	11.0 (10.0-12.2)
Low Self-Esteem	8.6 (6.5-11.2)	9.2 (7.6-11.2)	8.8 (4.4-17.0)	8.8 (7.2-10.6)	11.1 (8.5-14.4)	9.6 (8.2-11.2)	12.3 (9.1-16.4)	9.5 (8.6-10.4)
Elevated Risk for Depression	3.0** (1.7-5.0)	5.7 (3.7-8.7)	11.7** (9.2-14.8)	5.5 (3.8-7.8)	7.2 (5.0-10.2)	5.3 (3.8-7.4)	7.0 (4.6-10.4)	5.6 (4.8-6.6)
Elevated Psychological Distress	31.7 (28.1-35.6)	28.6 (25.0-32.5)	30.9 (14.3-54.5)	33.0 (29.4-36.9)	33.1 (27.0-39.8)	29.0 (24.7-33.8)	28.7 (24.0-34.0)	30.8 (28.9-32.8)
Suicide Ideation	9.3* (6.8-12.6)	13.0 (9.7-17.3)	19.6* (12.9-28.7)	13.1 (9.7-17.6)	14.7 (9.2-22.6)	11.4 (9.2-14.0)	13.3 (10.4-16.9)	12.5 (11.1-14.2)
3+ Delinquent Acts	13.9 (11.2-17.1)	15.3 (11.4-20.3)	7.0 (2.9-16.0)	16.2 (13.8-18.9)	17.2 (11.7-24.7)	10.9 (8.0-14.7)	17.6* (13.9-21.9)	14.3 (12.8-16.0)
1+ Fights at School	14.6 (10.3-20.1)	18.0 (13.1-24.2)	29.6 (17.4-45.5)	17.7 (13.3-23.0)	20.0 (14.2-27.4)	15.1 (12.2-18.6)	19.6 (14.8-25.5)	17.6 (15.7-19.6)
Threatened or Injured with a Weapon at School	7.8 (5.6-10.7)	7.3 (5.1-10.5)	11.7 (5.0-25.1)	8.8 (6.4-11.9)	5.0 (2.5-9.7)	7.0 (4.6-10.5)	7.7 (5.8-10.2)	7.7 (6.5-9.0)
Been Bullied	24.8** (20.4-29.7)	35.4 (29.3-42.1)	47.8** (40.3-55.4)	28.8* (25.5-32.4)	33.6 (27.4-40.5)	36.2 (31.1-41.8)	36.2 (32.0-40.6)	32.7 (30.6-34.9)
Bullied Someone	22.0** (18.0-26.7)	33.9 (29.0-39.1)	28.2 (18.6-40.2)	28.9 (25.7-32.3)	29.6 (22.8-37.4)	31.9 (26.0-38.4)	36.3** (31.6-41.2)	29.7 (27.6-32.0)
Heavy Gambling Activity	5.6 (3.6-8.5)	4.9 (3.1-7.7)	7.4 (3.6-14.5)	6.1 (4.2-8.8)	10.4* (6.1-17.1)	5.1 (3.1-8.3)	6.1 (3.9-9.4)	6.1 (5.0-7.4)
Pathological Gambling Problem	3.8 (2.4-6.0)	2.8 (1.8-4.2)	2.1 (0.3-14.8)	4.6 (2.7-7.6)	3.0 (1.1-7.8)	3.4 (2.0-5.5)	2.6 (1.4-4.8)	3.5 (2.7-4.4)
3 or All 4 Co-existing Problems†	9.8 (6.9-13.8)	11.1 (8.2-14.9)	3.9 (1.0-13.8)	11.0 (8.2-14.5)	10.7 (7.2-15.6)	9.3 (6.5-13.1)	11.1 (8.1-15.1)	10.1 (8.8-11.6)

Notes: (1) Entries in brackets are 95% confidence intervals; (2) † refers to reporting 3 or all problems among: psychological distress, hazardous drinking, drug problem, and delinquent behaviour; (3) *p<.05, **p<.01 significant difference, public health region versus Ontario.
Source: *OSDUS*, Centre for Addiction and Mental Health

Multiple Outcomes, Multiple Influences

In this section we examine the relationship between certain risk factors and nine of the mental health problems and behaviours discussed in this report (see Appendix Table A3 for definitions):

- risk for depression
- psychological distress
- suicide ideation
- delinquent behaviour
- pathological gambling problem
- hazardous drinking
- illicit drug use, including cannabis
- illicit drug use, excluding cannabis
- 3 or all 4 co-existing problems.

