

Healthy Settings for



Young People in Canada



Public Health
Agency of Canada

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Health Behaviour
in School-aged Children

A World Health Organization Cross-National Study

To promote and protect the health of Canadians through leadership, partnership, innovation and action in public health.

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Foreword

The Public Health Agency of Canada was created to strengthen the Government of Canada's ability to promote and protect the health of Canadians, and to provide a focal point to lead efforts in the advancement of public health both nationally and internationally.

As Canada's Chief Public Health Officer, it is my responsibility to report on matters relating to public health and share information and best practices with governments, public health authorities, and other stakeholders in the health sector, both in Canada and internationally. In this capacity, I am pleased to present the Canadian report on the 2006 Health Behaviour in School-aged Children (HBSC) study, *Healthy Settings for Young People in Canada*.

HBSC is a valuable tool for monitoring changes in health behaviours and important health outcomes among young Canadians. The broad range of health-related issues addressed in the survey reflects the complicated lives of young people. The report identifies the importance of the links between physical, social, and emotional states, as well as between contexts, behaviours, and outcomes. By examining family and peer relationships, the school setting, and socio-economic status, we can gain insight into the strong impact certain settings and conditions have on risk-taking behaviours and health outcomes.

This knowledge helps us to measure the health progress of Canada's young people and to better promote their health and well-being. It allows us to plan effective, evidence-based youth health policy and programming initiatives. Canadian HBSC findings also provide a valuable comparative data source for other developed countries participating in the HBSC study with similar youth health issues. HBSC is one of several resources that support the Agency's vision of healthier Canadians in a healthier world.



Dr. David Butler-Jones
Chief Public Health Officer
Public Health Agency of Canada

Executive Summary

The Health Behaviour in School-aged Children study is a continuing, cross-national research project conducted in collaboration with the WHO Regional Office for Europe. There are now 41 research teams from WHO Europe countries and regions and from North America. The study aims to contribute to new insight and increased understanding with regards to the health, well-being, and health behaviours of young people (aged 11 to 15 years) and their social settings and conditions, especially the school environment. HBSC is Canada's only national-level health promotion database for this age group. It is based on a broad determinants-of-health model with both individual data and school-level data such as current policies and programs. The federal government has supported the Canadian HBSC study since 1988.

This report presents key findings from the 2006 cycle of HBSC.

What are some of the main causes for concern identified in this report?

Healthy living practices and outcomes

- Almost half of Grade 6 to 10 young people in Canada are physically inactive, with the problem being particularly worrisome in girls and older students.
- Fewer than half of students indicate that they consume fruits or vegetables at least once a day.
- Approximately 26% of boys and 17% of girls are either overweight or obese.
- Obesity among young people shows an increase from 4% in 2002 to 6% in 2006.

Risk behaviours that impact on health

- Just under one-third of Canadian Grade 9 and 10 students indicate that they have smoked a cigarette.
- Over half of Grade 9 and 10 students report having tried alcohol by the time they were 15 years old.
- Twenty-two percent of students in Grades 9 and 10 report having had sexual intercourse.

Bullying and fighting behaviours and their outcomes

- Just under two-fifths of students report being victims of bullying.
- Reports of racial bullying show a slight increase from 2002 to 2006.
- Fourteen percent of boys who carry weapons report that they carry handguns or other firearms. More girls than boys who carry weapons report carrying tear gas or pepper spray.

Activities and outcomes related to injuries	• About 1 in 5 students typically miss one or more days of school or other usual activities in a 12-month period due to an injury. • The percentage of injuries that happen during organized activities tends to increase with advancing grade.
Emotional health status or outcomes	• By Grade 10, girls clearly are experiencing poorer emotional health than boys.

What is the encouraging news?

Physical activity shows an increase from 2002 to 2006.

Frequent **consumption of sweets** (i.e., candy or chocolate) and non-diet soft drinks is down compared to 2002.

Daily **smoking** shows a downward trend for both genders since 2002.

Reports of **drinking beer** at least once a week by girls and boys in Grades 6 and 8 have declined over the five Canadian HBSC survey years.

Getting “**really drunk**” twice or more shows a slight decline from 2002 to 2006.

Reports of **trying cannabis** show a significant drop for boys in 2006. Overall results from 2006 show that just under two-fifths of boys and girls report ever having tried the drug.

Use of **cannabis** on a monthly basis among students in Grades 9 and 10 in the HBSC sample is quite low.

Condom use during their last sexual intercourse is reported by four-fifths of sexually active boys in Grades 9 and 10.

Prevalence of **sexual harassment** has declined since 2002.

Why is context important to young people's health?

The home setting	• Students with low parent trust and communication are significantly more likely to report getting drunk more than twice. Young people living with both parents are less likely to be involved with bullying.
------------------	---

The school setting	• The rate of serious injury among students reporting high academic achievement (average mark) is less than half that of those reporting the lowest academic achievement. Higher academic achievement and quality of school experience (attitude towards school) are both strongly related to emotional health.
The peer context	• Better communication with one's friends is strongly related to more risk behaviours, but not to more smoking. Young people who report having peers with higher levels of pro-social attitudes are much less likely to be involved in bullying.
Socio-economic conditions	• Problems of inactivity, poor nutrition, and obesity are particularly apparent in young people from homes with the lowest level of family affluence. Young people from families with greater affluence report higher rates of serious injury, as well as higher rates of bullying.

What do we conclude for Canadian young people?

1. Assets at the school level are consistently and strongly associated with positive health behaviours and outcomes.
2. Home and family assets are usually associated with positive health behaviours and outcomes.
3. Socio-economic advantages are associated with some positive health behaviours and outcomes, but also with higher risks of injury and bullying others. Socio-economic assets are not, however, associated with alcohol or cannabis use.
4. Peer and friend assets have both positive and negative associations with health (i.e., mixed influences on risk behaviours).

We conclude that the above order of these four contexts could indicate the best *opportunity* for success in interventions, that is, a focus on the school and home settings. At the same time, the reverse order could indicate the greatest *need* for interventions within the peer context and in social income policy.

Acknowledgements

This report presents findings from the fifth cycle of the Health Behaviour in School-aged Children study in Canada. We would like to acknowledge the collaborative efforts of the 41 participating research teams from WHO Europe and North America.

The administration of the HBSC survey and the presentation of findings in this report were made possible by funding from the Public Health Agency of Canada's Division of Childhood and Adolescence. Special appreciation is given to Patricia Walsh, Senior Research Analyst, Strategic Policy and Research Section, Division of Childhood and Adolescence; Eric Arnold, Policy and Research Analyst, Strategic Policy and Research, Division of Childhood and Adolescence; and Amina Hussein, Strategic Policy and Research, Division of Childhood and Adolescence, for providing invaluable input throughout the planning of the study and the writing of the report.

The researchers who authored the different topic chapters of the report include the following specialists:

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Hana Saab, Social Program Evaluation Group, Queen's University.

The Social Program Evaluation Group at Queen's University was responsible for collecting and analyzing the data, under the supervision and organization of Matthew King. Jeffrey Hamacher, Diane Davies, and Beverley Coles were responsible for contacting participating schools and jurisdictions and coordinating the administration of the survey. Arthur Everett led the team, made up of Laura Seliskie, Sudha Raman, and Courtney Jolliffe, that carried out in-school survey administration. Jolene Wintermute was responsible for the organization of data entry, which was performed by an enthusiastic group of staff and students: Zhaoping Rao, Crystal Ka Leng Hoi, Joan Sutherland, Sara Darvish, Ishtiaque Ahmed Latif, Peng Zhang, Jun Qian, and Joyce Li.

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Jennifer Roche was responsible for substantive and copy editing, some writing and rewriting, and coordination of design, translation, and printing. Marie Tappin designed and laid out the report, and assisted the editorial team with picture research. Delta Printing was responsible for the production of the report.

Monique Paradis, Jean-Pierre Doyon, and Denis Hébert were responsible for translating the English version of the report into French.

Last, but not least, we wish to thank all the students who were willing to share their experiences and views with us, as well as the school principals, teachers, school jurisdictions, and parents for making this survey happen.

1

Introduction

Preamble

Knowledge about young people's health behaviours and health outcomes – and the factors that influence them – is essential to the development of effective health education and school health promotion policy, programs, and practice. In accordance with the perspective of the World Health Organization (WHO), health must be acknowledged as a resource for everyday living and not just as the absence of disease. Further, young people's health should be considered in its broadest sense, encompassing physical, social, and emotional well-being.¹ Research needs to investigate positive and protective factors that lead to good or improved health in young people as well as risk factors that may precipitate their future ill-health and disease. The behaviours in which young people engage may support or impinge upon their health in the short or long term; for this reason, we need to measure a wide range of youth behaviours. Positive or health-promoting behaviours need to be studied, as well as negative or health-damaging behaviours (including health risk behaviours). Certain behaviours may be initiated in the adolescent years, such as dating patterns and alcohol use, whereas other behaviours, for example eating habits, may have been established in earlier childhood.

Taking a social research perspective, as opposed to one that is purely biomedical, means studying the psychosocial and environmental influences on child and adolescent health and health behaviours. Thus, the influences of home and school settings, peer relationships, and the socio-economic environment need to be explored if we are to fully understand the health and health behaviour patterns of school-aged young people.



A number of essential principles need to be addressed when studying the health of young people. First, we need to assume a life-course perspective that portrays adolescence as a stage between childhood and adulthood, not as a separate population. Second, we need to examine relationships between various dimensions of social inequality (i.e., gender, ethnicity, disability, sexual orientation) and youth behavioural and psychosocial risk/resiliency factors; and between these same dimensions of inequality and youth physical and mental health outcomes. Third, the contexts in which young people operate (such as the home and school settings, peer environments, and socio-economic conditions) need to be examined to identify possible loci for interventions or remediation.

Canada's school systems

School structure. In Canada, education falls under provincial and territorial jurisdiction, with each province and territory establishing its own curriculum, general structure, and organization. The most common Canadian education model is from kindergarten to Grade 12, separated into elementary and secondary schools, although middle schools are found in many jurisdictions.

Number of teachers. In elementary school, students have primarily one teacher for all of their school subjects for the entire year. In middle school, there is often a mixture of primary teacher and specialist teachers for certain subjects (e.g., French). In secondary school, students have a separate teacher for each subject according to the specialization of the teacher. As a result, secondary students have several teachers over a given year and may provide an influence on some of the HBSC findings.

Support services. In terms of support services for students, elementary schools often share counselling services with other nearby elementary schools. Some limited learning support is generally available in each school, although many of these services are provided by itinerant staff who are responsible for multiple schools. Secondary schools are more likely to have counselling services and expanded learning support services within the school, although specialized itinerant staff may also be used. The level of such support is often related to school or district size.

Student career development. Most jurisdictions provide academic and less applied programs in foundational courses (most commonly in language arts, mathematics, and science). In an attempt to introduce students to the world of work, emphasis on career exploration and workplace experiences is growing, especially at the secondary school level.

How do Canadian students compare? Although curricular commonalities exist across the provinces and territories, there is no single national curriculum in Canada. While national and international assessments have identified regional differences in Canadian student achievement, overall, our students continue to do well on international assessments, such as the Trends in Mathematics and Science Study (TIMSS) and the Programme for International Student Assessment (PISA). In the most recent administration of PISA, which is based on a test written by 15-year-olds in 41 countries, Canadian students earned high rankings: they averaged second in reading, third in mathematics, and fifth in science.²

Gender differences in achievement. National and international studies have consistently found that in upper-elementary and secondary schools, girls outperform boys in measures of reading and writing, while boys tend to outperform girls in science. Gender differences in mathematics are less pronounced.^{3,4}

The HBSC study in Canada

The Health Behaviour in School-aged Children study is a continuing, cross-national research project conducted in collaboration with the WHO Regional Office for Europe. The study aims to contribute to new insight and increased understanding with regards to the health, well-being, and health behaviours of young people (aged 11 to 15 years) and their social contexts, especially the school environment.

The HBSC study was initiated in 1982 by researchers from three countries; shortly thereafter, it was adopted as a WHO collaborative study. There are now 41 research teams from WHO Europe countries and regions and from North America (**Table 1.1**). The HBSC researchers come from a variety of disciplines, and theoretical perspectives. For example, the Canadian team based at Queen's University includes researchers from the areas of community health, physical education, epidemiology, education, and psychology. The federal government has supported the Canadian HBSC study since 1988.

1.1 HBSC participating countries

Austria	Greenland	Portugal
Belgium (French-speaking)	Hungary	Romania
Belgium (Flemish-speaking)	Iceland	Russia
Bulgaria	Ireland, Republic of	Scotland
Canada	Israel	Slovak Republic
Croatia	Italy	Slovenia
Czech Republic	Latvia	Spain
Denmark	Lithuania	Sweden
England	Luxembourg	Switzerland
Estonia	TFYR Macedonia	Turkey
Finland	Malta	Ukraine
France	Netherlands	United States
Germany	Norway	Wales
Greece	Poland	

The conceptual framework for the Canadian HBSC survey uses the three principles described in the preamble at the beginning of this chapter. First, in the developmental perspective, the study's age groups of 11, 13, and 15 years (i.e., Canadian students in Grades 6 through 10) are selected to examine significant changes that occur in health behaviours and attitudes from the onset of puberty to the middle of adolescence. Second, the social perspective recognizes the importance of gender, disability, cultural diversity, and socio-economic elements in explaining the data. Third, the contextual perspective incorporates health determinants of home, school, and peers that may shape or influence a variety of health behaviours and outcomes for young people (e.g., smoking, alcohol use, physical activity, psychosocial states such as happiness and loneliness, physical problems such as headaches, and relationships with others).

The purposes of the 2006 HBSC study in Canada are as follows:

- Collect data on school-aged young people to: a) gain insights into their health attitudes, behaviours, and lifestyles; b) record changes and document trends; c) examine relationships between contextual factors and health behaviours; and d) draw international comparisons.
- Contribute to: a) theoretical, conceptual, and methodological development; b) the knowledge base in the area of research on health behaviour and the social contexts of health in school-aged youths; c) the establishment of international expertise in the field; and d) a national information system on the health and lifestyles of young people in Canada.
- Disseminate findings to relevant audiences, including researchers, health and education policy-makers, health promotion practitioners, teachers, parents, and young people.
- Promote and strengthen national and international research on health behaviour and the social context of health in youth and the network of experts in this field.



The contribution of the HBSC study to the health of Canadian young people

The HBSC study contributes to the health of Canada's young people in a number of ways:

- HBSC is a long-standing, efficient investment by the federal government in Canadian public health information (a total of five surveys have been conducted in Canada between 1989-90 and 2005-06).
- HBSC provides health outcome and health behaviour information concerning early adolescence (the ages 11 to 15 years) when youth health risk and protective behaviours first appear. It relies on each participating young person's own perceptions of health, which is important to their feelings of involvement at this age.
- HBSC is the only national-level health promotion database for this age group. It is based on a broad determinants-of-health model with both individual data and school-level data such as current policies and programs.
- HBSC reflects health in schools, a prime setting for health monitoring and interventions.
- HBSC in Canada is linked to comparable databases in Europe and the United States.

The Social Program Evaluation Group at Queen's University in Kingston, Ontario, has conducted the HBSC study in Canada every four years since 1989-90. **Table 1.2** provides the titles of the published reports for the surveys in which Canada participated.

1.2 Canadian HBSC publications

Survey cycle	Title
1989-90	<i>The Health of Canada's Youth</i> by King and Coles, 1992 ⁵
1993-94	<i>The Health of Youth: A Cross National Survey</i> , an international publication by King, Wold, Smith, and Harel, 1996 ⁶
1997-98	<i>Trends in the Health of Canadian Youth</i> by King, Boyce, and King, 1999 ⁷ and <i>Health and Health Behaviour among Young People</i> by Currie, Hurrelmann, Settertobulte, Smith, and Todd, eds., 2000 ⁸
2001-02	<i>Young People in Canada: Their Health and Well-being</i> by W. Boyce, ed., 2004 ⁹

Methodology of the study

The international questionnaire is developed in a collaborative fashion by HBSC researchers and then ratified at biannual research meetings. A strong effort has been made to retain a core of items on each survey to facilitate the monitoring of trends over time.

Questions specific to Canada are added to this set of international questions in consultation with experts from the Public Health Agency of Canada. The research team in Canada collects the data under a set of guidelines developed by the international network. Data collection for the study is funded by the Public Health Agency of Canada and the survey received approval from the General Research Ethics Board at Queen's University. There are two versions of the Canadian questionnaire, one for Grades 6, 7, and 8 and the other for Grades 9 and 10. The Canadian questionnaire is available in English and French. A questionnaire about the school itself has been included since 2001-02.

In 2005-06, the HBSC survey was administered in approximately 200 schools from all provinces and territories. **Table 1.3** provides details of the national sample of 9,670 students.

1.3 Breakdown of the national sample, by grade and gender

	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Boys	785 (46.0%)	874 (49.3%)	905 (47.7%)	1092 (47.1%)	928 (47.0%)
Girls	923 (54.0%)	898 (50.7%)	992 (52.3%)	1228 (52.9%)	1045 (53.0%)
Total	1708	1772	1897	2320	1973

For further methodological details, please see the Appendix.



Outline of the report

This report presents key findings from the 2006 cycle of the HBSC study. It begins with an overview of important contexts for Canadian youth – home, school, peers, and socio-economic conditions. In each of these contexts, specific indicators are identified (see Composite scale measures in the Appendix) which are then examined in later chapters in association with health behaviours and outcomes. The authors identify important patterns between context and health; however, in this public report, statistical evidence is not presented.

Next, the report focuses on health behaviours that can be taken up by young people. Numerous behaviours are examined, such as physical activity and leisure, eating and dieting, and personal hygiene. Other behaviours that cause concern, but which may be common among students, are also reported – such as smoking, substance use, and sexual activity. Social behaviours such as bullying and fighting are also examined. Many of these behaviours may be associated with the four contexts discussed earlier and these relationships with home, school, peers, and socio-economic indicators are shown.

Finally, the report focuses on common health outcomes – sometimes the consequences of behaviour – that pertain to young people. Injuries, physical symptoms of ill health, chronic health conditions, and various aspects of emotional health and well-being are described. Again, these youth health outcomes are examined in relation to the indicators of home, school, peers, and socio-economic contexts.

References

- 1 Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19 June to 22 July 1946.
- 2 Human Resources and Skills Development Canada, Council of Ministers of Education (Canada), and Statistics Canada (2004). *Measuring Up - Canadian Results of the OECD PISA Study: The Performance of Canada's Youth in Mathematics, Reading, Science and Problem Solving*, 2003, Vol. 2. Catalogue number 81-590-XIE2004001.
- 3 Hanna, G. (2003). Reaching gender equity in mathematics education. *The Educational Forum*, 67:204-214.
- 4 Robitaille, D.F., and A.R. Taylor (2000). *TIMSS-Canada Report, Volume 5: New Findings for a New Century*. Vancouver, BC: University of British Columbia.
- 5 King, A.J.C., and B.J. Coles (1992). *The Health of Canada's Youth: Views and Behaviours of 11-, 13-, and 15-year-olds from 11 Countries*. Ottawa: Health and Welfare Canada.
- 6 King, A.J.C., B. Wold, C. Tudor-Smith, and Y. Harel (1996). *The Health of Youth: A Cross-national Survey*. WHO Regional Publication, European Series No. 69.
- 7 King, A.J.C., W.F. Boyce, and M.A. King (1999). *Trends in the Health of Canadian Youth. / La santé des jeunes: Tendances au Canada*. Ottawa, Ontario: Health Canada.
- 8 Currie, C., K. Hurrelman, W. Settertobulte, R. Smith, and J. Todd (2000). *Health and Health Behaviour among Young People*. Denmark, Copenhagen: World Health Organization Regional Office for Europe.
- 9 Boyce, William F. (2004). *Young People in Canada: Their Health and Well-being*. Ottawa: Health Canada.

2

Examining the Contexts for Young People's Health

In this chapter, we focus on the important contexts, or settings and conditions, for young people's health. Students spend equally important time in the home, in school, and with friends. In addition, their socio-economic status and social conditions are believed to have an increasing effect on their health. These four contexts are examined separately here and then are examined in relationship to health behaviours and health outcomes in future chapters.



HOME

by Frank Elgar

The importance of parents and home life

The family is the pre-eminent social system in a young person's development. Although adolescence is typically a time when young people begin to challenge parental controls and to be influenced by their peers, the family can be an integral source of support through the school years. It is useful to examine the home setting, so that its relationship to health behaviours in school-aged Canadians may be better understood.

Research into family influences on young people shows that having parents who set firm limits and are empathetic and nurturing contributes to self-esteem, social development, and good health. Stability in the home and the emotional availability of parents are especially important in protecting these students from involvement with early initiation into alcohol and drug use, risk-taking behaviour, bullying, and the peer groups associated with these activities.

How is the home setting measured by the HBSC study?