In addition to demographics, we examined the influence of family and school-related risk factors, for example, the strength of the parent-child relationship and the level of attachment to school (see Appendix Table A3 for risk factor definitions). The impact of each risk factor is assessed, taking other factors into account, using adjusted logistic regression analyses.

It should be noted that because these data were collected at one point in time, no causal statements can be made and we can only suggest correlational relationships. For example, we cannot determine whether low school marks cause poor mental health or whether poor mental health causes low marks.

The results of the logistic regressions (see Table A4 for an overview) showed that the factors most consistently associated with the nine outcomes are ordered as follows:

- the parent-child relationship (9 of 9 outcomes)
- parental monitoring (8 of 9 outcomes)
- school marks (7 of 9)
- sex (6 of 9)
- grade; family immigrant status; school attachment (5 of 9)
- family structure (3 of 9)
- school safety; region (2 of 9)
- parents' education; school mobility (0 of 9)

Parent-Child Relationship
Compared to students who report a good relationship with their parents, students with a poor relationship with their parents are more likely to be at risk for depression, report psychological distress, and thoughts about suicide, even after controlling for other factors. They are also more likely to report delinquent behaviour, a pathological gambling problem, hazardous drinking, to use an illicit drug, and to report experiencing co-existing problems.

Parental Monitoring
Students who report that their parents usually do not know their whereabouts are more likely to report all outcomes, except for depression.

School Marks
Compared to students who achieve an A or B average, students with poor marks (C average or below) are more likely to report suicide ideation. They are also more likely to report all the externalizing problems (delinquency, pathological gambling, hazardous drinking, any illicit drug use including and excluding cannabis), as well as co-existing problems.

Sex
Females are at greater risk for experiencing internalizing problems such as depression, elevated psychological distress and suicide ideation.

Males are more likely to report delinquent behaviour and pathological gambling. Interestingly, after accounting for other factors, there is no difference between males and females in hazardous drinking, illicit drug use, and co-existing problems.

Grade
After accounting for the other factors, grade (age) is related to five of the nine outcomes.

- Between grade 7 and grade 8 the likelihood of depression increases.

- Between grade 8 and grade 9, the likelihood of hazardous drinking and illicit drug use (including and excluding cannabis) increases, however the likelihood of depression decreases.

- Compared to 9th-graders, 10th-graders are more likely to drink hazardously and to use an illicit drug.

- The move from 10th- to 11th-grade is accompanied by a higher likelihood of psychological distress and illicit drug use, including and excluding cannabis.

Family Immigrant Status
First-generation immigrant students (those who were born outside of Canada, as were their parents) are more likely to report a gambling problem compared to native students (those born in Canada, as well as their parents).

However, first-generation immigrant students are less likely to report hazardous drinking, illicit drug use, and co-existing problems, compared to native students.

School Attachment
Compared to those who feel very attached to their school, those students who feel low attachment – that is, they feel disconnected to their school – are more likely to report depressive symptoms, psychological distress, suicide ideation, delinquent behaviour, and co-existing problems.

Family Structure
Compared to students in a two-parent family, those in a single-parent family are more likely to report delinquent behaviour, hazardous drinking, and co-existing problems.

School Safety
Students who do not feel safe at school are more likely to report the internalizing problems of depression and psychological distress.

Public Health Region
Compared to the province as a whole,

- Toronto students are less likely to be at risk for depression and less likely to use any illicit drug excluding cannabis.
- Southwest students are more likely to use any illicit drug use excluding cannabis.
- Central-South students are more likely to be at risk for depression.
- Central-West students are more likely use any illicit drug excluding cannabis.

Parents' Education
After controlling for other factors, parents' level of education is not related to any outcome.

School Mobility
Having changed schools two or more times during the past five years is not related to any outcome.

Figure 11
Percentage Reporting Internalizing and Externalizing Problems by Sex, OSDUS 2003

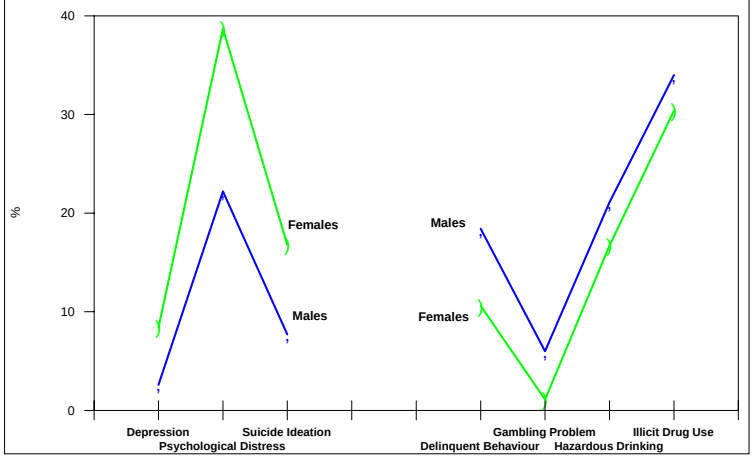
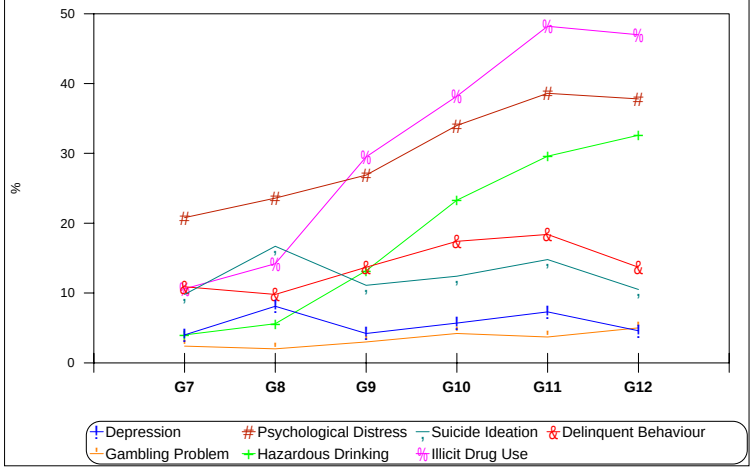


Figure 12
Percentage Reporting Internalizing and Externalizing Problems by Grade, OSDUS 2003



Overview of Trends

Short-Term Trends, 1999-2003 (Grades 7 to 12)

Physical Health

- Students in 2003 (13%) are significantly more likely to be in poor health compared to students in 2001 (10%) and 1999 (9%).

- Between 1999 and 2003, there was no significant change in the percentage of all students who were inactive during the past 7 days – hovering between 14% and 16%.

Health Care Utilization

- Over the short-term there has been a significant decline in the percentage of all students who saw a doctor at least once in the past year, from 70% in 1999 down to 60% in 2003.

- Between 1999 and 2003, there was no change in the number of mental health care visits among the total sample of students.

- Over the short-term, significantly fewer students in 2003 (6%) report medical barbiturates use than in 2001 (12%) and 1999 (13%).

- There are no significant changes over the short-term in the medical use of stimulants, or tranquillizers.

- Medical Ritalin use significantly declined among all students in 2003 (2.5%) compared to 1999 (4%).

Internalizing Indicators

- Low self-esteem remained stable between 1999 and 2003 (at 10%) among the total sample.

- Between 1999 and 2003, there was no significant change regarding elevated risk for depression.

- Among the total sample, elevated psychological distress significantly increased from 26% in 2001 up to 31% in 2003. Note that the 2003 level corresponds to the previous 1999 level (30%).

- Between 2001 (11%) and 2003 (12%), there was no significant change in the percentage of students who contemplated suicide.

Externalizing Indicators

- The percentage of all students reporting at least 3 of the 12 delinquent acts significantly declined between 1999 and 2003, from 19% to 14%.

- The percentage of all students reporting assaulting someone significantly declined between 1999 and 2001 (from 20% to 13%), and still remains relatively low in 2003 at 12%.

- Reports of weapon carrying significantly declined between 1999 (14%) and 2003 (10%).

- No significant short-term changes were found for gang fighting.

- The percentage of all students reporting a pathological gambling problem significantly declined between 1999 and 2003, from 6% to 3.5%.

Long-Term Trends, 1991-2003 (Grades 7, 9, and 11 only)

Physical Health

- Self-reports of poor health among the total sample of students were lowest in 1991, at 6%. Poor health has significantly increased to an all-time high in 2003 at 12%.

- There was no significant change in physical inactivity between 1997 and 2003.

Health Care Utilization

- Over the long-term, the medical use of barbiturates declined between 1977 to 1997, spiked in 1999, but has since been declining.

- The medical use of stimulants declined between 1977 and 1991, steadily increased until 1999, at which point it stabilized.

- Between 1977 and 1995, the medical use of tranquillizers declined, and then increased slightly until 1999. Since that time, use has remained stable.

Internalizing Indicators

- There was no significant change in low self-esteem among the total sample between 1995 and 2003.