In the 2006 cycle of the HBSC, we asked students about their family structure, general happiness at home, how well they could communicate with their parents, parental interest and encouragement regarding school, to what extent they felt understood and trusted by their parents, parental opinion and expectations, arguments with parents, and thoughts of leaving home.

What are we reporting on in this section?

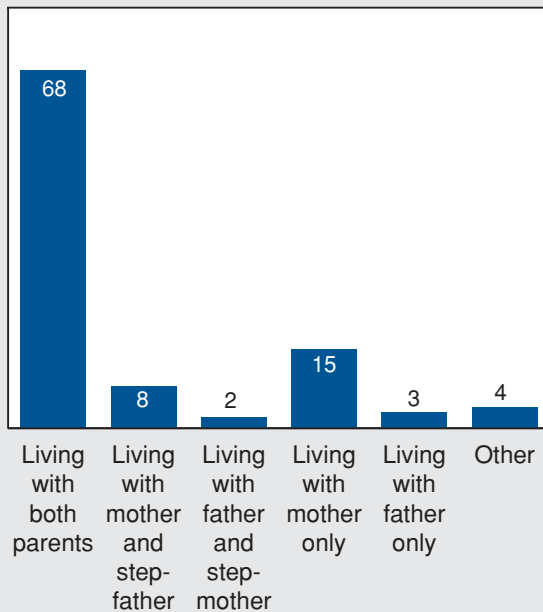
We report on all these aspects of young people's relationships with their parents, concluding with a description of two measures – living with both parents and a parent trust and communication scale – to be applied in our discussions of behaviours and outcomes in later chapters.



Data on parental interest and encouragement regarding school are presented in relation to the school setting discussed later in this chapter.

Living arrangements of Canadian students

2.1 Family structure (%)

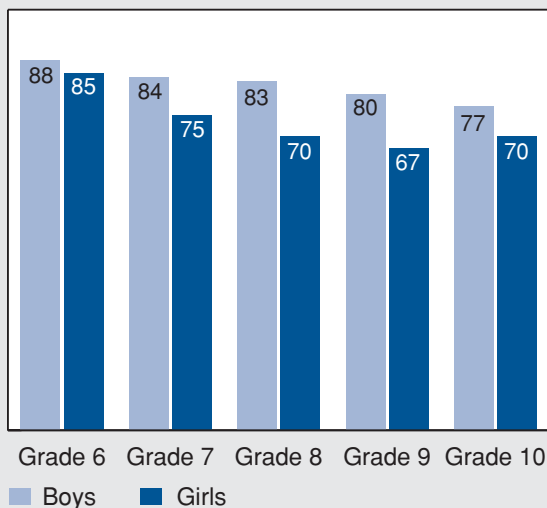


Approximately 2 out of every 3 students in Canada live with both parents (**Figure 2.1**). This finding underscores the make-up of Canadian households: there are fewer nuclear families and greater numbers of blended and single-parent families.

It is important to note that whether or not students live with one or both parents is not, in itself, a risk factor for poor health. Not living with both parents is, however, often associated with parental separation or divorce and sometimes with joint custody shared by parents who live in separate homes. Such disruption to the family unit does tend to be associated with poorer health outcomes.

Reports of happiness at home

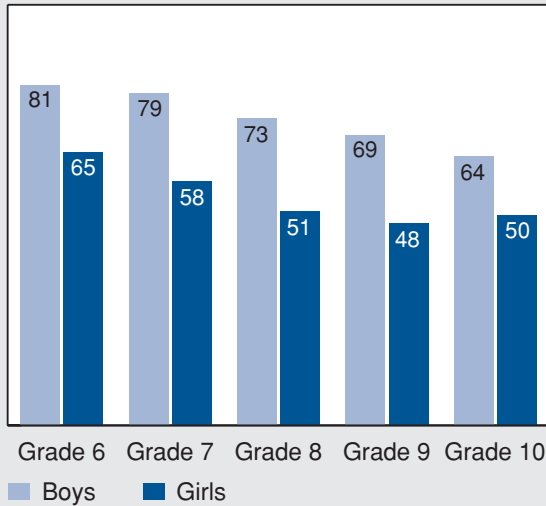
2.2 Students who report having a happy home life, by grade and gender (%)



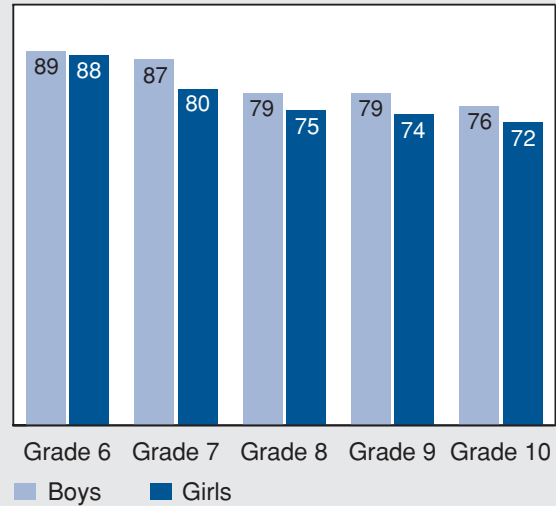
Most students report that they have a happy home life (**Figure 2.2**). Reports of happiness at home are less common in the higher grades and this trend appears to be more pronounced in girls than in boys. Reports of decreased happiness at home at older ages, however, are normal and might result from increased needs for autonomy and independence from parents in adolescence. Despite this pattern, as many as 70 to 77% of students in Grade 10 report having a happy home life.

Parental communication, understanding, and trust

2.3 Father is easy or very easy to talk to about things that are really bothersome, by grade and gender (%)



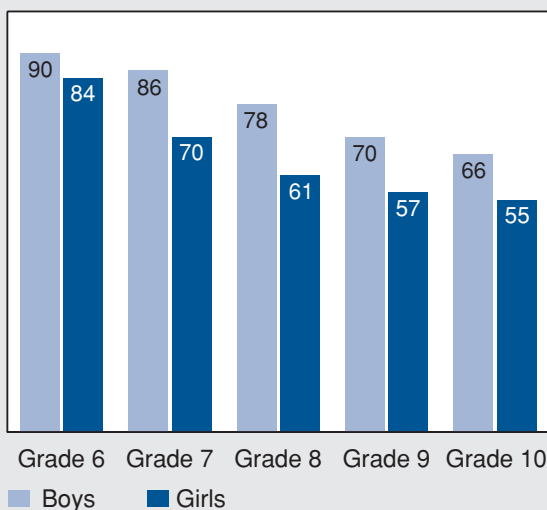
2.4 Mother is easy or very easy to talk to about things that are really bothersome, by grade and gender (%)



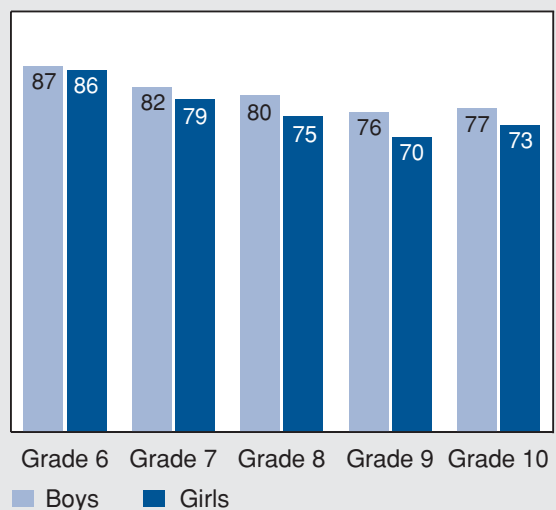
When asked how easy it is to talk to their parents, a higher proportion of students indicate that it is easier to confide in their mothers than their fathers (**Figures 2.3** and **2.4**).

Overall, however, as students move from Grade 6 to Grade 10, fewer of them report finding it easy or very easy to talk to either parent. Significantly fewer girls than boys report finding it easy to talk to their fathers.

2.5 Students who report being understood by their parents, by grade and gender (%)



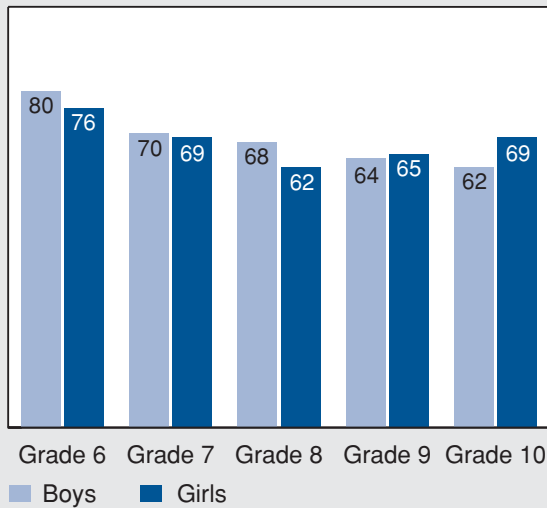
2.6 Students who report being trusted by their parents, by grade and gender (%)



Gender differences are also found in young people's perceptions of parental understanding and trust. As shown in **Figures 2.5** and **2.6**, more boys than girls report being understood by their parents and trusted by their parents.

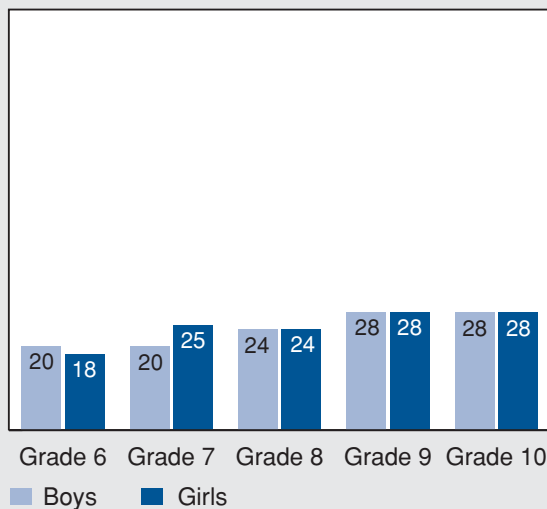
Parental opinion and expectations

2.7 Students who report that what their parents think of them is important, by grade and gender (%)

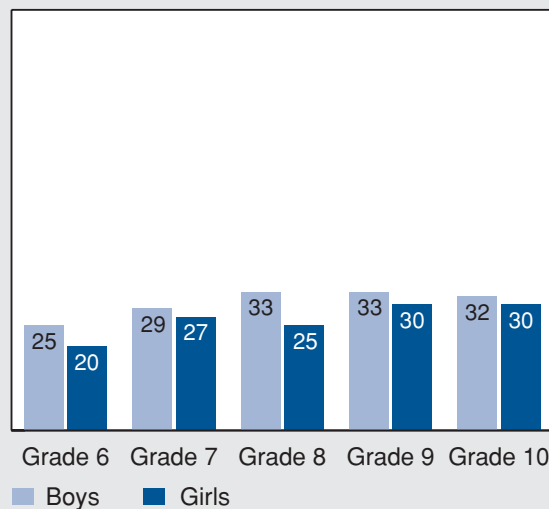


Despite decreasing reports of parental trust in the higher grades, the majority of students in all grades value what their parents think of them and express a desire for parental approval. Students in Grade 6 are the most concerned about what their parents think of them (**Figure 2.7**).

2.8 Students who think their parents expect too much of them, by grade and gender (%)



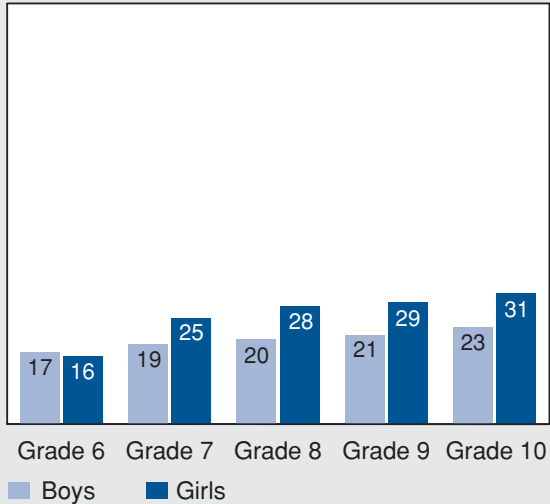
2.9 Students who think their parents expect too much of them at school, by grade and gender (%)



While both genders' reports of parental expectations are the same (**Figure 2.8**), more boys than girls feel that their parents expect too much of them specifically regarding school (**Figure 2.9**). As high as 33% of students report that their parents' expectations regarding school are too high.

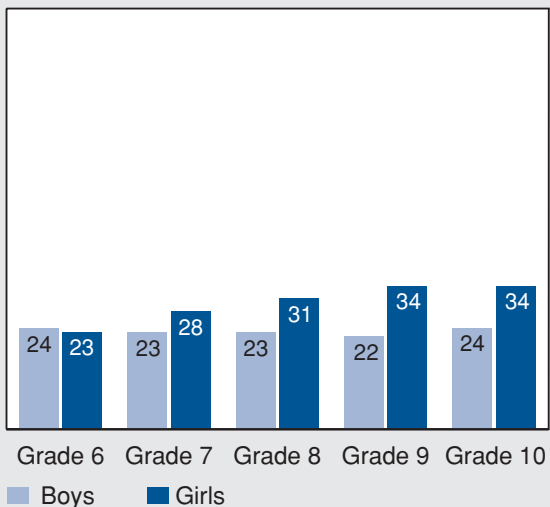
Conflict with parents

2.10 Students who report having a lot of arguments with their parents, by grade and gender (%)



The downward trend from Grade 6 to 10 in the percentage of students who value parental approval (see Figure 2.7) coincides with increasing trends in the percentage of students who have a lot of arguments with their parents (**Figure 2.10**) and with the percentage of students who want to leave home at times (**Figure 2.11**).

2.11 Students who report wanting to leave home at times, by grade and gender (%)



The sources of conflict between young people and their parents might be related to friends, money issues, watching television, telephone use, going out, time at homework, household chores, fighting with siblings, and issues related to increased independence.



The home setting

Summary

Approximately 2 in every 3 students in Canada live with both parents. Most students report having a happy home life. Older youths, especially girls, have more difficulty than younger ones in talking to their parents. Feeling understood and trusted by parents is less common in higher grades. Arguments with parents and wanting to leave home at times are more common in girls than in boys.

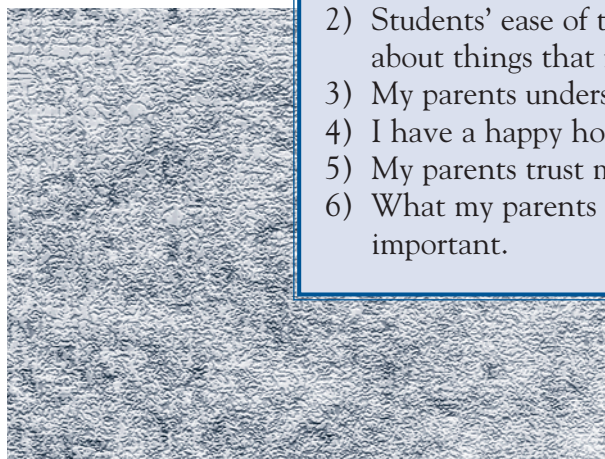
Measures used in this report

The living with both parents measure reflects students' responses to the question about the people they live with. Students indicating that both their father and their mother live with them were classified as "yes" in relation to the measure; all students with other living arrangements were classified as "no."

A parent trust and communication scale was developed based on six survey items. Only those students with complete data for the six items were included.

Six survey items:

- 1) Students' ease of talking to mother about things that really bother them
- 2) Students' ease of talking to father about things that really bother them
- 3) My parents understand me
- 4) I have a happy home life
- 5) My parents trust me
- 6) What my parents think of me is important.



SCHOOL

by Don Klinger and Steven McLagan

The importance of the school environment

Young people spend a substantial portion of their lives at school. Research has shown that their experiences in school settings have a significant influence (both positive and negative) on their global development and health, including health behaviours.¹

Schools can offer positive experiences with teachers and peers, helping students to develop strong emotional bonds and self-confidence. Students who feel connected to the school or believe their school is a positive place are less likely to engage in health-compromising activities.^{2,3} Young people need to feel accepted by their peers and rejection can deeply affect an adolescent's confidence and sense of self.^{4,5}

Hence, the activities that students engage in are closely aligned with the activities of the peers with whom they connect.

In addition to the direct teaching of knowledge and skills through academic subjects, schools can provide opportunities for young people to develop social connections having a lasting impact on their lives.

Unfortunately, for some young people, school is a threatening and uninviting place. As we will see reflected in this report, these students are prone to becoming involved with peers sharing similar negative attitudes. Furthermore, health-risk behaviours are more common among these students, and their future educational and societal attainments are much lower.^{6,7}

How is the school setting measured by the HBSC study?

The study asked respondents about their most recent marks, teachers' perceptions of their school performance, student participation and perceived fairness at the school, feelings of satisfaction, safety, and belonging, acceptance by classmates, teachers' attitudes towards them as people, feelings of pressure, and availability of parental help and encouragement regarding school.

A large part of the school experience is affected by students' perceptions of their classrooms and teachers. Previous research shows that teachers who create a supportive classroom environment are more likely to have students who are more satisfied with school.⁸

What are we reporting on in this section?

This section discusses data related to the school experience that reflect the academic and social development of school-aged young people and that may have implications for their emotional and physical health. These are: student achievement, feelings of satisfaction, belonging, and safety at school, aspects of relationships with teachers, peers, and parents that impact on the school experience, and feelings of pressure.

Student achievement

2.12 Students who say that teachers think their school work is good or very good, by grade and gender (%)

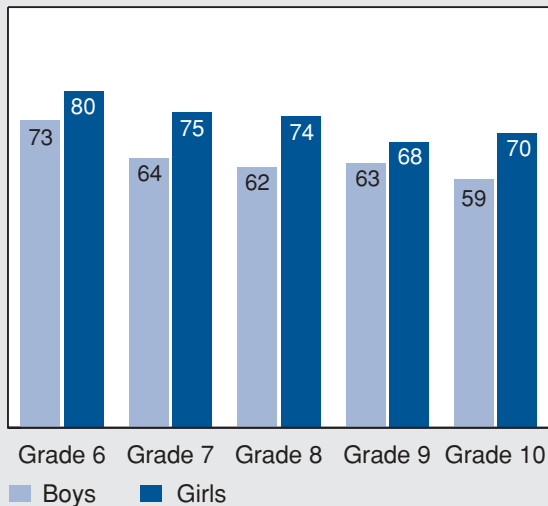
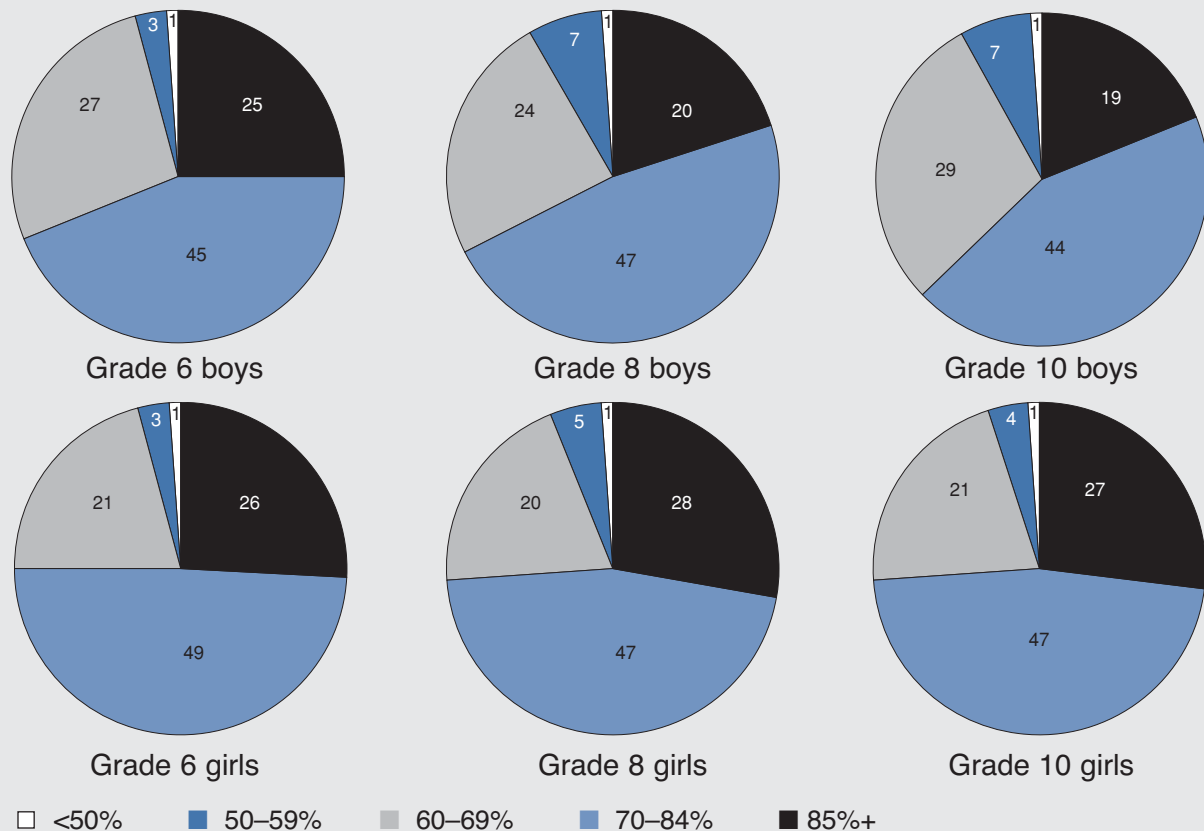


Figure 2.12 illustrates the proportion of students who believe that their teachers think their school work is good or very good as compared to the work of their classmates. Differences are visible across age groups, with more students in earlier grades placing themselves in one of these two categories. These numbers are lower than those from the 1994, 1998, and 2002 cycles of the HBSC (not shown), but continue to indicate that Canadian students have positive views about teachers' perceptions of their school work.