- There was no significant change in elevated risk for depression among the total sample between 1997 and 2003.

Externalizing Indicators

- Between 1993 and 2003, the peak in the proportion of students reporting 3 or more of 12 delinquent acts occurred in 1997 (21%). Since that time, the percentage declined and has been holding steady in recent years, at about 14%.

- Vandalism increased significantly among the total sample between 1991 (20%) and 1999 (23%), but then dropped in 2001 (15%) and still remains relatively low in 2003 at 16%.

- Among the total sample, theft under $50 has been declining since 1995 (21%) and is still currently lower at 14%.

- The percentage reporting selling cannabis is significantly higher in 2003 (8%) compared to a decade ago (3% in 1991).

- Assault peaked in 1997 (22%) and subsequently declined to 12% in 2001 and still remains lower at 12% in 2003.

- The percentage reporting carrying a weapon declined steadily over the 1990s (16% in 1993 vs 11% in 2003).

- Gang fighting remained stable between 1991 and 2003 among the total sample, hovering between 5% and 7%.

Table 2. Overview of Selected Trends in Mental Health and Well-Being Indicators among the Total Sample of Ontario Students

Indicator	Period	Among Grades	Change
% poor health (current)	1991-2003	G7, G9, G11	Increased from 6% to 12%
% physically inactive (past 7 days)	1991-2003	G7, G9, G11	Stable
% reporting 1+ physical health care visits (past year)	1999-2003	G7 to G12	Decreased from 70% to 60%
% reporting 1+ mental health care visits (past year)	1999-2003	G7 to G12	Stable
% used Ritalin medically (past year)	1999-2003	G7 to G12	Decreased from 13% to 6%
% used barbiturates medically (past year)	1999-2003	G7 to G12	Decreased from 4% to 2%
% low self-esteem (current)	1995-2003	G7, G9, G11	Stable
% at elevated risk for depression (past 7 days)	1997-2003	G7, G9, G11	Stable
% psychological distress (past few weeks)	1999-2003	G7 to G12	Fluctuated: increased from 26% in 2001 to 31% in 2003, but 2003 % is similar to 1999 (30%)
% suicide ideation (past year)	2001-2003	G7 to G12	Stable
% pathological gambling problem (past year)	1999-2003	G7 to G12	Decreased from 6% to 3.5%
% 3+ delinquent acts (past year)	1993-2003	G7, G9, G11	Peaked in 1997 (21%), decreased to 14% in recent years (2001-2003)
% carrying a weapon (past year)	1993-2003	G7, G9, G11	Peaked in 1993 (16%), steadily decreased to 9% in 2001, and still relatively low (11%)
% assaulting someone (past year)	1991-2003	G7, G9, G11	Peaked in 1997 (22%), decreased to 12% in recent years (2001-2003)
% gang fighting (past year)	1991-2003	G7, G9, G11	Stable
% vandalizing property (past year)	1991-2003	G7, G9, G11	Peaked in 1999 at 23%, decreased to 15% in recent years (2001-2003)
% reporting theft < $50 (past year)	1991-2003	G7, G9, G11	Peaked in 1995 (21%), decreased to about 14% in recent years (2001-2003)
% selling cannabis (past year)	1991-2003	G7, G9, G11	Increased from 3% to 8%

Notes: the changes presented are based on the total sample of students; subgroup changes are not presented.

SUMMARY

The Public Health Approach Towards Mental Health and Risk Behaviour Problems

Designating mental health problems and risky behaviours as public health issues enables health professionals from various disciplines to work together on prevention. Preventing problems from occurring, or at least reducing the risk, is preferable over treating problems, both on an individual and a societal level.

The public health approach involves: identifying the pervasiveness of a given problem among the general population; identifying its timing and pattern during the life course; tracking trends in the prevalence and incidence over time; identifying risk and protective factors; designing preventive programs and active health promotion programs; and disseminating findings to the general public.

Some Encouraging Findings

There are many findings in this report that should be viewed as encouraging. Indeed, the majority of students:

- rate their health as excellent or very good;
- are satisfied with their weight;
- get along very well with their parents;
- report a positive school climate – that is, a feeling of connectedness to their school, feeling that the teachers are excellent, and feeling safe at school;
- do not report internalizing problems (e.g., depressive symptoms) or externalizing problems (e.g., violent behaviour).