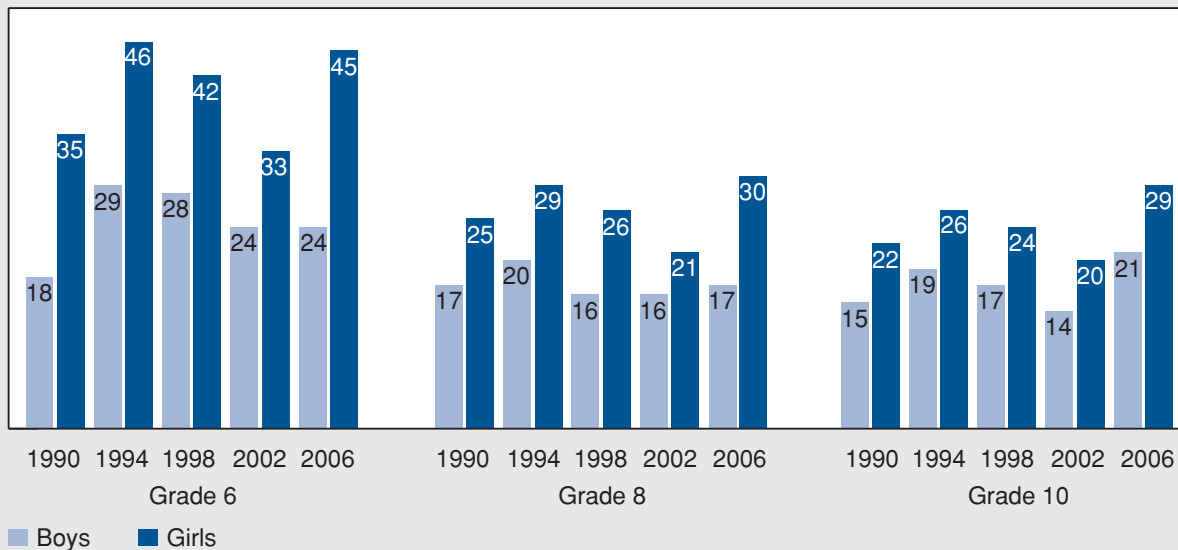
2.13 Academic achievement, by grade and gender (%)



The students provided another indication of their achievement by reporting the average mark on their last report card (**Figure 2.13**). The proportion of students reporting higher marks declines slightly in the higher grades. Girls report higher levels of achievement at all grade levels, a gender pattern consistent with students' perceptions of teachers' opinions (see Figure 2.12).

Feelings of satisfaction, belonging, and safety at school

2.14 Students who like school a lot, by grade, gender, and year or survey (%)

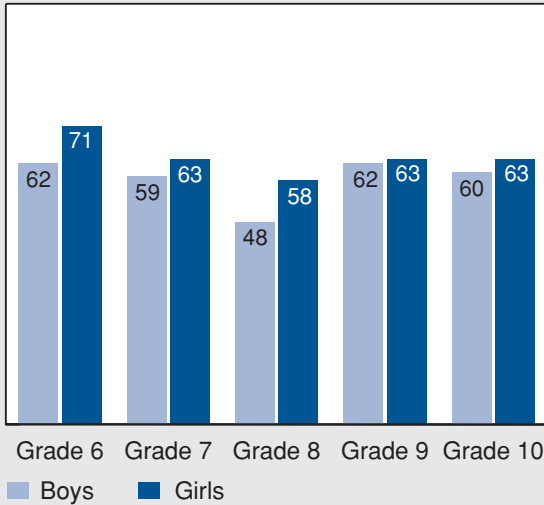


The proportion of students who report they like school a lot is presented in **Figure 2.14**, which shows a steady decline between the 1994 and 2002 HBSC cycles. Notably, in the 2006 cycle, an increased proportion of girls in all three grades report liking school a lot, along with Grade 10 boys. These results are somewhat surprising given the decline in achievement the students report relative to previous survey years (not shown). As in previous HBSC cycles, girls like school more than boys at all grade levels.

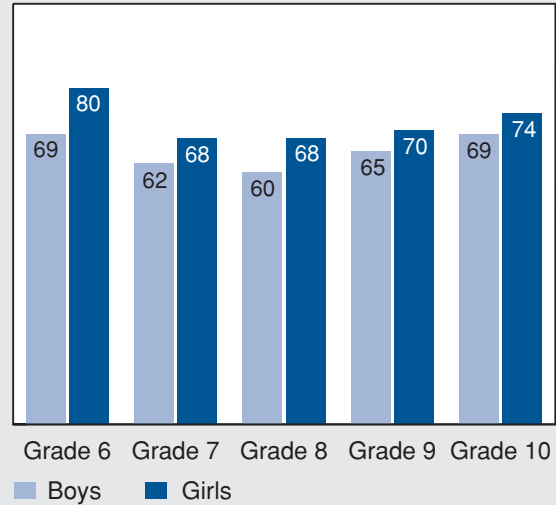
Grade 8 and 10 students report similar levels of liking school, but both of these are lower than the results for Grade 6 students. This difference coincides with the shift experienced by many students from having a single teacher to multiple teachers (see Chapter 1); however, because the timing of the shift is not uniform across jurisdictions, it is not possible to determine whether the decrease in liking school is associated with the changing school structure or with other factors directly related to the students themselves.



2.15 Students who agree and strongly agree with the statement “I feel I belong at this school,” by grade and gender (%)



2.16 Students who agree and strongly agree with the statement “I feel safe at this school,” by grade and gender (%)



Figures 2.15 and **2.16** indicate the majority of students feel they belong and feel safe at their school. The sense of belonging drops slightly after Grade 6, reaching its lowest point in Grade 8 before rising slightly again.

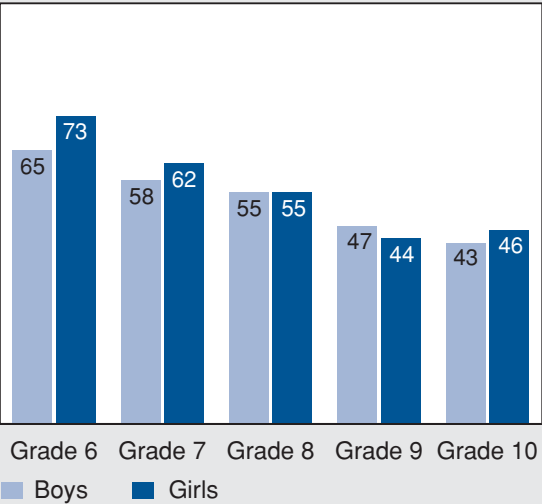
As with the measures of achievement (self-perceptions and marks), girls demonstrate higher scores on measures of belonging, more frequently reporting a sense of belonging than boys. Students' feelings of safety follow a similar pattern.

Underlying these findings are 10 to 20% of students who do not share a sense of school belonging and 7 to 16% of students who do not feel safe at school (not shown). Boys are more likely to express these negative views, especially in Grades 7, 8, and 9.

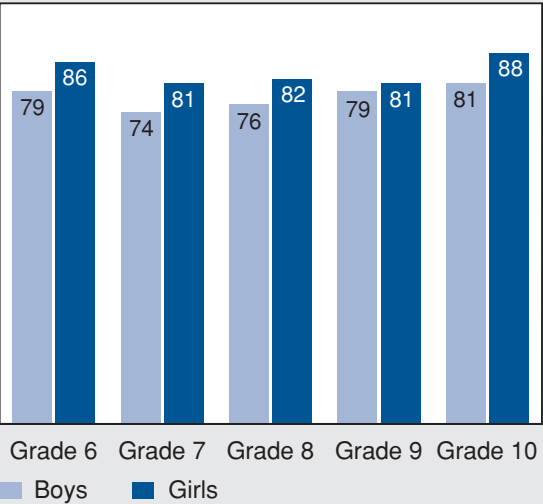


Aspects of teacher, peer, and parental relationships

2.17 Students who think their teachers are interested in them as persons, by grade and gender (%)



2.18 Students who think most of their teachers are friendly, by grade and gender (%)



As students progress through their schooling, they are less likely to believe teachers are interested in them as persons (**Figure 2.17**). The results are similar for both boys and girls. Regardless, students largely report that their teachers are friendly, with girls being more positive (**Figure 2.18**).

2.19 Students who feel that other students accept them as they are, by grade and gender (%)

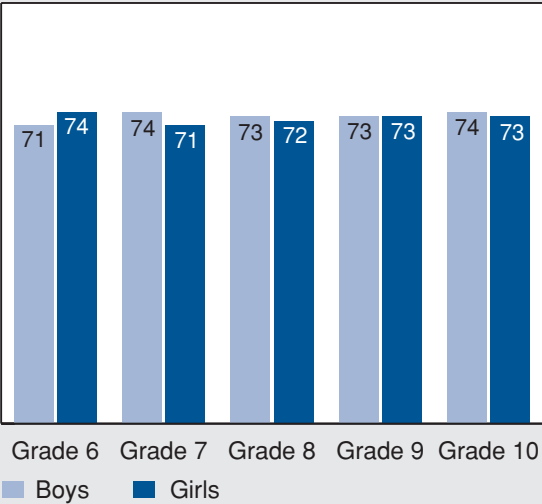
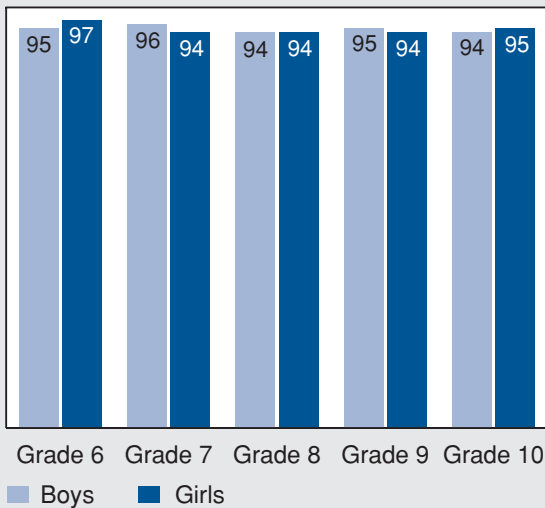


Figure 2.19 shows the percentage of students who agree or strongly agree that other students accept them as they are. The majority of respondents (just below 75%) feel accepted by their peers across grade levels. Nevertheless, a relatively small, but significant number of students do not feel accepted by their peers (not shown).

For data on young people's friendships, please see the section on the peer context later in this chapter.

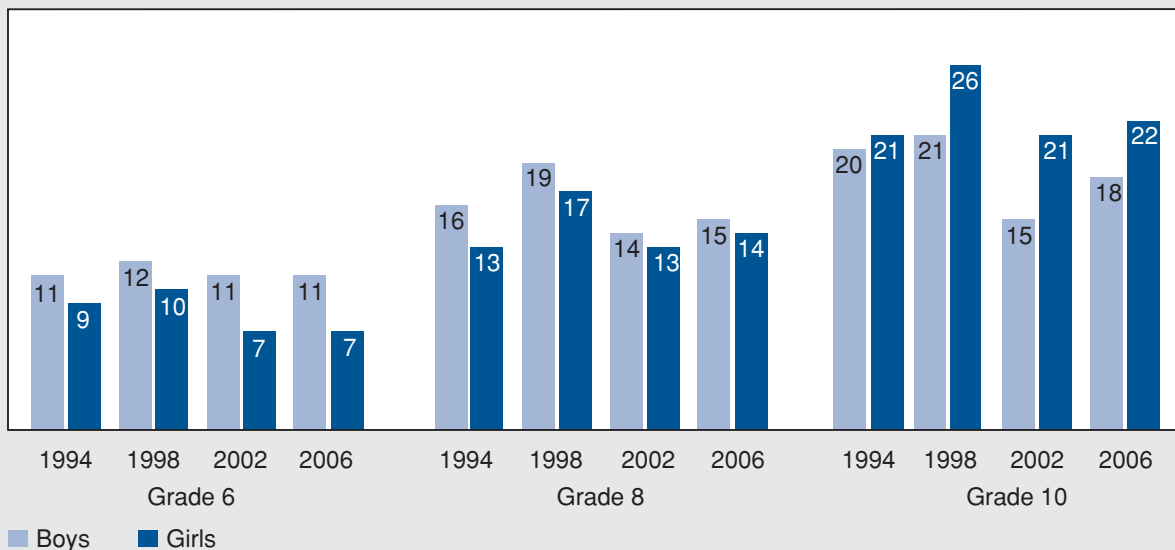
2.20 Students who report that their parents encourage them to do well in school, by grade and gender (%)



According to the 2006 HBSC results, most Canadian students believe their parents are very supportive of their education, with well over 90% of students agreeing or strongly agreeing that their parents encourage them to do well in school (**Figure 2.20**). Previous cycles of the HBSC have found fewer students reporting that they felt their parents encouraged them to do well at school (not shown). The 2006 results suggest parents appreciate the importance of their child's academic success even after he or she has entered high school.

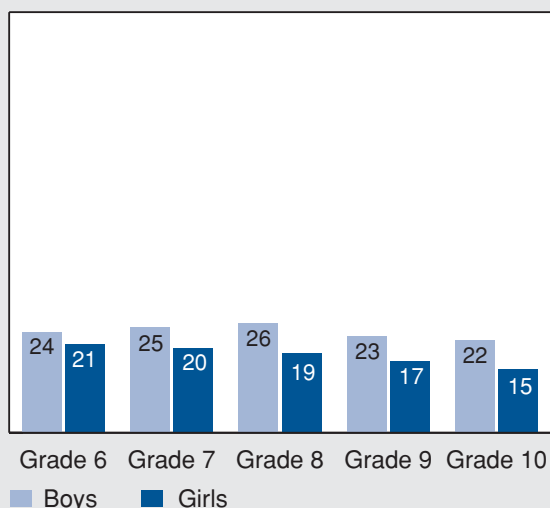
The pressures of school

2.21 Students who feel a lot of pressure because of school work, by grade, gender, and year of survey (%)



A significant proportion of students feel a lot of pressure because of school work (**Figure 2.21**) and, not unexpectedly, students experience increasing pressure in successive grades. There is a shift, however, in the relative pressure felt by boys and girls: in Grades 6 and 8, boys are more likely than girls to feel pressured, whereas in Grade 10, the reverse is true. The data also suggest the amount of pressure felt by students has remained relatively constant across the survey years.

2.22 Students who think their teachers expect too much of them at school, by grade and gender (%)



Between 15 and 26% of students report feeling overly high expectations from teachers, with boys more often reporting this (**Figure 2.22**).

The pressures of school can be a “double-edged sword” for many students, as, typically, students experiencing too much pressure to achieve also report lower levels of achievement (not shown).

The school setting

Summary

Overall, the proportion of students who like school increased in 2006, especially for girls, reversing a decline observed over the three previous cycles of the HBSC study. While the majority of students feel they belong in school, students in Grade 8 report the lowest levels of school belonging (with only 48% of boys and 58% of girls reporting feelings of belonging); boys report lower overall belonging than girls. A majority of students feel safe at school, with girls more commonly reporting feeling safe. Boys are more likely to believe teachers expect too much of them, but girls feel more pressure from school work in later grades. Students report very high levels of parental support. Overall, girls report higher levels of satisfaction with all areas of schooling.

The school environment is an important factor in the relationship between young people's school experiences and their health behaviours. Students who like school, feel they belong in school, or feel the school is a safe place to be are more likely to enjoy going to school. The relationship of students' school experience to their health and social behaviours remains an important area for further examination.⁹



Measures used in this report

The academic achievement measure consists of students' responses to a question about their average mark in the past year. The response options were: Excellent (Mostly A's / above 85% / or level 4); Above average (Mostly A's and B's / between 70 and 84% / or level 3 and 4); Average (Mostly B's and C's / between 60 and 69% / or level 3); Below average (Mostly C's / between 50 and 59% / or level 2); and Poor (Mostly letter grades below C / below 50% / or level 1).

An attitude towards school scale was developed from nine survey items. Only those students with complete data for the nine items were included.

Nine survey items:

- 1) The rules in this school are fair
- 2) Our school is a nice place to be
- 3) I feel I belong at this school
- 4) How do you feel about school at present?
- 5) I am encouraged to express my own views in my class(es)
- 6) Our teachers treat us fairly
- 7) When I need extra help, I can get it
- 8) My teachers are interested in me as a person
- 9) Most of my teachers are friendly.

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- 2 McGee, R., M. Carter, S. Williams, and B. Taylor (2005). Weapon carrying in a sample of high school students in New Zealand. *Australian and New Zealand Journal of Public Health*, 29:13-15.
- 3 Resnick, M.D., L.J. Harris, and R.W. Blum (1993). The impact of caring and connectedness on adolescent health and well-being. *Journal of Paediatrics and Child Health*, 29 (Suppl. 1):S3-S9.
- 4 Baumeister, R.F., and M.R. Leary (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3):497-529.
- 5 Wang, J., L. Wildman, and G. Calhoun (1996). The relationships between parental influence and student achievement in seventh grade mathematics. *School Science and Mathematics*, 96:395-399.
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- 9 Fredericks J.A., P.C. Blumenfeld, and A.H. Paris (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research*, 74:59-109.

PEERS

by Hana Saab

The importance of friends

Relationships with peers of the same or opposite sex are essential to the healthy psychological and social development of children and adolescents and for fostering their self-esteem and sense of well-being. The skills gained through these friendships are also essential to the development of romantic relationships.

Young people generally develop friendships based on interests and activities they have in common. School-aged children in particular share quite a range of behavioural patterns across two main areas. The first is school-related, and includes attitudes towards school, academic achievement, and future aspirations. The second area reflects behaviours such as smoking, drinking, substance use, dating patterns, and sexual activity as well as general anti-social or pro-social behaviours.

How is the peer context measured by the HBSC survey?

The HBSC survey gathered information on the peer context by asking students a series of questions about the number of friendships they had with both genders, about spending time with friends, and about the extent to which they were close to their friends in a way that allowed them to share matters of concern. In addition, three questions from the HBSC survey asked students to estimate the proportion of their friends, from none to all, who liked school, thought getting good marks was important, and got along with their parents.

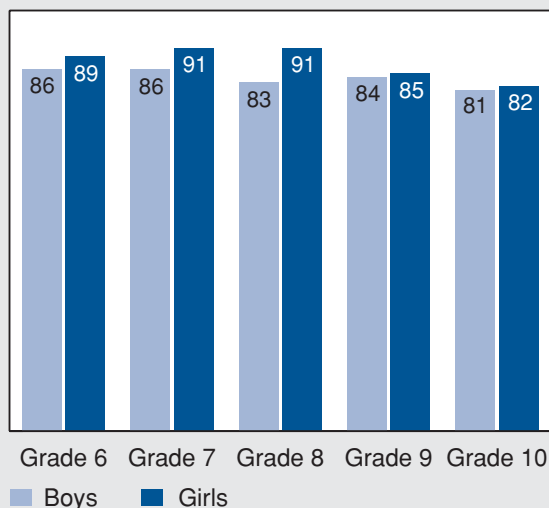
What are we reporting on in this section?

In this section, we indicate the percentage of students with three or more same-sex friendships and trend data on students' ease of communication with these individuals. Similar information on opposite-sex friends is provided. We also report on ease of communication with best friends. Data on time spent with friends after school and in the evenings and the percentage of young people who communicate with their friends by phone, text message, and email are reported. Finally, friends' attitudes towards school and school achievement and their relationships with their parents are discussed, as are the communication with friends and pro-social attitudes of friends scales that are used in subsequent chapters of the report.

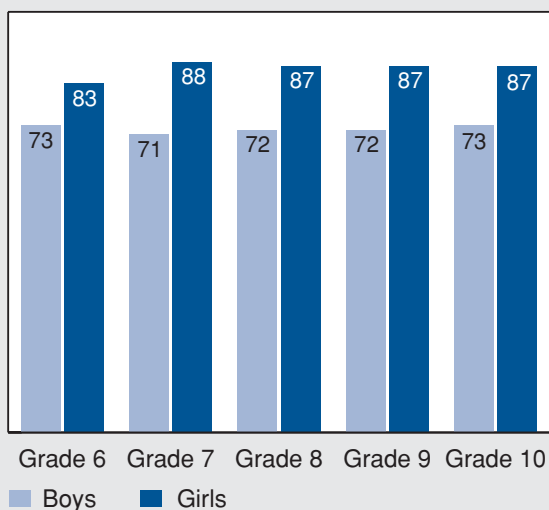
For data on the impact of the larger peer group on the school experience, see Figure 2.19 earlier in this chapter.

Same-sex friends

2.23 Students with three or more close same-sex friends, by grade and gender (%)

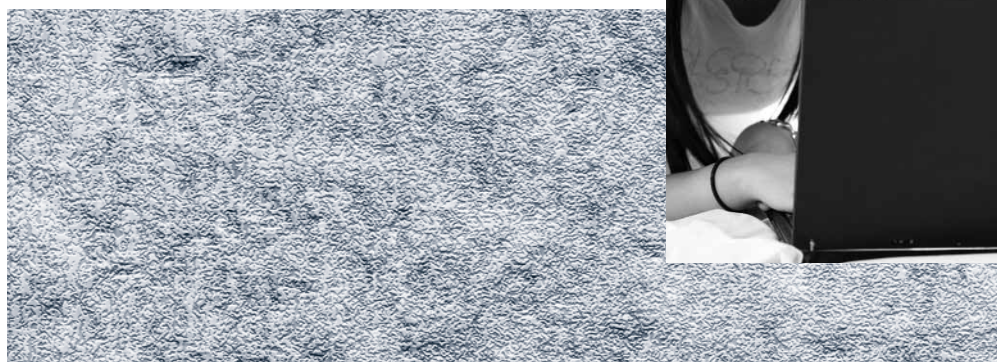


2.24 Students who find it easy or very easy to talk to same-sex friends about things that really bother them, by grade and gender (%)



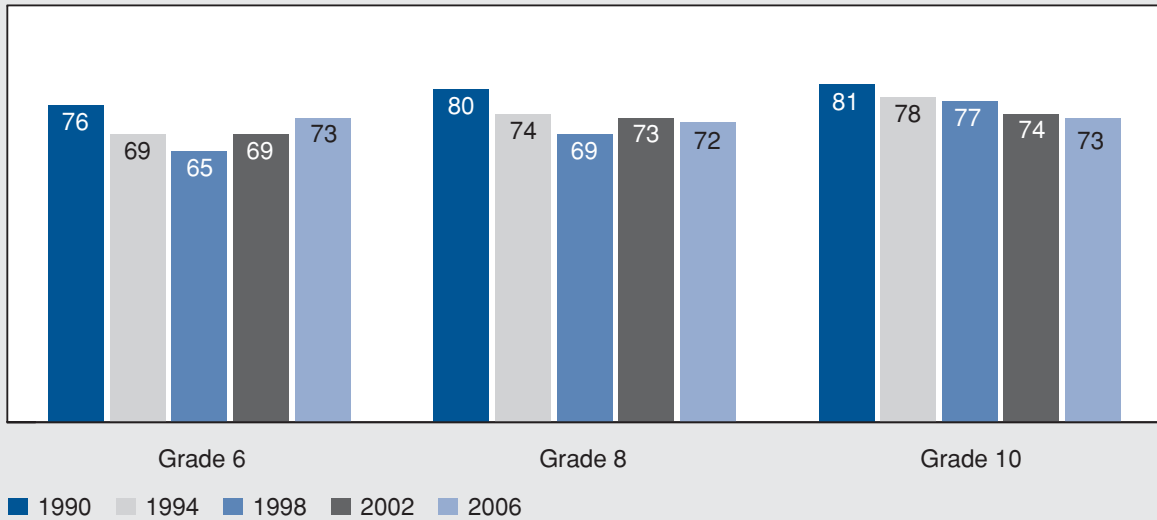
Having friends and being able to share concerns with them is regarded as a safeguard or buffer against negative life experiences. The number of boys who report having three or more same-sex friends remains fairly consistent across grades, with slight decreases in Grades 8 and 10 (**Figure 2.23**). The pattern for girls who report having three or more close same-sex friends is also consistent until Grade 8, after which there is a decrease from 91% in Grade 8 to 82% in Grade 10.

Girls, however, remain more comfortable than boys talking to same-sex friends about things that really bother them, with a slight increase in the proportion of girls confiding in their same-sex friends from 83% in Grade 6 to 87% in Grade 10 (**Figure 2.24**). The pattern for boys remains consistent across the grades, with over 70% of boys reporting that they talk to their same-sex friends about things that really bother them.

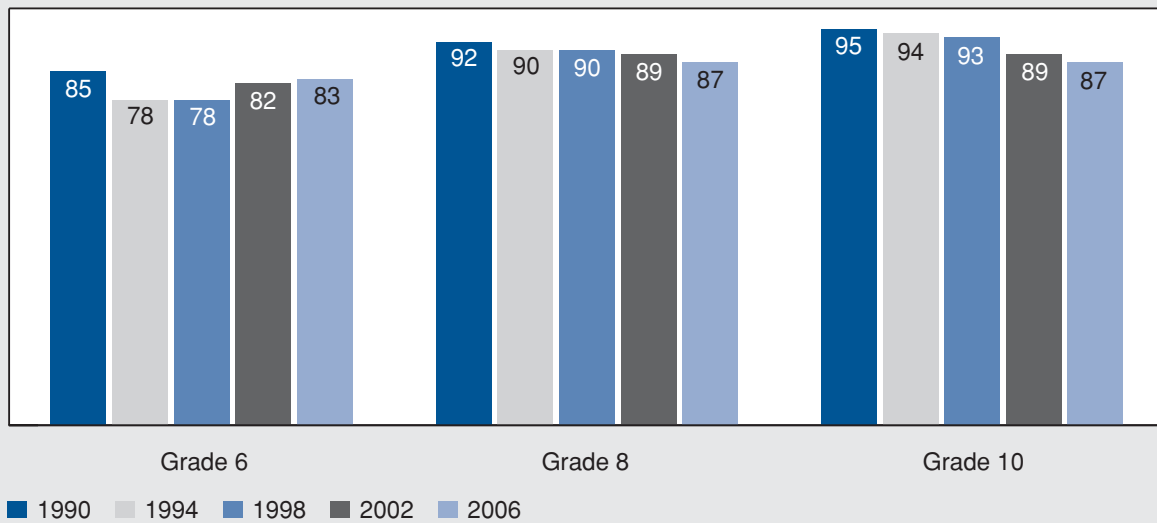


When examined by year of survey (**Figures 2.25 and 2.26**), a decrease is seen after the year 1990 in the proportion of students, both boys and girls and particularly in Grade 10, who find it easy to talk to their same-sex friends about things that really bother them.

2.25 Boys who find it easy or very easy to talk to same-sex friends about things that really bother them, by grade and year of survey (%)

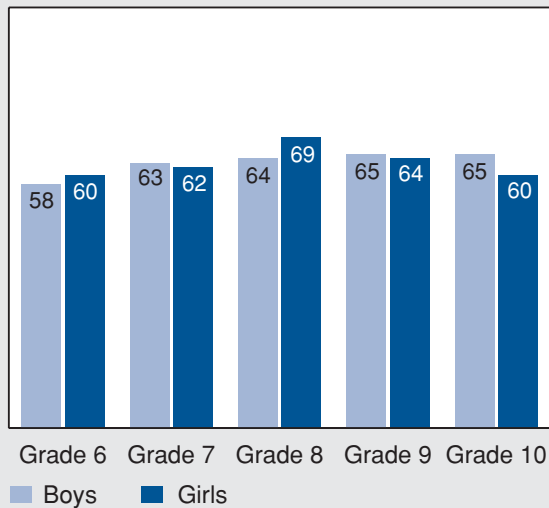


2.26 Girls who find it easy or very easy to talk to same-sex friends about things that really bother them, by grade and year of survey (%)



Opposite-sex friends

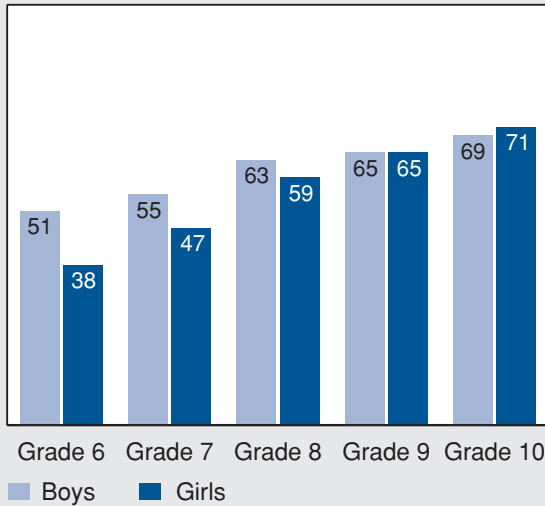
2.27 Students with three or more close opposite-sex friends, by grade and gender (%)



It is interesting that the proportion of students with three or more close opposite-sex friends remains relatively stable after Grade 7 for boys, but peaks at 69% in Grade 8 for girls with a gradual decline to 60% in Grade 10. It is clear that young people, even those in Grade 10, are more comfortable having friends of the same sex (see Figure 2.23) than of the opposite sex (**Figure 2.27**). This could be due to their socialization which may characterize relationships with the opposite sex as being associated with physical attraction and romantic involvement rather than friendship.

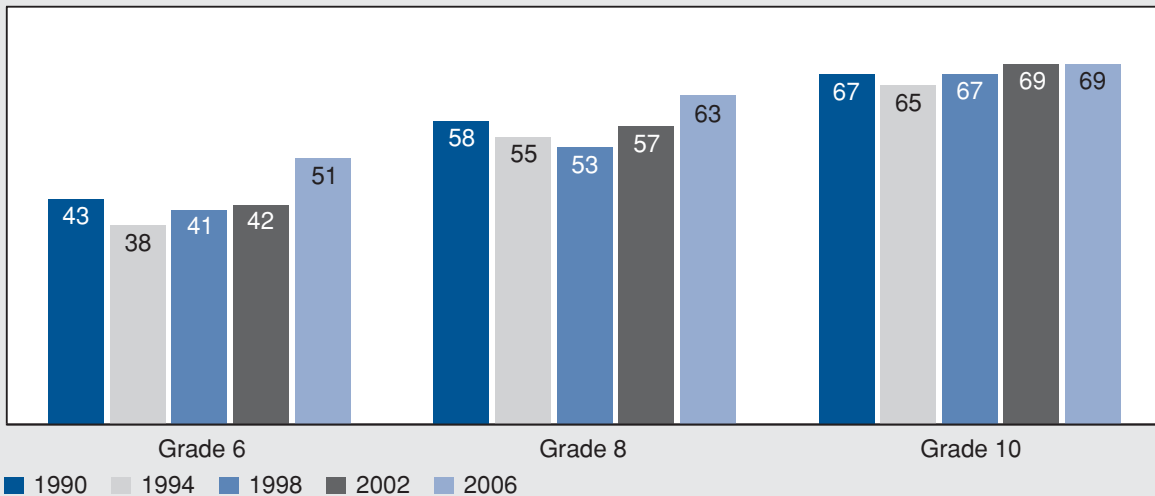


2.28 Students who find it easy or very easy to talk to opposite-sex friends about things that really bother them, by grade and gender (%)

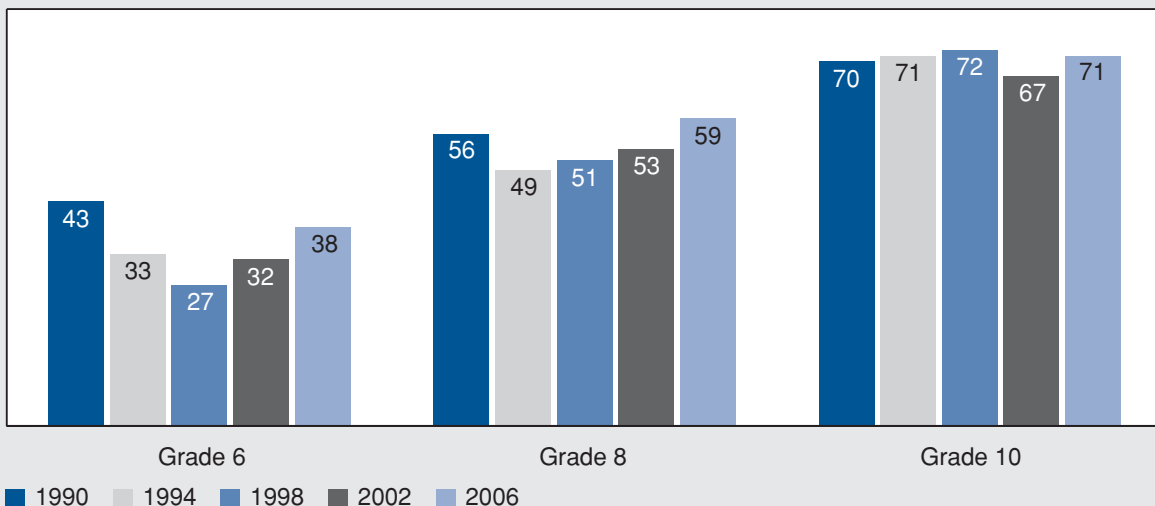


On the other hand, young people generally become more comfortable talking to their opposite-sex friends in Grade 10 (**Figure 2.28**), when around 70% of girls and boys report talking about things that really bother them to friends of the opposite sex. This pattern has remained fairly consistent over the five survey years (**Figures 2.29** and **2.30**).

2.29 Boys who find it easy or very easy to talk to opposite-sex friends about things that really bother them, by grade and year of survey (%)

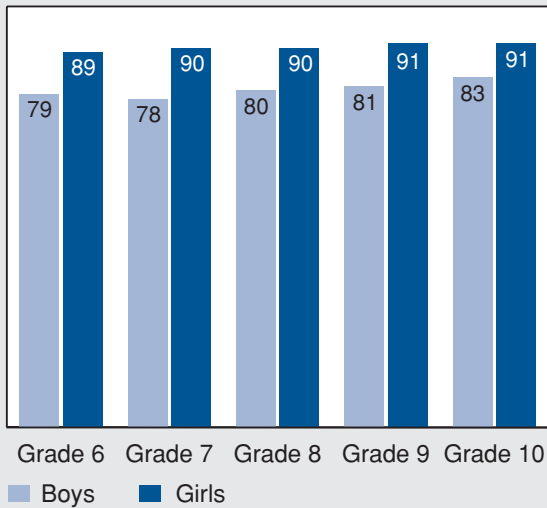


2.30 Girls who find it easy or very easy to talk to opposite-sex friends about things that really bother them, by grade and year of survey (%)



Best friends

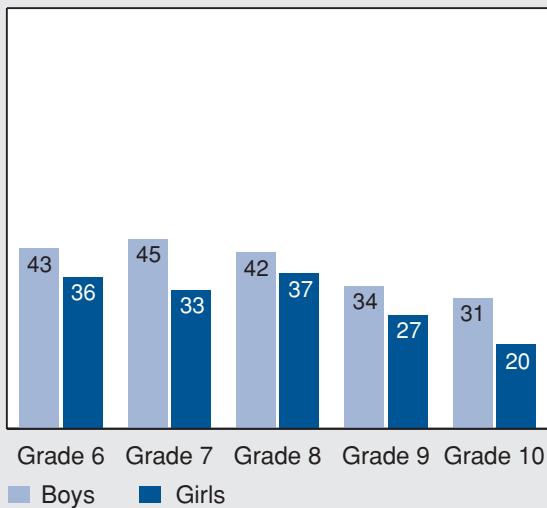
2.31 Students who find it easy or very easy to talk to best friend about things that really bother them, by grade and gender (%)



Confiding in one's best friend regarding things that are bothersome is very common for school-aged young people, particularly for girls across the five grades (**Figure 2.31**). This finding is not surprising, since a one-to-one relationship with a best friend is generally more intimate, involving more self-disclosure, than friendships that are within a peer group.

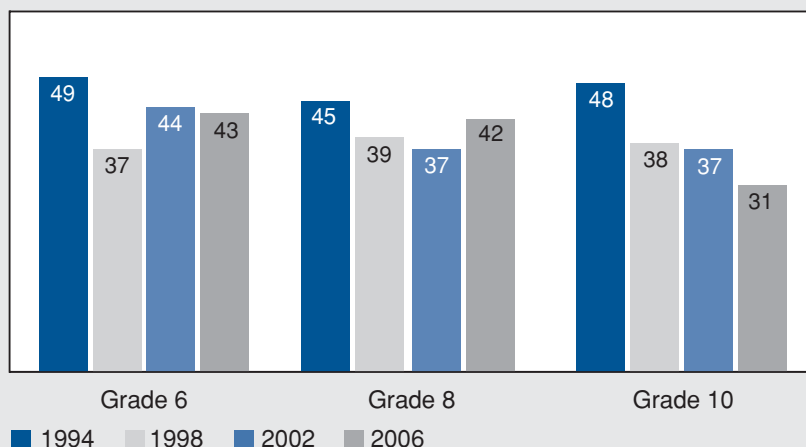
Interactions with friends

2.32 Spending four to five days a week with friends right after school, by grade and gender (%)



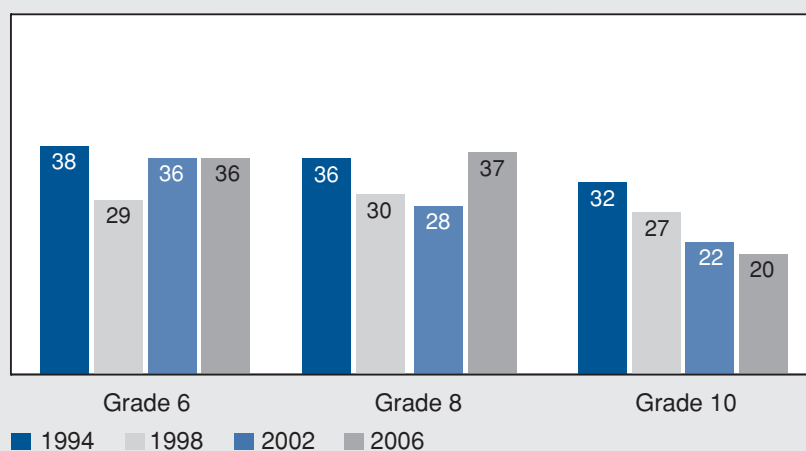
The proportion of students who spend four to five days a week with friends right after school drops significantly between Grades 8 and 10, for both boys and girls (**Figure 2.32**). However, only a fifth of girls in Grade 10 spend time with friends right after school, compared to a third of boys.

2.33 Boys who spend four to five days a week with friends right after school, by grade and year of survey (%)

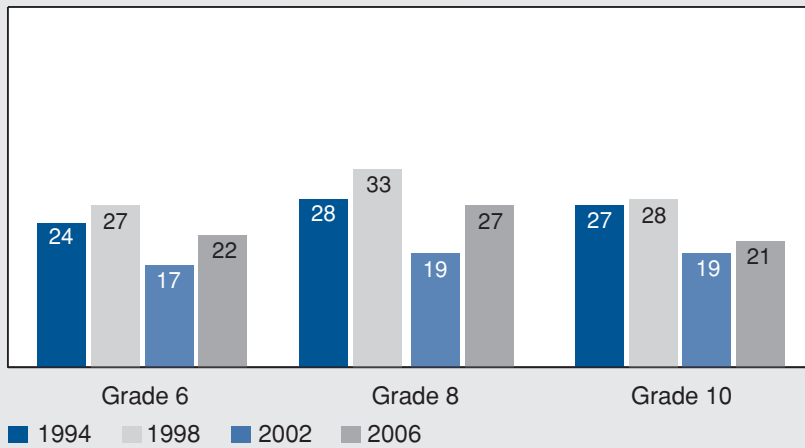


A downward trend is noticeable for students in Grade 10 over the past five survey years (**Figures 2.33** and **2.34**). For example, 31% of Grade 10 boys and 20% of Grade 10 girls report spending four to five days a week with friends right after school in 2006, compared to 48% and 32% in 1994.