In addition, we found several <u>improvements in well-being over time</u>:

- Compared to 1999, fewer students today report a pathological gambling problem. Compared to 1999, fewer students today report medical Ritalin use, and medical barbiturates use.
- Fewer students today report carrying a weapon compared to their counterparts in 1993. Reports of assaulting someone have also declined among students since 1997.
- Reports of vandalism and theft under $50 are lower today than a decade ago.

Some Public Health Flags

Although the majority of students do not report a problem, a considerable minority report some form of impaired well-being or functioning:

About one-in-three students report…
- they were treated for one or more physical injuries in the past year
- elevated psychological distress
- they were bullied at school
- bullying someone at school.

About one-in-five students report…
- fighting at school
- they do not like school.

About one-in-eight students report…
- suicide ideation
- delinquent behaviour
- assaulting someone
- concern about personal safety at school.

About one-in-ten students report…
- poor health
- physical inactivity
- low self-esteem
- visiting a mental health professional
- carrying a weapon
- co-existing problems.

About one-in-twenty students …

- are at risk for depression
- have no one to talk to about their problems
- were prescribed medication to treat depression, anxiety, or both problems
- report gang fighting
- report a pathological gambling problem.

In addition, some findings point to potentially disturbing trends:

- Self-rated poor health has increased over the past decade and is currently at an all-time high at about 13%.

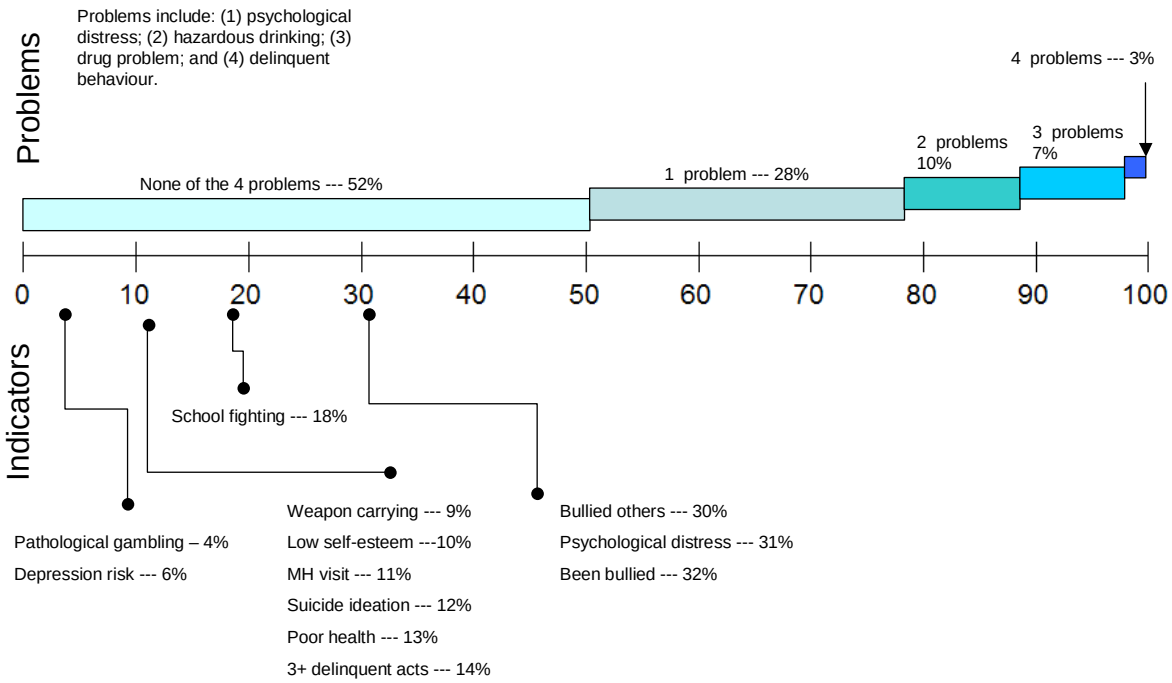
- The percentage of students reporting selling cannabis is higher today than it was in 1991.

Important Factors Related to Adolescent Mental Health and Well-Being

The present report found that well-being varies greatly depending on sex, even after controlling for other factors. One general pattern is that females are more likely to experience internalizing problems (such as depression, psychological distress, and suicide ideation), whereas males exhibit risky or externalizing behaviours (such as delinquent acts and pathological gambling).

Age is also significantly related to mental health and well-being. The general pattern found is that psychological distress, poor health, delinquent behaviour, and co-existing problems increase with grade and tend to peak in late adolescence. Bullying behaviour and fighting at school peak in early adolescence and subside as grade increases.