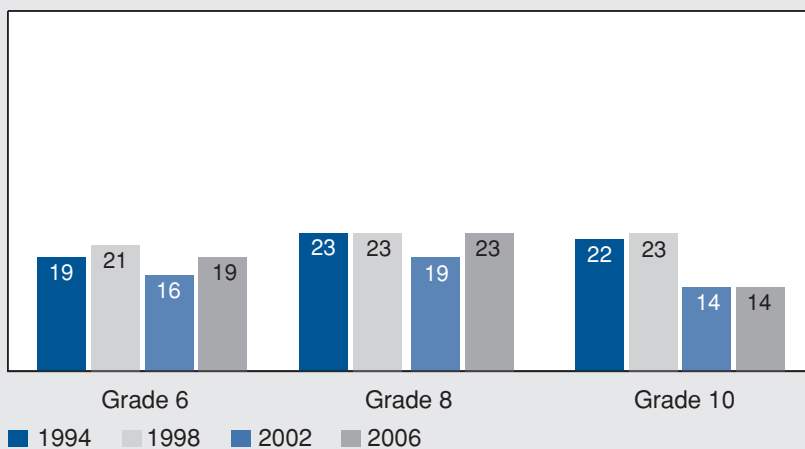
2.34 Girls who spend four to five days a week with friends right after school, by grade and year of survey (%)



2.35 Boys who spend five or more evenings a week out with friends, by grade and year of survey (%)



2.36 Girls who spend five or more evenings a week out with friends, by grade and year of survey (%)



There is a similar decline in evenings spent out with friends for both boys and girls (**Figures 2.35 and 2.36**). In 2006, 21% of Grade 10 boys and 14% of Grade 10 girls report spending five or more evenings a week out with friends, compared to 27% of boys and 22% of girls in 1994. Several reasons for this decline are possible, such as: increased academic demands caused by revised curricula and competitive requirements for post-secondary education; financial demands requiring that students seek part-time employment after school and on weekends; and cyber communication that replaces direct face-to-face contact among young people (see Figure 2.37).

2.37 Talking to friends on the phone or sending them text or e-mail messages five or more times a week, by grade and gender (%)

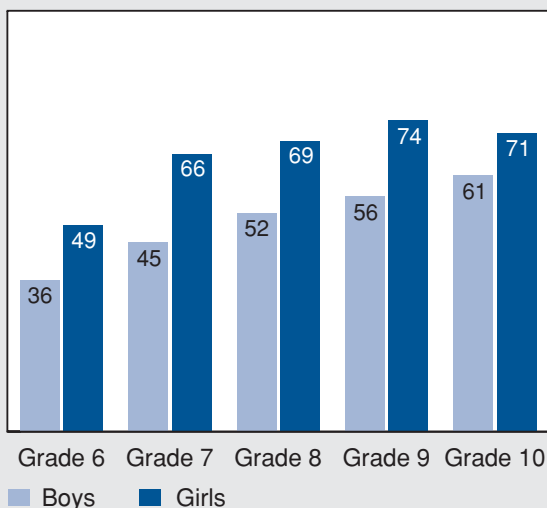
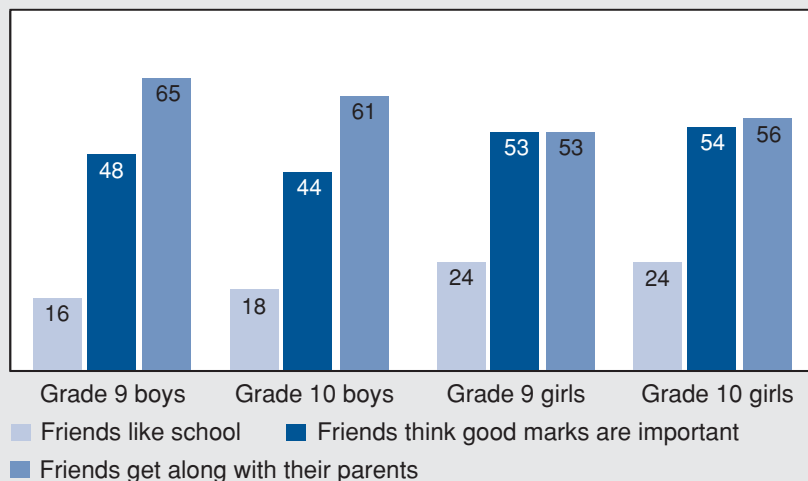


Figure 2.37 illustrates the popularity of phoning friends or sending them text or email messages. There is a consistent increase in these interactions across the grades for both boys and girls, although significantly more girls than boys are involved.

Pro-social attitudes of friends

2.38 Students who report that most or all of their friends have pro-social attitudes, Grades 9 and 10 only, by gender (%)



It is apparent that there are significant gender differences in friends' positive, pro-social attitudes (**Figure 2.38**). More girls than boys in Grades 9 and 10 report that their friends like school and think having good marks is important; however, fewer than 25% of students overall have friends who like school. In contrast, more boys than girls report that their friends get along with their parents.



The peer context

Summary

Generally speaking, young people are more comfortable having friends of the same sex than of the opposite sex, and girls are more comfortable than boys in talking to same-sex friends about things that really bother them. By Grade 10, the proportion of students who report having three or more close same-sex friends decreases, but, also by Grade 10, young people become more comfortable talking to their opposite-sex friends about things that really bother them.

The number of days per week spent with friends right after school as well as the number of evenings per week spent with friends decreases significantly for boys and girls between Grades 8 and 10. This downward trend is noticeable over the five survey years.

Measures used in this report

A communication with friends scale was developed based on students' reports of the extent to which they found it easy or difficult to talk to same-sex friends, opposite-sex friends, and a best friend about things that really bother them. Only those students with complete data for these three items were included.

A pro-social attitudes of friends scale was developed based on three survey questions, with a high score indicating higher proportion of friends with pro-social attitudes. Only those students with complete data for the three items were included.

The pro-social attitudes of friends scale was based on responses to the three statements: My friends like school; My friends think good marks are important; My friends get along with their parents.

References

- Hartup, W. (1996). The company they keep: Friendships and their developmental significance. *Child Development*, 67(1):1-13.
- Furman, W. (1999). Friends and lovers: The role of peer relationships in adolescent romantic relationships. In W.A. Collins and B. Laursen (eds.), *Relationships as developmental contexts: The 30th Minnesota Symposium on Child Development*, pp. 133-154. Hillsdale, NJ: Lawrence Erlbaum Associates.

SOCIO-ECONOMIC CONDITIONS

by William Boyce

What is socio-economic status? Why does it matter?

Socio-economic status (otherwise known as SES) refers to an individual's level of income, wealth, education, and prestige.¹ Disparities in SES are a great cause for concern today as they are increasing throughout the world.² Although socio-economic status has been clearly associated with the well-being of adults and young children, its impact on adolescents has been controversial.³ Some studies find that young people with higher SES have better health and other studies show no effect of SES on health in adolescence. These differing results could be due to studying different youth age groups or to difficulties in measuring SES accurately in the adolescent population.

How are socio-economic conditions measured by the HBSC study?

In the HBSC study, students were asked to identify their parents' types of occupations; if parents were not employed, students were requested to give a reason for the economic inactivity. The study asked young people about perceptions of their family's wealth in comparison to the wealth of other families.

Students were also asked questions about their family's material assets, and its use of wealth, as a reflection of family income. Responses were combined to create a family affluence scale that is used in future chapters.

The study gathered information about household deprivation by asking students how often they went to bed hungry due to a lack of food in the house. (This question could measure either family functioning or household wealth.) Similarly, students were asked about their neighbourhood surroundings, including particular conditions that might impact on their health, such as the presence of gangs, litter, and run-down housing.

What are we reporting on in this section?

In this section, we report on the findings related to parent occupation, perceived family wealth, family affluence, and deprivation in the form of hunger and poor neighbourhood conditions, and what they indicate in terms of disparities in the SES of Canada's young people. We also describe the family affluence scale that was developed for use in examining the relationship between SES and adolescent health behaviours and outcomes.



Family wealth among Canadian students

2.39 Students who report that their family is quite well off or very well off (%)

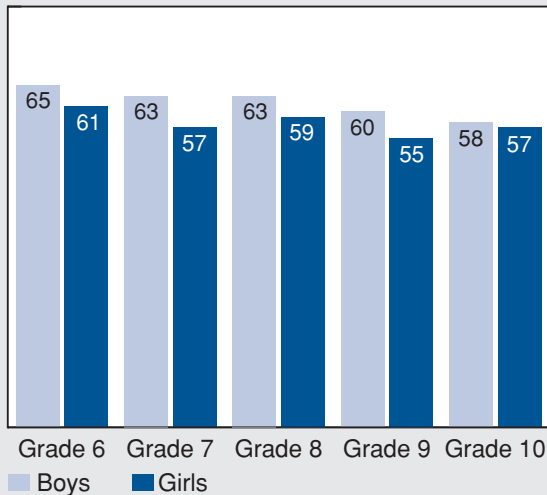
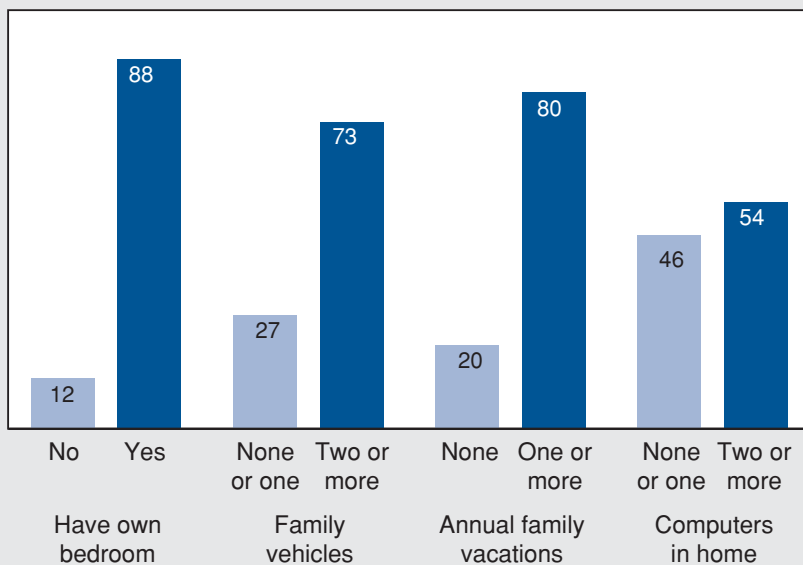


Figure 2.39 illustrates that just over one-half of Canadian students perceive their families to be quite well off or very well off. This proportion decreases for older students, perhaps as they gain a better understanding of their family's actual financial situation. Overall, boys are slightly more likely than girls to report that their families are quite well off or very well off.

SES and parent occupation

Approximately 90% of Canadian students across Grades 6 to 10 report having fathers who are employed; about 82% of students report that their mothers are employed (not shown).

2.40 Four measures of family affluence (%)



Across grades and genders, only about 10 to 15% of students report not having their own bedroom (**Figure 2.40**). Over 70% of school-aged young people state that their families own two or more vehicles. About 20% of students report not having been on any holidays. Over 50% of students report that their families own two or more computers.

In addition, about 85% of students across all grades state that they have access to the Internet at home (not shown).

Deprived conditions

2.41 Students who report going to bed hungry because there is not enough food in the house (%)

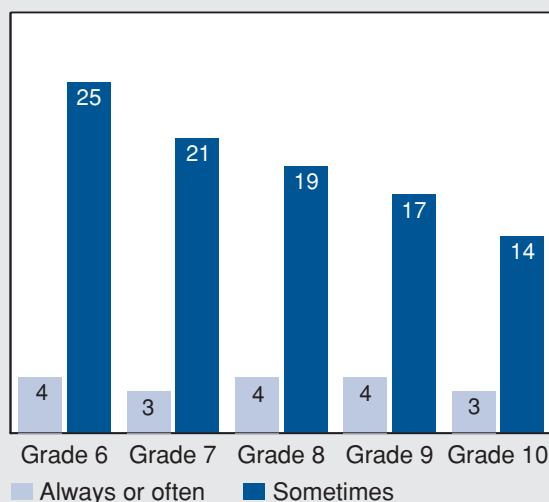
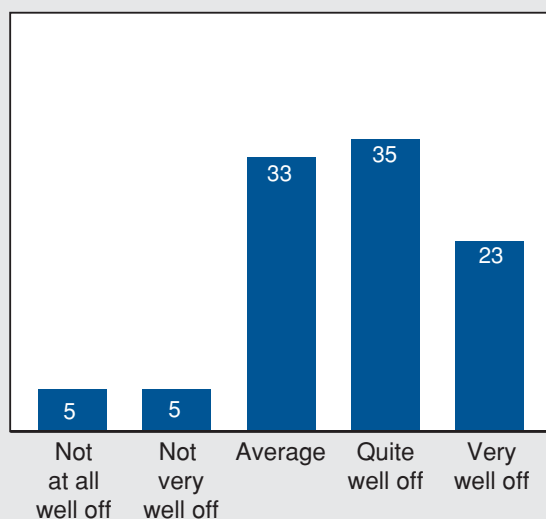


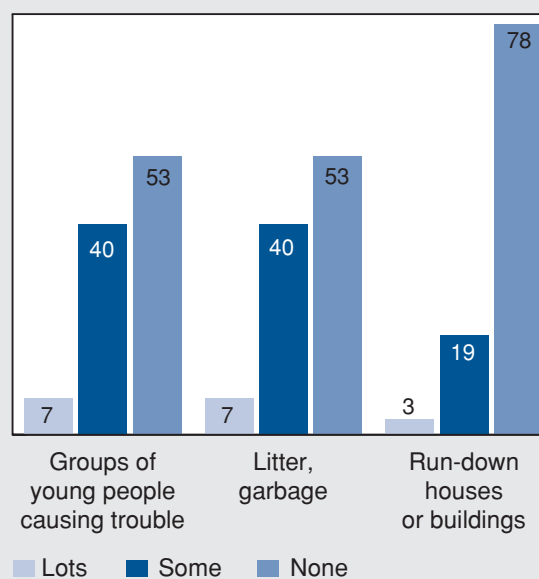
Figure 2.41 illustrates that a significant proportion of students, especially younger ones, sometimes go to bed hungry. For example, 20% of boys, compared with 18% of girls, report that they sometimes go to bed hungry, although this tends to decrease in the older grades. Those who indicate that they always or often go to bed hungry are in a smaller minority.

2.42 Students' perceptions of how well off their local area is (%)



While 10% of students indicate that their local area is not well off, 58% report that their neighbourhood is well off (**Figure 2.42**).

2.43 Reported neighbourhood conditions based on presence of troublemakers, litter, and run-down buildings (%)



Forty-seven percent of young people surveyed report that there are problems with groups causing trouble in the neighbourhood and with litter (**Figure 2.43**). Over 20% report that there are run-down houses or buildings locally.

Socio-economic conditions

Summary

There are clear differences in SES measures among Canadian young people. Although a high proportion of youth report having common family assets and expenditures, only a small majority perceive their families to be quite well off or very well off. This suggests that young people consider their family's wealth relative to others to be as important as their assets.

Measures used in this report

Four measures of family wealth were used in the development of a family affluence scale, based on current scientific literature.^{4,5} The four survey items include: having one's own bedroom; family ownership of a car, van, or truck; going on holiday/vacation; and family ownership of a computer. A family's ability to afford vacations was measured by asking how often students had been on holiday with their family within the previous year. Only those students with complete data for the four items were included.

References

- 1 Currie, C., O. Samdal, W. Boyce, and B. Smith (2001). *Health Behaviour in School-aged Children: A World Health Organization Cross-National Study. Research Protocol for the 2001/02 Survey*. Edinburgh: Child and Adolescent Health Research Unit, University of Edinburgh.
- 2 Atkinson, Anthony B., Lee Rainwater, and Timothy M. Smeeding (1995). *Income Distribution in OECD Countries: Evidence from the Luxembourg Income Study (LIS)*. Social Policy Studies 18. Paris: Organization for Economic Cooperation and Development (October).
- 3 Bergman, M.M., and J. Scott (2001). Young adolescents' well-being and health risk behaviours: Gender and socio-economic differences. *Journal of Adolescence*, 24:183-197.
- 4 Same reference as in note 1 above.
- 5 Boyce, W., T. Torsheim, A. Zambon, and C. Currie (2006). The Family Affluence Scale as a measure of national wealth: Validity of an adolescent self-report measure. *Social Indicators Research*, 78:473-487.



3

Healthy Living and Healthy Weight

by Ian Janssen

What is healthy living?

Healthy living during youth includes being physically active and eating a healthy diet. But what is physical activity and how much of it is enough? What are sedentary activities and how often are students engaged in them? What are the eating habits and weight-loss practices of youths? Besides measuring the physical activities and food consumption or eating that are connected to healthy living, this chapter looks at indicators of unhealthy living among Canada's young people, including overweight, obesity, and body image dissatisfaction.



Physical activity

In its simplest sense, physical activity is defined as any bodily movement produced by the muscles that results in an increase in energy expenditure. Physical activity therefore includes non-vigorous tasks, such as light walking, and vigorous tasks, such as brisk walking, jogging/running, bicycling, playing soccer, and playing basketball. In young people, physical activity needs to be of at least a moderate intensity to generate health benefits.

In general, physical activities of moderate to vigorous intensity are those that will make the individual breathe more deeply and rapidly and increase his or her body temperature (e.g., make them feel warm, sweat).

Although physical activity results in many health benefits, these benefits do not motivate young people to be physically active. Rather, they tend to participate in physical activity for fun and enjoyment, and for social reasons.

Parents, health-care practitioners, and policy-makers are concerned about low levels of physical activity among young people. The health benefits of regular physical activity in young people are numerous and impact on several areas of physical and mental health.

Canada has a Physical Activity Guide for children and another for youth. As an immediate goal, the Guides recommend that inactive young people increase the amount of time they currently spend being physically active by at least 30 min-

Physical health benefits include the regulation of body weight and chronic-disease risk factors (e.g., blood pressure, blood cholesterol), improved fitness, and the development of healthy and strong bones. Mental health benefits include improved self-efficacy, emotional health, and self-image, and absence of depression symptoms.



utes per day and decrease the time they spend watching television, playing computer games, and surfing the internet by at least 30 minutes per day. As a longer-term goal, young people should strive, over several months, to accumulate a total of at least 90 minutes more physical activity per day and reduce by a total of at least 90 minutes per day the amount of time spent in sedentary activities. Refer to Canada's Physical Activity Guide to Healthy Active Living at the following web address for more information on appropriate physical activity choices, prescription, and health benefits: <http://www.phac-aspc.gc.ca/pau-uap/paguide/>.

Sedentary behaviours

Sedentary behaviours are different from physical activity and consist of activities in which there is little movement or energy expenditure. These activities include watching television, playing video games, using the computer, doing homework, and reading.

It is impossible for anyone to be physically active during all waking hours. The goal is not to eliminate sedentary behaviours, but to keep young people's sedentary activities to a reasonable level. In particular, screen-time activities, such as watching television, using the computer, and playing video games, can compete with time for participation in physical activity.

An additional cause for concern is that some sedentary pursuits, most notably television and video games, have been linked to violent and aggressive behaviours, substance use and abuse, body image issues, unhealthy eating, and obesity. Most of these negative health impacts are the consequence of the inappropriate advertising (e.g., commercials for foods low in nutritional value and high in calories) and messaging (e.g., excessive sexual content and violence) that are part of the media environment.¹

Food frequency

Food frequency refers to the number of times one eats a given food item. Food frequency questionnaires are often used in surveys with large sample sizes, such as the HBSC. They provide information on the number of times (but not the exact amount) that specific food items were consumed. Healthy and nutritious food items need to be eaten on a regular basis. Young people should eat certain foods, such as fruits and vegetables and items from the other major food groups, several times a day to maintain good health and optimal growth and development. Similarly, unhealthy food items (e.g., junk food) that are filled with empty calories and lacking in nutritional value should be eaten very infrequently. Overconsumption of unhealthy foods can lead to obesity and nutritional deficiencies.

Overweight and obesity

Simply defined, overweight and obesity represent conditions in which an individual has excess body fat, to the extent that it influences his or her health in a negative way. These conditions result from a long-term imbalance between the amount of energy (or calories) consumed in the diet and the amount of energy used by the body. Over time, excessive eating and/or limited levels of moderate-to-vigorous physical activity can lead to overweight and obesity.

Over the past few years, obesity among young people has become a leading public health issue in Canada. Overweight and obesity are associated with numerous health consequences in Canadian students. These include elevated risk factors associated with heart disease and type 2 diabetes (e.g., increased blood cholesterol, blood pressure, and blood sugar levels), problems with the bones and joints, poor emotional health and well-being, and a reduced overall quality of life.² Furthermore, overweight and obesity that manifest in childhood and adolescence tend to carry on into adulthood, suggesting that most young people with these conditions will struggle with weight-related issues for the rest of their lives.

Body image dissatisfaction and weight-loss practices

Dangerous and unrealistic cultural ideals of slimness have filtered down to the child and adolescent population. Young people, particularly girls, often feel dissatisfied with their body weight and size. Sometimes weight-loss practices are justified, e.g., in an obese youth; other times they are not, e.g., in a youth who has a normal weight or in a youth who is already underweight.

Having a poor body image is highly related to low self-esteem and, in some situations, can lead to eating disorders, such as bulimia and anorexia. Although properly monitored and regulated weight-control practices may be appropriate for obese youngsters, other weight-loss practices may negatively affect a young person's psychological well-being and, in more extreme situations, result in nutritional deficiencies that delay or damage his or her development.

How is healthy living measured by the HBSC study?

We asked students to indicate how many days in the past seven days and in a typical or usual week they were physically active at a moderate to vigorous intensity for at least 60 minutes. Students also reported the number of hours in a usual week in which they exercised or were physically active in class time at school, in free time at school, and in free time outside of school hours. Information about frequency of exercise in free time outside of school hours was also gathered.

Young people who report 60 minutes of physical activity or more on at least five days of the week are considered to be physically active, while those participating in lesser amounts are considered to be physically inactive.³

A series of questions was used to determine how many hours per usual day young people engaged in the following sedentary activities: watching television (including videocassettes and DVDs), playing video games on a computer or console (Playstation, Xbox, GameCube, etc.), and using a computer in free time (including doing homework, chatting online, internet browsing, emailing, etc.). Two hours or more per day for each of these screen-time activities is considered excessive.⁴

Students were asked to report how frequently they ate various food items. For each food item, response options ranged from never to more than once per day.

BMI is calculated as an individual's body weight divided by the square of the individual's height. The standard international unit is kg/m².

Young people reported their height and weight and these values were used to calculate the body mass index or BMI. International age- and gender-specific BMI standards for children and youth were used to classify the participants as being of normal weight, overweight, or obese.⁵

We asked students if they felt their body was much too thin, a bit too thin, about the right size, a bit too fat, or much too fat. Responses of “much too” and “a bit too” were combined for both thin and fat. We also asked if they were currently dieting or doing something else (e.g., exercising) in an attempt to lose weight.

What are we reporting on in this chapter?

In this chapter, we report on the physical activity levels, sedentary habits, food frequency patterns, overweight and obesity levels, and body image and weight-loss practices of Canada's young people.

Physical activity, food frequency, and obesity are then each examined in relation to some of the contextual variables: physical activity in relation to parent trust and communication, academic achievement, attitude towards school, and family affluence; food frequency in relation to family affluence; and obesity in relation to academic achievement and family affluence.

Physical activity levels of young Canadians

3.1 Students physically active five days or more over a typical week for a total of at least 60 minutes per day, by grade and gender (%)

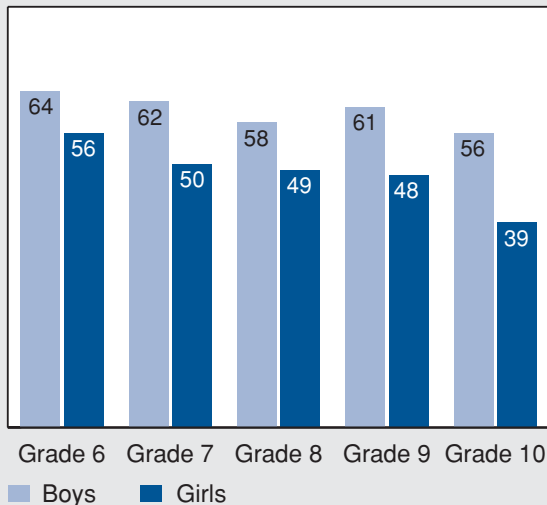
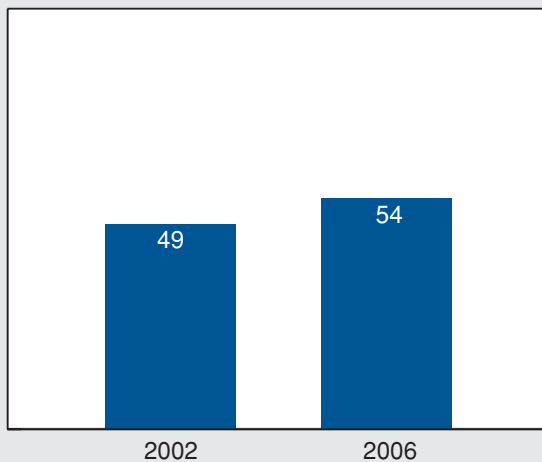


Figure 3.1 shows that between 56 and 64% of boys are physically active, while only 39 to 56% of girls are physically active. Physical activity in both boys and girls decreases from Grade 6 to Grade 10. These findings indicate that almost half of Grade 6 to 10 young people in Canada are physically inactive, with the problem being particularly worrisome in girls and older students.

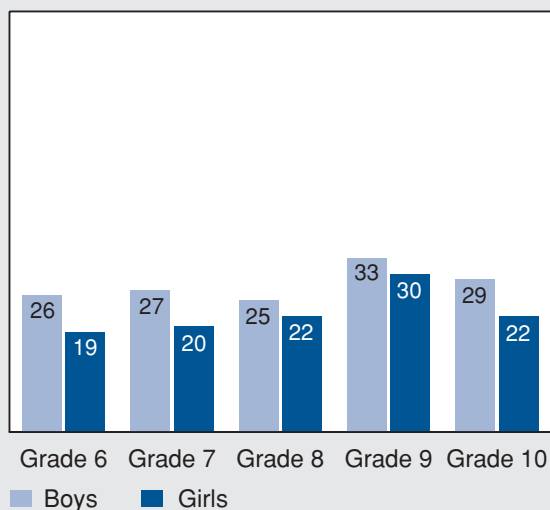
3.2 Students physically active five days or more over a typical week for a total of at least 60 minutes per day, in 2002 and 2006 (%)



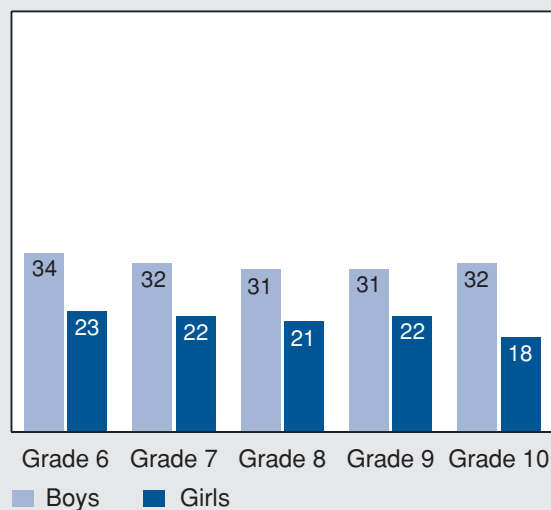
It is encouraging, however, to note a positive trend in physical activity between the 2002 and 2006 HBSC surveys (**Figure 3.2**).



3.3 Spending four or more hours per week doing physical activities in class time at school, by grade and gender (%)

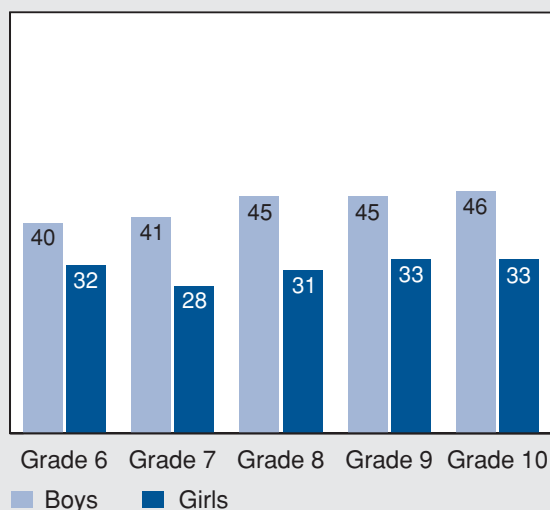


3.4 Spending four or more hours per week doing physical activities in free time at school, by grade and gender (%)



An average of 30% of boys and 22% of girls report participating in four or more hours of moderate-to-vigorous physical activities in the past week during class time at school (**Figure 3.3**) and in their free time at school (**Figure 3.4**).

3.5 Spending four or more hours per week doing physical activities outside of school hours, by grade and gender (%)



From 40 to 46% of boys across the grades and approximately one-third of girls report participating in four or more hours of moderate-to-vigorous physical activities in the past week outside of school hours (**Figure 3.5**).



Sedentary habits of Canadian young people

3.6 Watching two or more hours of television per day, by grade and gender (%)

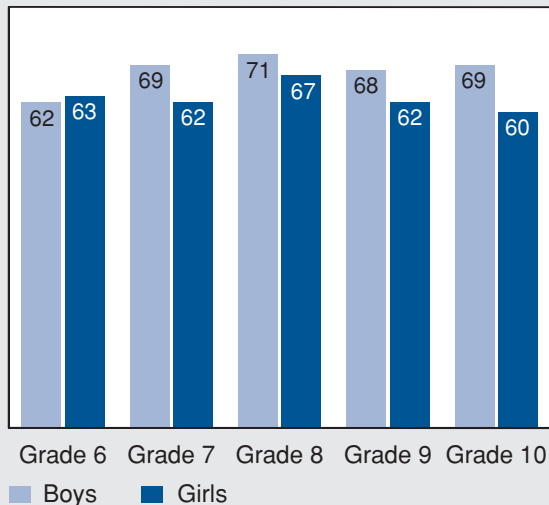
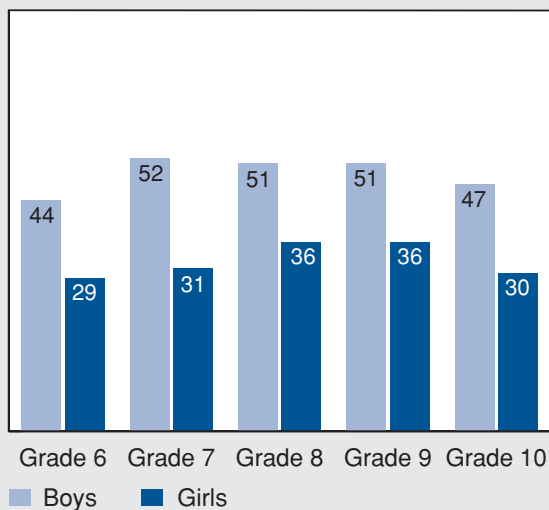


Figure 3.6 illustrates that more than 60% of young people across gender and grade categories report watching two or more hours of television per day. Grade 8 boys are the most excessive television watchers, peaking at 71%.

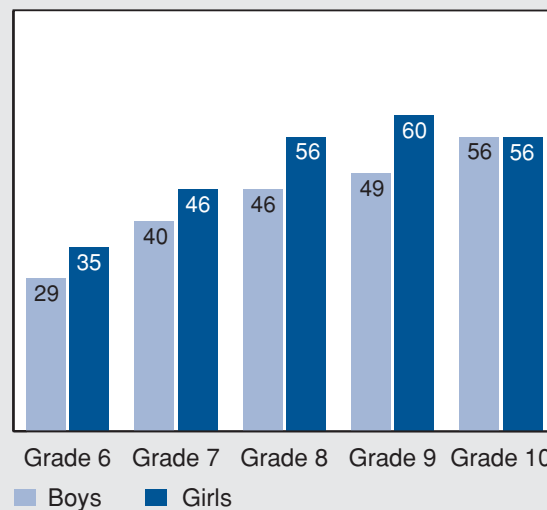


3.7 Playing video games for two hours or more per day, by grade and gender (%)



About one-half of boys and one-third of girls play video games for two hours or more per day on average (**Figure 3.7**).

3.8 Using the computer in free time for two hours or more per day, by grade and gender (%)



The percentage of those using the computer in their free time for two or more hours per day is higher in girls than in boys (up to 60% and 56% respectively) and tends to increase with advancing grade (**Figure 3.8**).

Food frequency patterns in Canadian young people

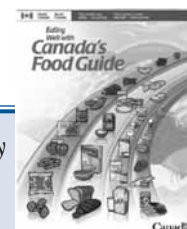
3.9 Students eating food item once per day or more often, by grade and gender (%)

Food Item	Gender	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Fruits	Boys	39	37	33	31	30
	Girls	47	40	45	38	45
Vegetables	Boys	39	35	37	36	35
	Girls	47	44	47	43	48
Low-fat/skim milk	Boys	50	49	54	54	53
	Girls	47	48	50	49	49
Cheese	Boys	17	18	17	17	20
	Girls	19	15	17	15	17
Cereals	Boys	24	28	25	25	22
	Girls	17	19	16	12	14
White bread	Boys	27	30	29	31	30
	Girls	27	28	26	23	21
Brown bread	Boys	19	17	19	16	19
	Girls	19	18	18	16	18
Sweets (candy and chocolate)	Boys	14	16	22	22	24
	Girls	16	18	20	21	20
Non-diet soft drinks	Boys	14	16	19	21	22
	Girls	11	13	12	13	11
Potato chips	Boys	6	10	8	6	8
	Girls	5	5	5	5	2
Cakes and pastries	Boys	5	5	5	5	7
	Girls	4	4	5	3	3
French fries	Boys	4	5	3	4	3
	Girls	3	3	2	3	2

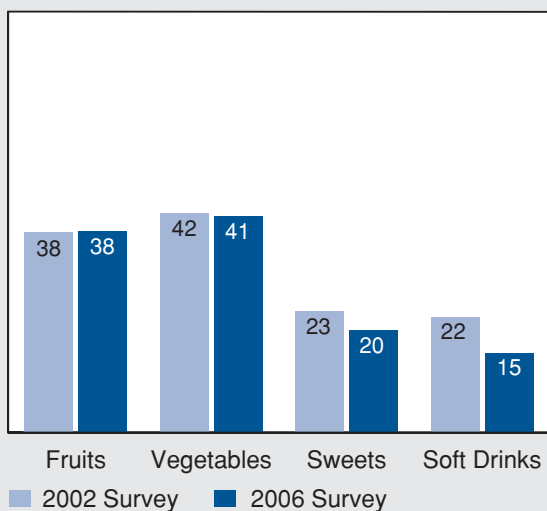
For the purposes of this report, individuals who report consuming a given food item once per day or more often are considered to be frequent consumers. Compared to boys, a higher percentage of girls are frequent consumers of fruits and vegetables (**Table 3.9**), although fewer than half of all students surveyed indicate that they consume fruits or vegetables at least once a day. Approximately 50% of young people report drinking low-fat milk at least once per day and fewer than 20% report eating cheese at least once a day.

Reported consumption of milk, cheese, fruits, and vegetables appears quite low, given that Canada's Food Guide recommends that young people eat 3 to 4 servings of milk products and 6 to 8 servings of fruits and vegetables per day. It should be noted, however, that food frequency and Canada's Food Guide are not directly comparable, as the Food Guide is concerned with daily recommended quantities and food frequency measures the number of times a food is actually eaten with no consideration for how much is eaten.

Canada's Food Guide may be found at the following web address:
www.hc-sc.gc.ca/fn-an/food-guide-aliment/index_e.html.



3.10 Eating fruits, vegetables, sweets, and non-diet soft drinks once per day or more often, in 2002 and 2006 (%)



Fruit and vegetable consumption is stable from the 2002 to the 2006 survey year (**Figure 3.10**).

It is encouraging that the percentage of frequent consumers of candy/chocolate and non-diet soft drinks is down, compared to the 2002 HBSC cycle.

Overweight and obesity levels among young Canadians

3.11 Students who are of normal weight, overweight, and obese, by grade and gender (%)

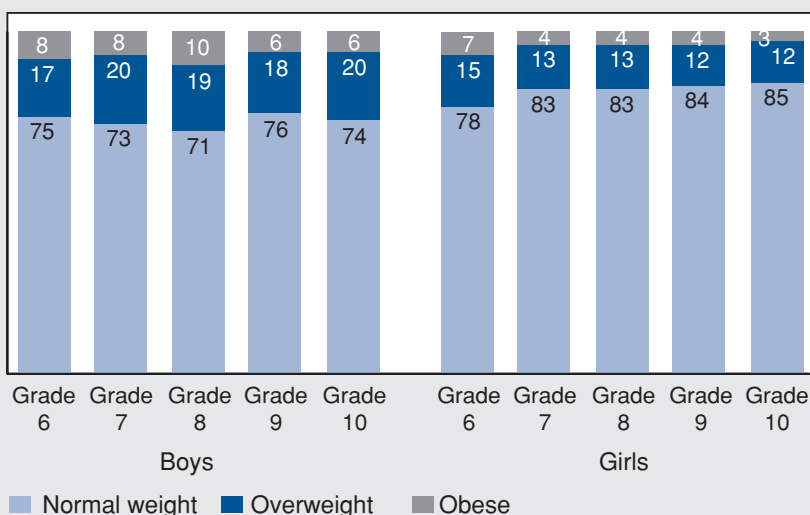
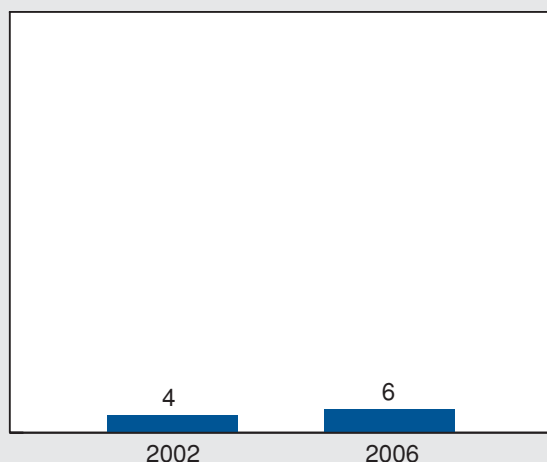
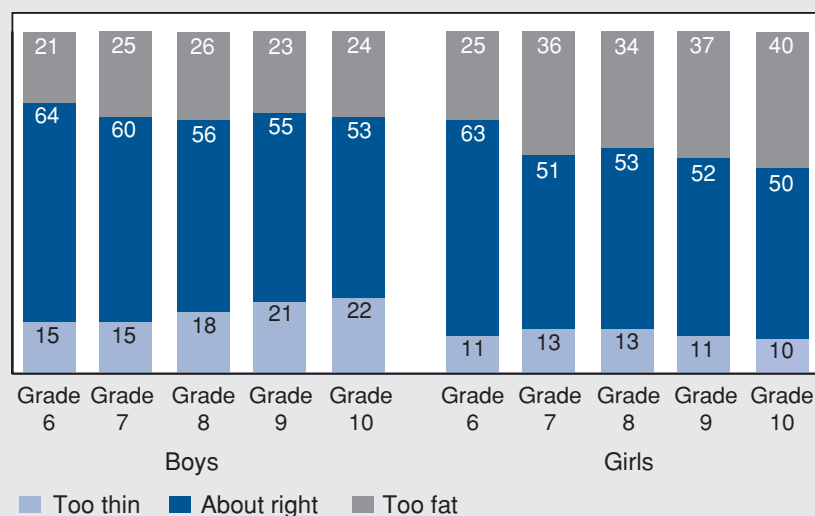


Figure 3.11 illustrates the proportion of young people who are of normal weight, overweight, and obese. The majority are of normal weight, 12 to 20% are overweight, and 3 to 10% are obese. The rates of both overweight and obesity are higher in boys than in girls. In total, approximately 26% of boys and 17% of girls are either overweight or obese.

3.12 Students classified as obese, in 2002 and 2006 (%)

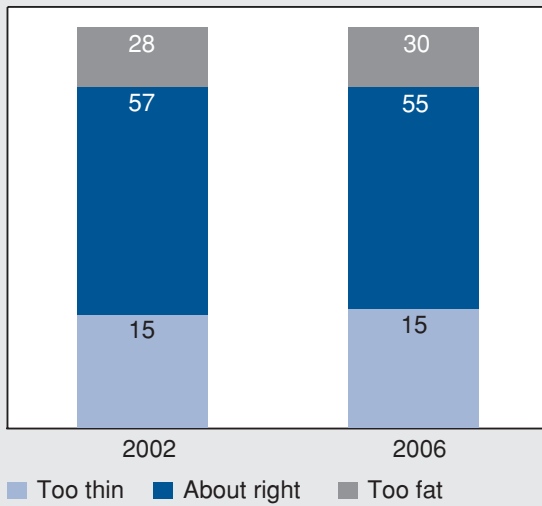
Despite the promising upward trend in physical activity (see Figure 3.2) and downward trend in consumption of sweets (see Figure 3.10), obesity among young people shows an increase from 4% in 2002 to 6% in 2006 (**Figure 3.12**).

Body image and weight-loss practices of Canadian students**3.13 Students who think their body is too thin, about the right size, or too fat, by grade and gender (%)**

According to the 2006 HBSC findings, between 50 and 64% of students think their body is just right, depending on grade and gender. Fifteen to 22% of boys and 10 to 13% of girls believe that their body is too thin (**Figure 3.13**). These rates remain relatively stable with advancing grade in girls, but increase in boys from Grade 6 to Grade 10. In contrast, more girls than boys believe that their body is too fat, with rates in advancing grade remaining relatively stable in boys. Rates increase sharply in girls with advancing grade, such that, by Grade 10, 40% of girls believe their body is too fat.