Figure 13 **Overview of Mental Health Indicators and Problems, OSDUS 2003, Grades 7 to 12**



Other significant risk factors that are not static, and thus can be addressed by interventions, relate to the family and school settings. Specifically, the quality of the parent-child relationship and the level of parental monitoring show consistent associations with both internalizing and externalizing problems. We also found that being in a family with a single-parent increases the likelihood of some externalizing problems, such as delinquent behaviour and hazardous drinking.

Being an immigrant or having immigrant parents seems to be a protective factor against hazardous drinking, illicit drug use, and co-existing problems, even after controlling for other variables such as parental supervision. This finding is consistent with other Canadian and American research showing that immigrants have improved mental health and physical health compared to those who are native-born. Researchers posit that this improvement may be due to better lifestyle habits, increased religiosity, or increased social support experienced by recent immigrants. However, one opposing finding in this report, which requires future monitoring, is that immigrant students are more likely to report a gambling problem.

School marks and school climate factors – such as the degree of connectedness, concern over personal safety – are associated with well-being. Students who do not do well academically are likely to engage in risky behaviours. Students who do not feel connected to their school, and those who feel that their personal safety is somehow threatened, are likely to experience internalizing problems. We cannot know from our data, however, whether school connectedness influences poor grades, or whether the reverse holds.

Future OSDUS Monitoring

In order to assess the public health implications of some of our findings, careful monitoring of the following is necessary:

- the level of physical inactivity and self-rated health,
- psychological distress, and
- cannabis selling.

Further, given the expansion of legalized gambling in Ontario, another indicator worthy of continued monitoring is the rate of gambling and related problems among adolescents – who tend to display more problems than adults.

The purpose of this report was to provide a snapshot of Ontario students' well-being and to assess whether such indicators have changed over time. A major strength of these data is that they are not based on a selective sample of adolescents already experiencing emotional or other difficulties – they are based on a large representative sample of the population. Consequently, our findings should be highly generalizable.

Our findings are consistent with many expectations of the adolescent period. The majority of students report positive indicators of well-being and a minority report negative indicators. However, this minority can be sizeable – over one-in-ten students (about 122,100) report suicide ideation and just under one-in-three (about 303,300) report elevated distress. These types of results should remind us of the vulnerability of this age group. Although several recent initiatives have been made in the area of early intervention programs with infants and children (e.g., Healthy Babies, Healthy Children, a prevention/early intervention initiative funded by the Ontario government), few widespread programs have been directed toward early adolescence, a period known for the increasing onset of emotional difficulties and psychological disorders. Indeed, health professionals have also commented on the relative lack of research on adolescent psychopathology compared to children and adults.

Regarding trends over time, our data pointed to some potentially encouraging results, with some declines in gambling problems and weapon carrying. However, many of these changes occurred only in recent years; consequently, it is too early to know with confidence whether these changes represent the beginning of a new trend or the existence of a brief downward episode. It is only with continued monitoring that these questions can be addressed.

APPENDIX TABLES

Table A1. Percentage Reporting Various Mental Health and Well-Being Indicators for the Total Sample (N=6,616), and by Sex, 2003 *OSDUS*

Indicator	Estimated Number of Ontario Students	Total (95% CI)	Males	Females	
% poor health (current)	**122,000**	**12.6 (11.7-13.7)**	9.9	15.2	*
% physically inactive (past 7 days)	**152,400**	**16.1 (14.7-17.5)**	15.6	16.5	
% reporting 1+ doctor visits (past year)	**566,000**	**60.2 (58.7-61.7)**	53.8	66.2	*
% reporting 1+ mental health care visits (past year)	**103,400**	**11.0 (10.0-12.2)**	8.1	13.7	*
% treated for a physical injury (past year)	**336,900**	**35.4 (33.7-37.2)**	38.0	33.0	*
% used Ritalin medically (past year)	**24,400**	**2.5 (2.1-3.1)**	3.5	1.6	*
% used Barbiturates medically (past year)	**53,900**	**5.7 (4.8-6.9)**	6.4	5.1	
% used Stimulants medically (past year)	**54,700**	**5.8 (5.0-6.8)**	6.2	5.5	
% used Tranquillizers medically (past year)	**25,800**	**2.7 (2.2-3.4)**	3.4	2.1	*
% low self-esteem (current)	**89,600**	**9.5 (8.6-10.4)**	7.3	11.4	*
% at elevated risk for depression (past 7 days)	**55,200**	**5.6 (4.8-6.6)**	2.6	8.4	*
% psychological distress (past few weeks)	**303,300**	**30.8 (28.9-32.8)**	22.2	38.7	*
% suicide ideation (past year)	**122,100**	**12.5 (11.1-14.2)**	7.9	16.8	*
% 3+ delinquent acts (past year)	**135,500**	**14.3 (12.8-16.0)**	18.4	10.6	*
% carrying a weapon (past year)	**90,200**	**9.6 (8.4-11.0)**	14.9	4.9	*
% fighting at school (past year)	**168,100**	**17.6 (15.7-19.6)**	26.8	9.2	*
% threatened/injured with weapon at school (past year)	**73,200**	**7.7 (6.5-9.0)**	10.1	5.5	*
% been bullied (since September)	**310,300**	**32.7 (30.6-34.9)**	35.3	30.3	*
% bullied others (since September)	**282,900**	**29.7 (27.6-32.0)**	34.9	25.1	*
% 5+ gambling activities (past year)	**58,000**	**6.1 (5.0-7.4)**	9.6	3.0	*
% pathological gambling problem (past year)	**33,800**	**3.5 (2.7-4.4)**	6.0	1.1	*
% reporting 3 or all 4 co-existing problems	**100,200**	**10.1 (8.8-11.6)**	10.4	9.8	

Notes: the estimated number of students is based on a student population of about 970,000; 95% CI is the confidence interval; * indicates a significant sex difference (p<.05), *not* controlling for other factors.

Table A2. Percentage Reporting Various Mental Health and Well-Being Indicators by Grade, 2003 *OSDUS*

Indicator	*G7*	*G8*	*G9*	*G10*	*G11*	*G12*	
% poor health (current)	6.8	9.8	11.4	14.8	16.6	14.9	*
% physically inactive (past 7 days)	18.5	11.5	16.2	16.9	16.2	16.5	
% reporting 1+ doctor visits (past year)	57.4	56.8	60.6	61.6	62.2	61.4	
% reporting 1+ mental health care visits (past year)	10.0	10.3	9.0	11.1	14.4	11.0	*
% treated for a physical injury (past year)	32.5	36.3	38.3	35.1	36.0	33.6	
% used Ritalin medically (past year)	3.7	2.4	2.8	2.6	2.6	1.1	
% used Barbiturates medically (past year)	6.7	4.2	5.1	5.2	7.1	5.8	
% used Stimulants medically (past year)	4.7	3.8	6.6	6.0	7.6	5.6	
% used Tranquillizers medically (past year)	2.4	1.7	2.8	2.3	3.8	3.2	
% low self-esteem (current)	9.0	7.7	9.9	10.7	9.8	9.1	
% at elevated risk for depression (past 7 days)	4.0	8.1	4.2	5.7	7.3	4.6	
% psychological distress (past few weeks)	20.8	23.6	26.9	34.0	38.6	37.8	*
% suicide ideation (past year)	9.8	16.7	11.1	12.4	14.8	10.5	
% 3+ delinquent acts (past year)	10.9	9.8	13.7	17.4	18.4	13.7	*
% carrying a weapon (past year)	9.9	6.6	12.2	8.6	11.8	8.0	
% fighting at school (past year)	29.7	26.0	19.6	14.5	11.0	8.8	*
% threatened/injured with weapon at school (past year)	7.3	9.8	7.6	10.0	6.8	4.6	
% been bullied (since September)	47.1	38.7	32.8	32.6	28.7	19.8	*
% bullied others (since September)	31.7	32.2	32.7	30.5	29.4	22.1	*
% 5+ gambling activities (past year)	5.8	4.5	5.9	4.8	7.2	7.9	
% pathological gambling problem (past year)	2.4	2.0	3.0	4.2	3.7	5.0	
% reporting 3 or all 4 co-existing problems	3.7	4.6	8.4	12.9	15.5	13.2	*

* indicates a significant grade difference (p<.05), *not* controlling for other factors.