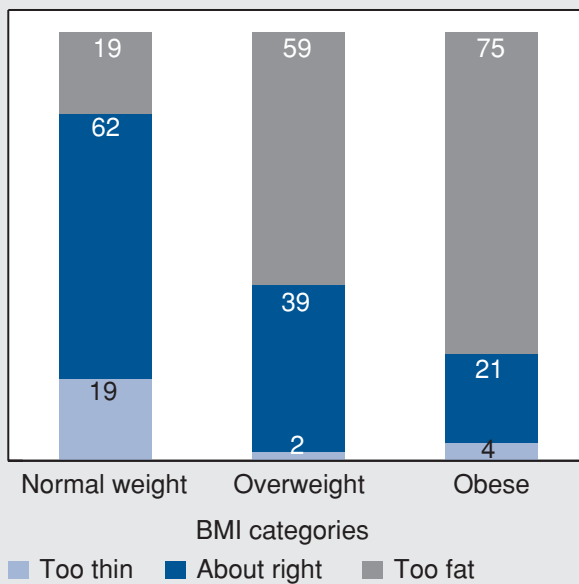


3.14 Students who think their body is too thin, about the right size, or too fat, 2002 and 2006 (%)



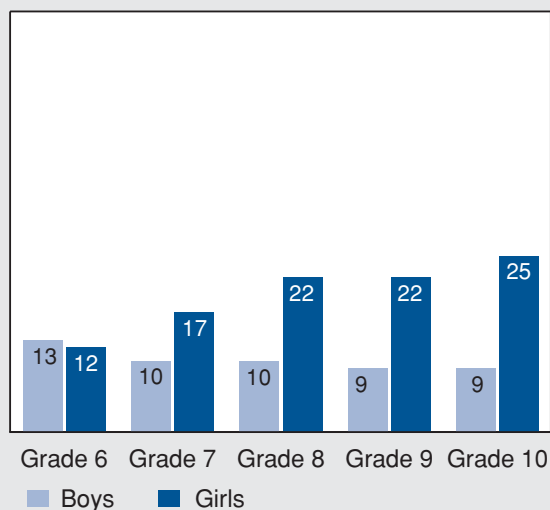
Young people's body perceptions have not changed very much from 2002 to 2006 (**Figure 3.14**).

3.15 Students who think their body is too thin, about the right size, or too fat, by actual BMI category (%)



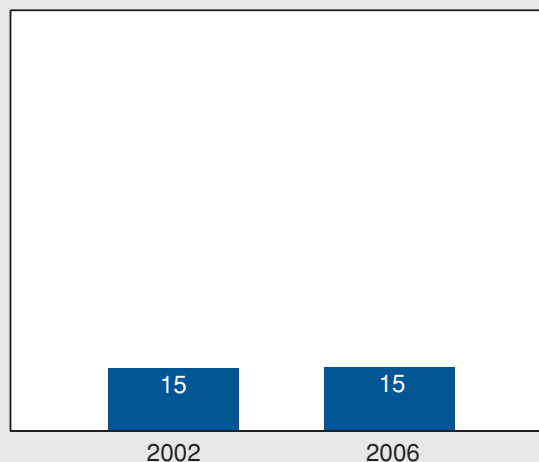
There is a strong relationship between students' body image and their BMI (**Figure 3.15**). For instance, only 4% of obese students believe they are too thin, while 75% of obese students believe they are too fat. It is a cause for concern, however, that only 62% of young people of normal weight feel that their body is about the right size.

3.16 Students who report doing something to lose weight, by grade and gender (%)



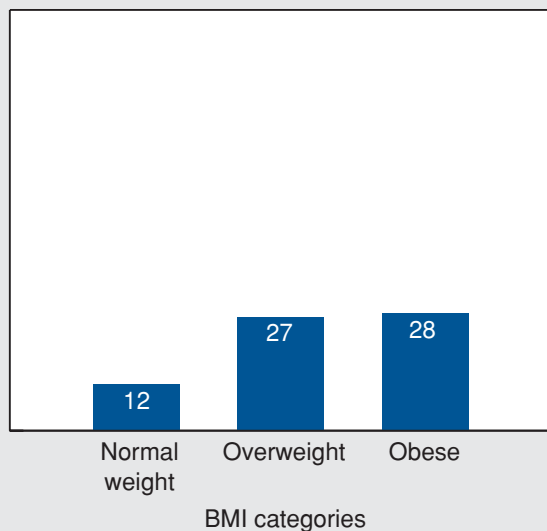
More girls than boys are doing something to lose weight (**Figure 3.16**), with the percentage of those trying to lose weight decreasing with advancing grade in boys, but increasing in girls.

3.17 Students who report doing something to lose weight, in 2002 and 2006



As illustrated in **Figure 3.17**, the proportion of those trying to lose weight has remained stable from 2002 to 2006.

3.18 Students who report doing something to lose weight, by BMI category (%)

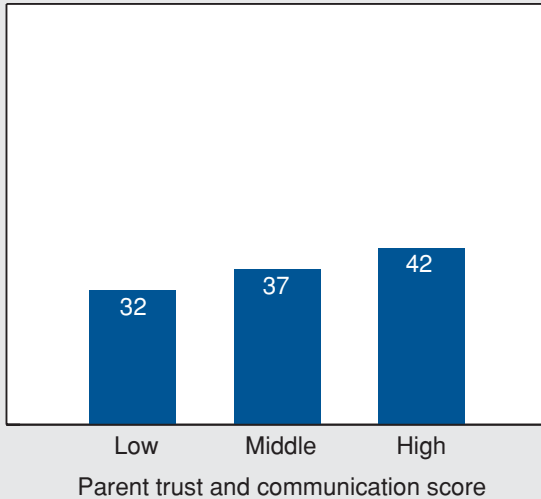


There is a strong relationship between weight-loss practices and BMI category, such that almost 30% of overweight and obese students are trying to lose weight, compared to 12% of those of normal weight (**Figure 3.18**).



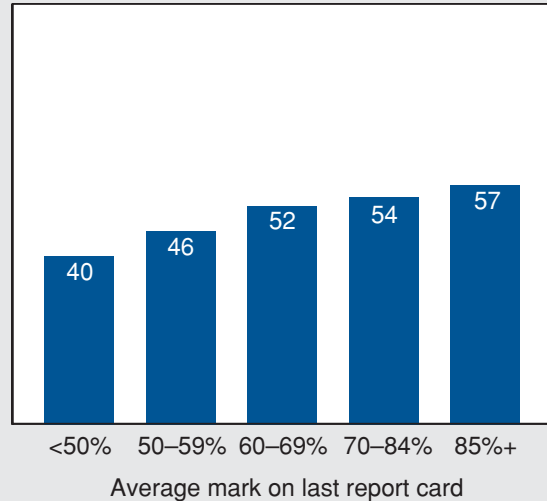
Healthy living and healthy weight in context

3.19 Spending four or more hours per week doing physical activities outside of school hours and parent trust and communication (%)



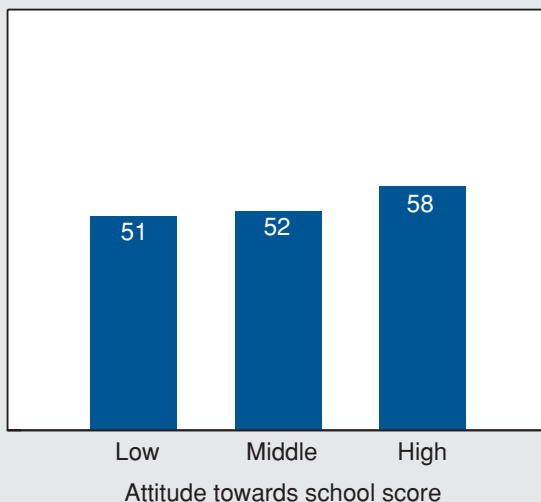
Among students with a high score on the parent trust and communication scale, 42% report being physically active in their free time outside of school, compared to 32% of students with a low score on the scale (**Figure 3.19**).

3.20 Students active for five days or more over a typical week for a total of at least 60 minutes per day and academic achievement (%)

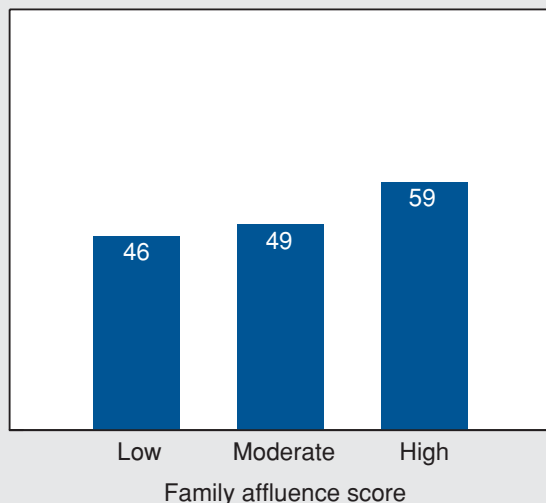


Physical activity is also related to academic achievement, with 57% of those with an average mark of 85% or higher being physically active five days or more per week for at least 60 minutes, compared to only 40% of those with marks of less than 50% (**Figure 3.20**).

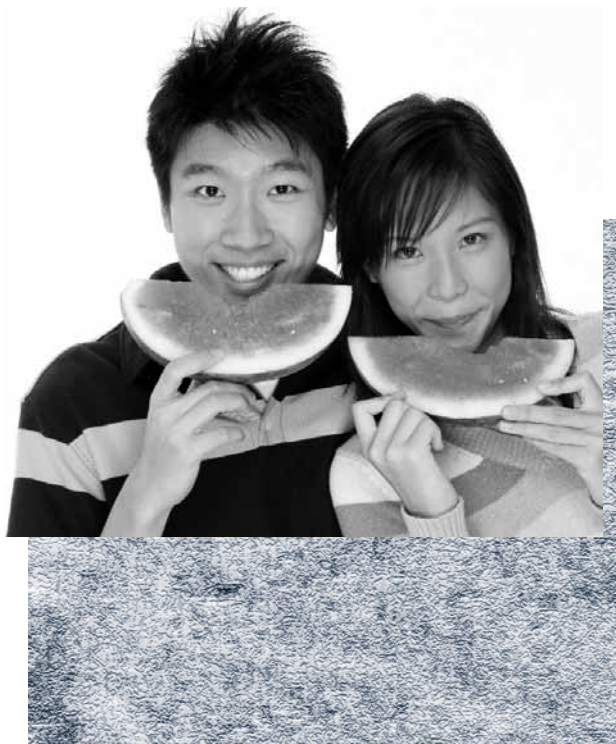
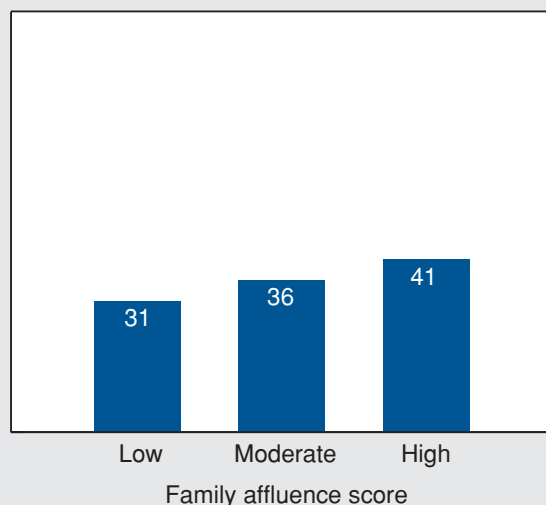
3.21 Spending five or more hours per week doing physical activities in class time and attitude towards school (%)



The percentage of students participating in physical activity increases slightly with higher attitude towards school scores. Fifty-eight percent of students with a high score on the attitude towards school scale report being active for five or more hours per week during class time, while 51% of those with a low score report being active (**Figure 3.21**).

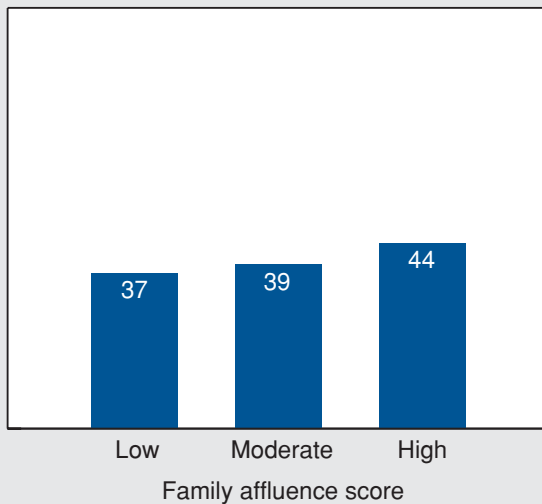
3.22 Students active for five days or more over a typical week for a total of at least 60 minutes per day and family affluence (%)

As shown in **Figure 3.22**, 59% of students with high family affluence are likely to be physically active, while only 46% of students with low family affluence are physically active.

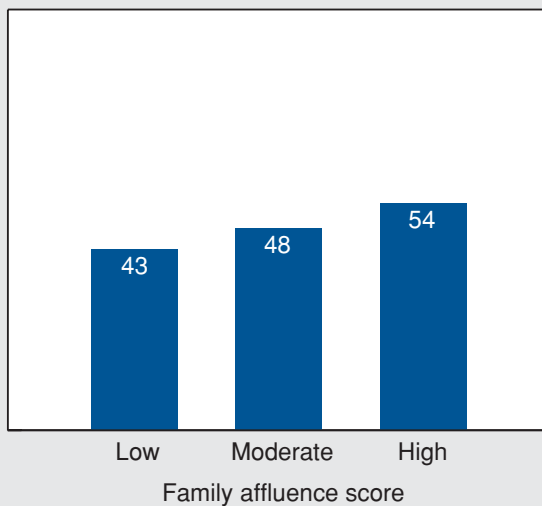
**3.23** Eating fruits once per day or more often and family affluence (%)

As shown in **Figure 3.23**, 41% of those with a high score on the family affluence scale are frequent consumers of fruits, compared to 31% of those with low family affluence.

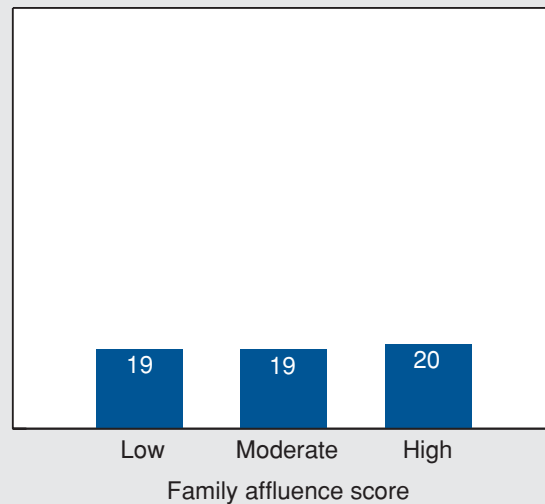
Consistent patterns in young people's food consumption are noticeable in relation to the family affluence scale: young people with higher family affluence are more likely to consume vegetables, fruit, and low-fat or skim milk and less likely to consume non-diet soft drinks at least once per day.

3.24 Eating vegetables once per day or more often and family affluence (%)

Similarly, 44% of those with a high family affluence score are frequent consumers of vegetables, compared to 37% of those with low family affluence (**Figure 3.24**).

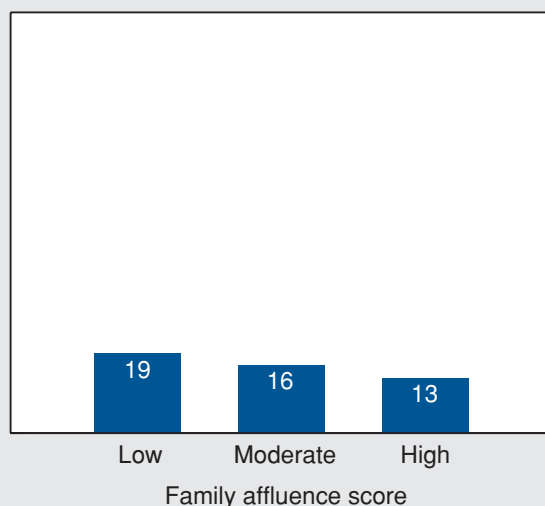
3.25 Drinking low-fat or skim milk once per day or more often and family affluence (%)

Fifty-four percent of participants with high family affluence are frequent consumers of low-fat or skim milk, compared to 43% of those with low family affluence (**Figure 3.25**).

3.26 Eating sweets once per day or more often and family affluence (%)

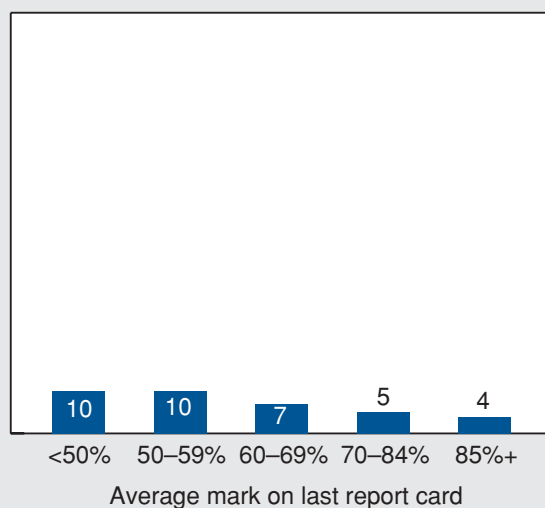
The consumption of candy/chocolate is consistent across family affluence categories (**Figure 3.26**).

3.27 Drinking non-diet soft drinks once per day or more often and family affluence (%)

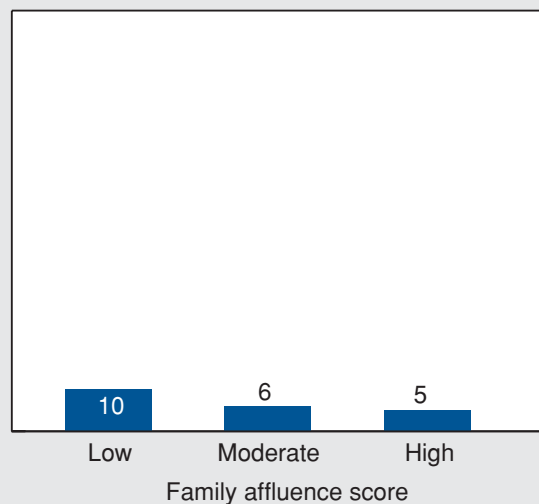


As shown in **Figure 3.27**, a higher percentage of those with a low family affluence score are frequent drinkers of non-diet/sugary soft drinks, compared to those with moderate and high family affluence scores.

3.28 Students who are obese and academic achievement (%)



3.29 Students who are obese and family affluence (%)



There is a relationship between obesity and two of the contextual variables examined in the HBSC study: academic achievement and family affluence.

Obesity increases in relation to poorer academic achievement, moving from 4% in students with marks of 85% or higher to 10% in students with marks of less than 50% (**Figure 3.28**). Likelihood of obesity increases with lower family affluence, doubling from 5% among students with high family affluence to 10% among students with low family affluence (**Figure 3.29**).

Summary

There are several important findings in this chapter. First, the percentage of physically inactive and sedentary students in Canada is alarmingly high. In contrast, the percentage of students reporting daily consumption of fruits, vegetables, and low-fat/skim milk is low. Given these findings, it is not surprising that 1 in 5 school-aged Canadians are overweight or obese. The problems of inactivity and obesity are particularly apparent in young individuals from homes with the lowest level of family affluence.



References

- 1 Canadian Paediatric Society (2003). Impact of media use on children and youth. *Paediatric and Child Health*, 8:301-306.
- 2 Deckelbaum, R.J., and C.L. Williams (2001). Childhood obesity: The health issue. *Obesity Research*, 9 Suppl 4:239S-243S.
- 3 Prochaska, J.J., J.F. Sallis, and B. Long (2001). A physical activity screening measure for use with adolescents in primary care. *Archives of Pediatric and Adolescent Medicine*, 155:554-559.
- 4 Same reference as note 1 above.
- 5 Cole, T.J., M.C. Bellizzi, K.M. Flegal, and W.H. Dietz (2000). Establishing a standard definition for child overweight and obesity worldwide: International survey. *British Medical Journal*, 320:1240-1243.

4

Health Risk Behaviours

by Hana Saab
and Matthew King

Why are health risk behaviours important?

Youth behaviour often involves taking some type of risk. Some experts regard engagement in risk behaviours as essential to maturation and to the ability of young people to develop meaningful relationships with their peers. Although engaging in health risk behaviours is a natural aspect of development, these behaviours can escalate into larger problems and lead to a risk-taking lifestyle. It is important to monitor trends in youth health risk behaviours to better inform harm reduction strategies and health promotion campaigns.



How are health risk behaviours measured by the HBSC study?