Table A3. Terminology

Outcome in Logistic Regression Analyses	Definition
Risk for Depression	Reporting "often" or "always" experiencing all 4 symptoms on the Centre for Epidemiological Studies Depression (CES-D) Scale during the past 7 days.
Elevated Psychological Distress	Reporting at least 3 of the 12 symptoms on the General Health Questionnaire (GHQ), which measures three overarching problems: depressed mood, anxiety, and problems with social functioning over the past few weeks.
Suicide Ideation	Reporting having seriously considered suicide during the past 12 months.
Delinquent Behaviour	Reporting at least 3 of 12 delinquent behaviours during the past 12 months.
Pathological Gambling Problem	Reporting at least 4 of 12 items on the South-Oaks Gambling Screen Revised for Adolescents (SOGS-RA), which measures gambling problems during the past 12 months.
Hazardous Drinking	Reporting a score of at least 8 out of 40 on the AUDIT screen, which measures heavy drinking and alcohol-related problems during the past 12 months.
Any Illicit Drug Use	Reporting use of any one of the following 17 drugs during the past 12 months: cannabis, barbiturates, stimulants, tranquillizers, cocaine, crack, methamphetamine, LSD, other hallucinogens, PCP, heroin, ecstasy, ice, GHB, Rohypnol, Ketamine, and non-medical Ritalin. This estimate excludes the use of glue, solvents, and prescription drugs.
Any Illicit Drug Use (excludes Cannabis)	Same as definition above, but also excludes cannabis use.
3+ Co-existing Problems	Reporting three or all four of the following problems: elevated psychological distress, hazardous drinking, drug problem, and delinquent behaviour.

Risk Factor in Logistic Regression Analyses	% 2003	Subgroup Categories
Sex		Male; Female
Grade		7, 8, 9, 10, 11, 12
Public Health Planning Region	(18.3%)	Toronto (TO)
	(16.8%)	Southwest (SW)
	(4.7%)	Central-South (CS)
	(22.8%)	Central-West (CW)
	(10.3%)	Central-East (CE)
	(19.7%)	East (E)
	(7.4%)	North (N)
Family Structure	(81.8%)	Intact (two parents; includes step-parent)
	(18.2%)	Not Intact (single parent)
Family Immigrant Status	(55.0%)	Native (student and parents born in Canada)
	(29.3%)	Second Generation Immigrant (student born in Canada, parents born outside Canada)
	(15.7%)	First Generation Immigrant (student and parents born outside Canada)
Parents' Education	(20.4%)	High (both parents graduated or attended university)
	(74.9%)	Moderate (other)
	(4.7%)	Low (neither parent graduated high school)
Parent-Child Relationship	(95.0%)	Good (get along very well or "ok" with parents)
	(5.0%)	Poor (not getting along with parents)
Parental Monitoring	(83.4%)	High (parents always/usually know whereabouts)
	(16.6%)	Low (parents sometimes/seldom/never know whereabouts)
School Marks	(81.9%)	Overall As or Bs
	(18.1%)	Overall Cs or below
Number of School Moves Past 5 Years	(85.0%)	None or 1 move
	(15.0%)	2 or more moves
Perception of Personal Safety in School	(31.0%)	High
	(63.6%)	Moderate
	(5.4%)	Low
School Attachment	(25.3%)	High
	(64.3%)	Moderate
	(10.4%)	Low

Table A4. Summary of Multivariate Analysis (Adjusted Logistic Regressions) for 9 Outcome Measures

	Internalizing			Externalizing					
Risk Factors	***Risk for Depression***	***Elevated Psychological Distress***	***Suicide Ideation***	***Delinquent Behaviour***	***Pathological Gambling Problem***	***Hazardous Drinking***	***Any Illicit Drug Use***	***Any Illicit Drug Use (excl. Cannabis)***	***3+ Co-Existing Problems***
Sex	F	F	F	M	M	·	·	·	·
Grade	8 ↑ 7 9 ↓ 8	11 ↑ 10	·	·	·	10 ↑ 9	9 ↑ 8 10 ↑ 9 11 ↑ 10	9 ↑ 8 10 ↑ 9 11 ↑ 10	·
Public Health Region (vs Ontario)	TO ↓ Ont CS ↑ Ont	·	·	·	·	·	·	TO ↓ Ont SW ↑ Ont CW ↑ Ont	·
Family Life									
Single-Parent Family	·	·	·	+	·	+	·	·	+
First Generation Immigrant	·	·	·	·	+	—	—	—	—
Low Parent Education	·	·	·	·	·	·	·	·	·
Poor Parent-Child Relationship	+	+	+	+	+	+	+	+	+
Low Parental Monitoring	·	+	+	+	+	+	+	+	+
School Life									
Poor Marks (Cs or less)	·	·	+	+	+	+	+	+	+
2+ School Moves	·	·	·	·	·	·	·	·	·
Perceive School as Unsafe	+	+	·	·	·	·	·	·	·
Low School Attachment	+	+	+	+	·	·	·	·	+

+ outcome is significantly more likely — outcome is significantly less likely · no significant effect on outcome