The four broad categories of risk behaviour examined in the HBSC study include smoking, drinking, substance use, and sexual activity. We asked all Grade 6 to 10 students about the first time they smoked a cigarette and how often they smoke at present. We also asked students about their first time drinking alcohol and getting drunk, types of alcohol consumed, and how often.

A survey with additional questions was administered to Grade 9 and 10 students. It asked questions about the frequency of cannabis use and other substance use, including: ecstasy; amphetamines; methamphetamines (e.g., crystal meth and meth); heroin, opium, or morphine; medical drugs (to get stoned, for example tranquilizers such as Valium and Ketamine and sedatives such as Seconal); cocaine (e.g., crack); glue or solvent sniffing; LSD (e.g., acid); magic mushrooms; Ritalin (to get high); and anabolic steroids (to enhance or improve appearance or athletic performance).

Grade 9 and 10 students were also asked whether they had had sexual intercourse and, if so, at what age. Regarding the last time they had sexual intercourse, students were also asked whether a condom was used and what methods of birth control, if any.

What are we reporting on in this chapter?

Substances 101

Ecstasy is a recreational drug which has long had a strong association with parts of youth culture. It is a synthetic, psychoactive (mind-altering) drug with hallucinogenic and amphetamine-like effects. Amphetamines and methamphetamines are stimulant drugs that act on the central nervous system, which is the reason why they are often referred to as “speed.” Hallucinogens are a class of drugs that can alter the senses and perceptions of people who use them. Some hallucinogens occur naturally in plants, such as “magic mushrooms,” while other hallucinogens, such as LSD, are prepared in laboratories. The active ingredient, Psilocybin, from magic mushrooms is similar in its effects and chemical structure to LSD. Anabolic steroids are generally popular among boys who use them to boost their physique.

In this chapter, we report on the ages at which students first tried smoking a cigarette (more than a puff), percentage of students who report smoking tobacco daily in 2006 and previous years, the age at which students first consumed alcohol (more than a small amount), percentage of students consuming different kinds of alcoholic drinks weekly compared to previous years, percentage of students who report ever getting “really drunk” at least twice across the survey years, first experimentation with cannabis and frequency of use, and trend information about percentage of students who report using other substances (with the exception of magic mushrooms, which are a new survey item for 2006).

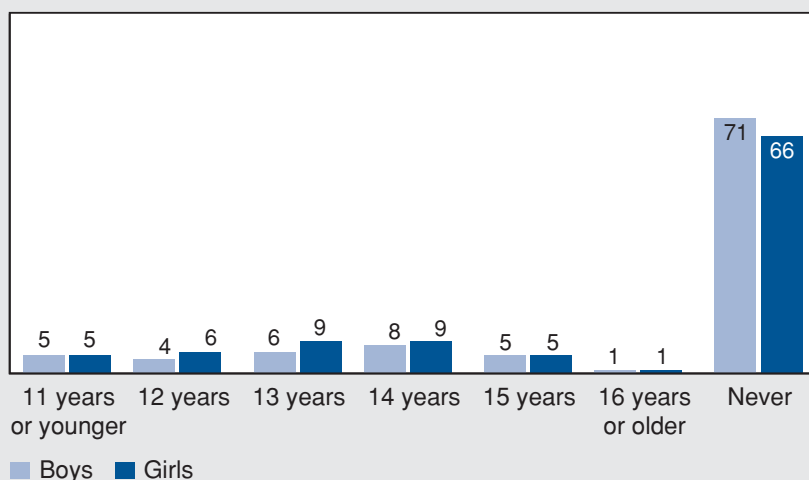
Information on sexual activity includes age of first sexual intercourse, percentage of Grade 9 and 10 students who have had sexual intercourse from the two most recent survey years, condom use, and types of contraception used by young people.

This chapter examines risk behaviour in relation to protective factors that appear to buffer the progression of risk behaviours into problem behaviours later in life. Four risk behaviours – daily smoking, getting drunk at least twice, using cannabis in the past 30 days, and having sexual intercourse – are examined in relation to all seven contextual variables and measures: living with both parents, parent trust and communication, academic achievement, attitude towards school, communication with friends, pro-social attitudes of friends, and family affluence. The role of context is more pronounced for some risk behaviours than others.



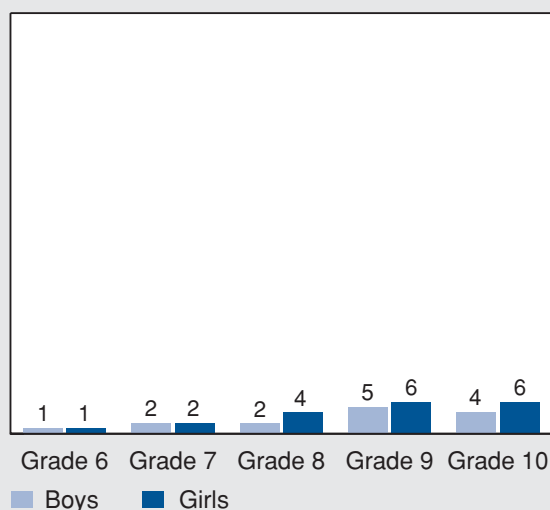
Smoking patterns among Canadian young people

4.1 Age at which students in Grades 9 and 10 first tried smoking, by gender (%)

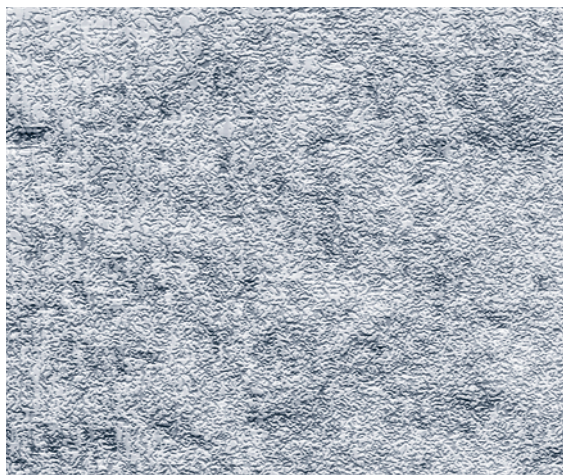


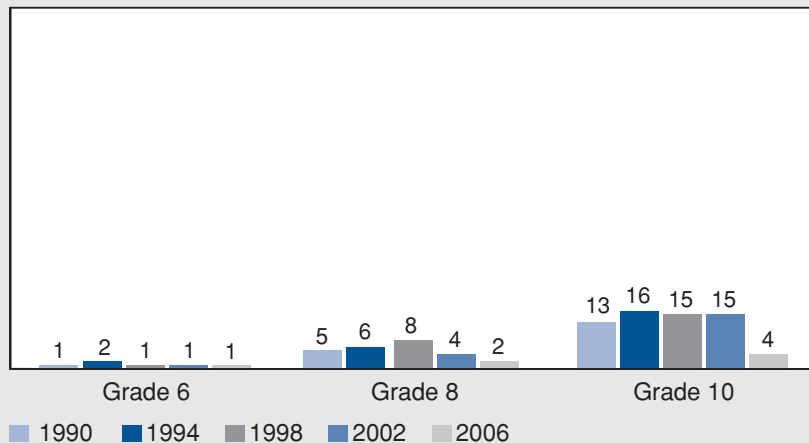
Just under one-third of Canadian Grade 9 and 10 students indicate that they have smoked a cigarette (**Figure 4.1**). Five percent of both boys and girls report first trying smoking when they were aged 11 years or younger, 16% of boys and 18% of girls when they were between 12 and 14 years old, and 6% when they were 15 years of age or older.

4.2 Smoking daily, by grade and gender (%)

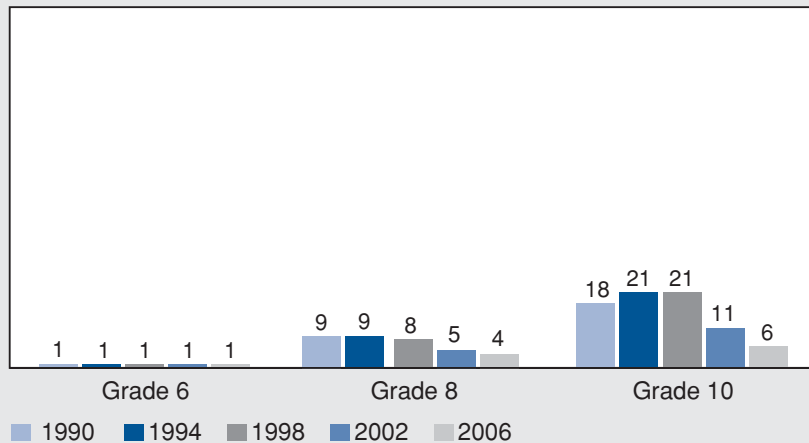


The gender differences in daily smoking rates are not significant (**Figure 4.2**). In Grade 6, only 1% of students smoke daily with the rate reaching a high of 5% in Grade 9 boys and 6% in Grade 10 girls. These findings are corroborated by other studies such as the 2005 Canadian Community Health Survey that report the sharpest decline in smoking to be among young people aged 12 to 17.¹



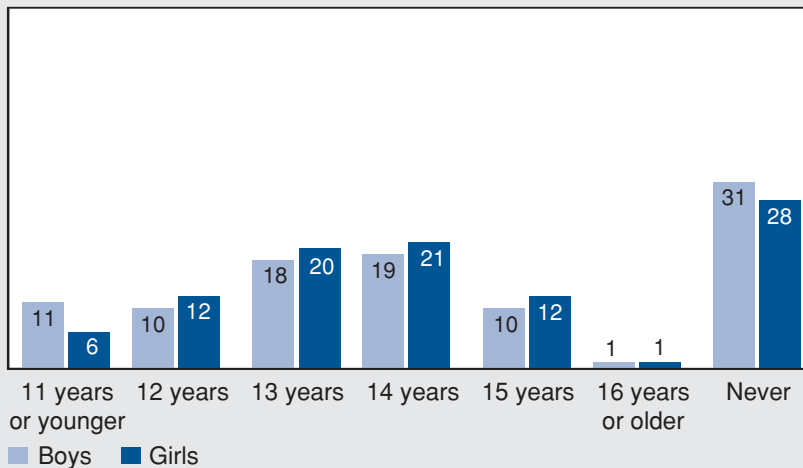
4.3 Boys who smoke daily, by grade and year of survey (%)

There is an encouraging downward trend in daily smoking for both genders since the last HBSC survey in 2002 (**Figures 4.3** and **4.4**). In 2006, only 4% of boys report smoking daily, compared to 15% in 2002, and 6% of girls report smoking daily, compared to 11% in 2002.

4.4 Girls who smoke daily, by grade and year of survey (%)

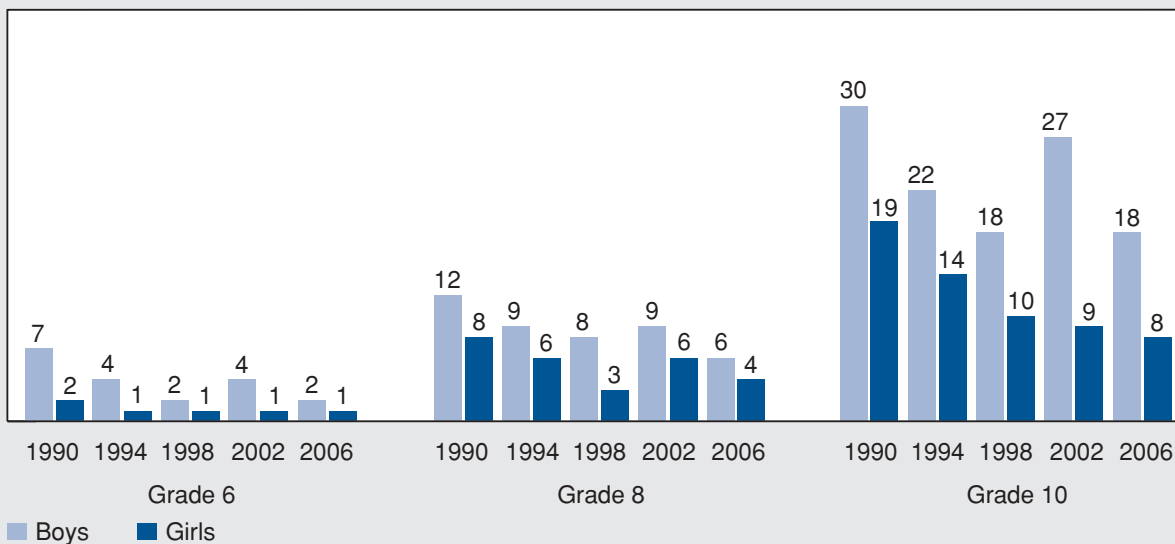
Canadian students' alcohol consumption

4.5 Age at which students in Grades 9 and 10 first tried alcohol, by gender (%)

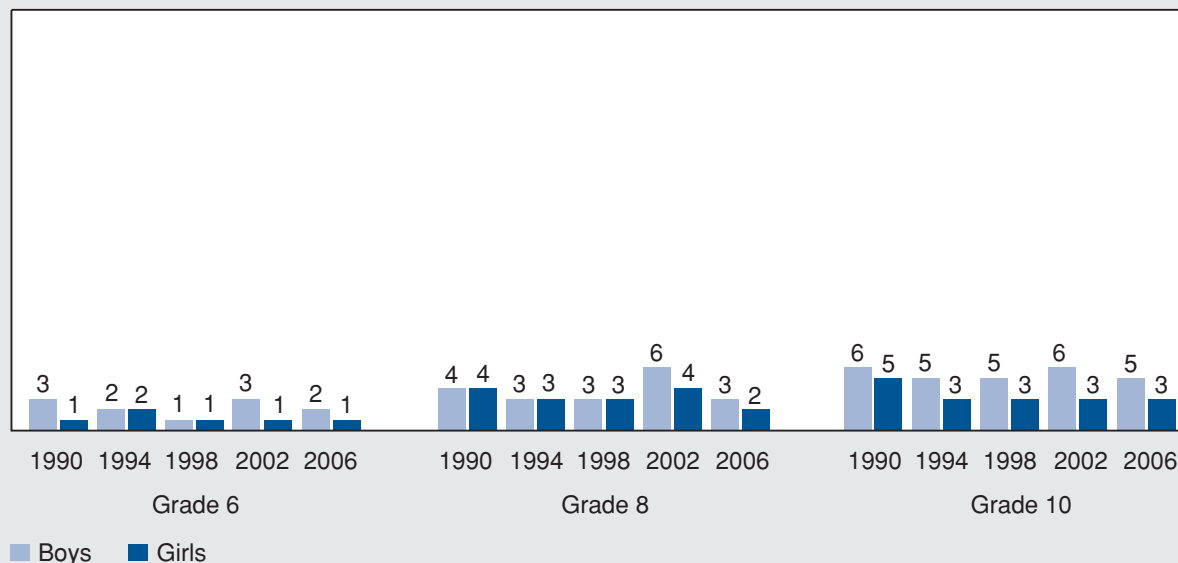


Alcohol remains popular among Canadian students, such that 70% report trying alcohol by the time they are 16 years old. More Grade 9 and 10 boys (11%) than girls (6%) report trying alcohol for the first time when they were 11 years or younger. Half of students (47% of boys and 53% of girls) report trying alcohol for the first time between the ages of 12 and 14. Eleven percent of boys and 13% of girls report trying alcohol for the first time when they were 15 years or older (**Figure 4.5**).

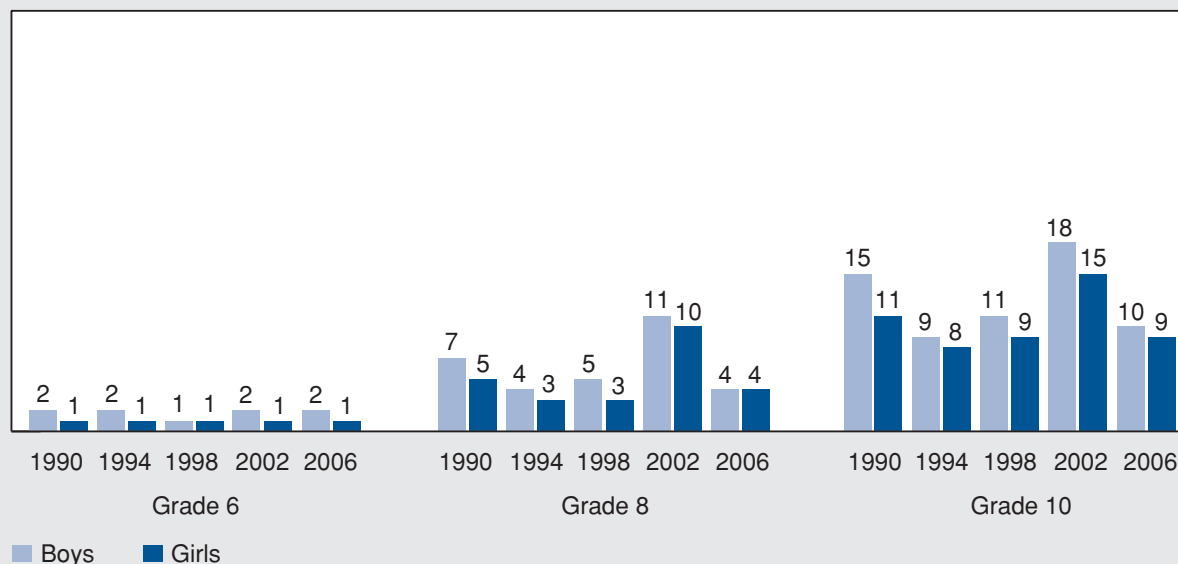
4.6 Drinking beer at least once a week, by grade, gender, and year of survey (%)



The proportion of girls and boys in Grades 6 and 8 who report drinking beer at least once a week has declined over the five Canadian HBSC surveys (**Figure 4.6**). The proportion of girls in Grade 10 who drink beer at least once a week has dropped steadily from 19% in 1990 to 8% in 2006. Although there was a similar downward trend for Grade 10 boys from 30% to 18% between 1990 and 1998, weekly beer drinking saw a surge in 2002 to drop by 9% in 2006 to 18%.

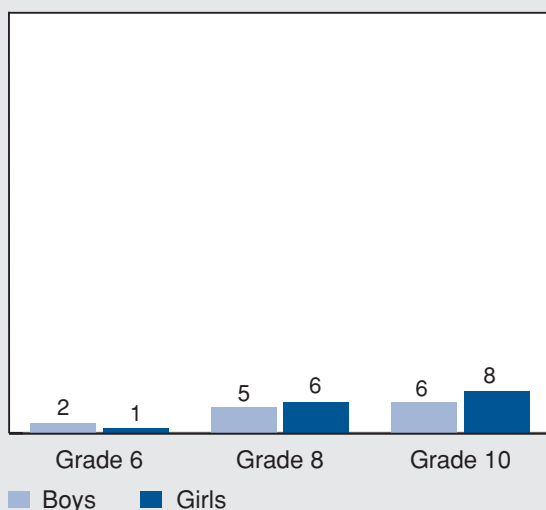
4.7 Drinking wine at least once a week, by grade, gender, and year of survey (%)

A different pattern emerges for wine drinking, which is more stable. On average, around 3% of girls report drinking wine at least once a week in Grades 8 and 10 since 1990, with no more than 6% of boys reporting drinking wine at least once a week over the same time period (**Figure 4.7**).

4.8 Drinking liquor and spirits at least once a week, by grade, gender, and year of survey (%)

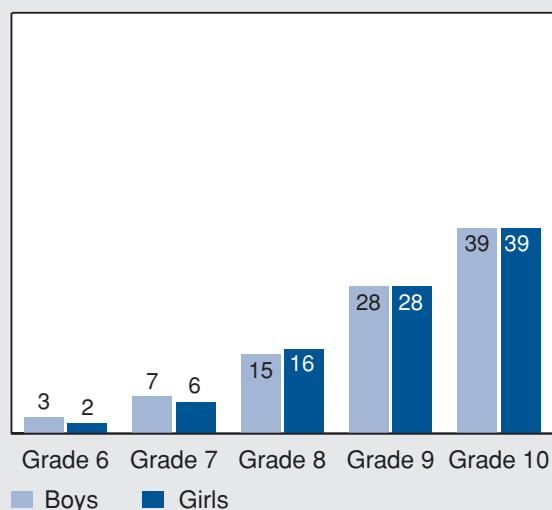
Drinking liquor and spirits at least once a week appears to be quite low (less than 2%) for students in Grade 6 over the five HBSC surveys (**Figure 4.8**). The downward trend in liquor and spirit weekly consumption for both boys and girls in Grades 8 and 10 between 1990 and 1998 rose significantly in 2002 to then drop sharply to 4% for both genders in Grade 8, and to an average of 10% for boys and girls in Grade 10 (or to 10% for boys and 9% for girls in Grade 10) in the 2006 cycle.

4.9 Drinking coolers at least once a week, by grade and gender (%)



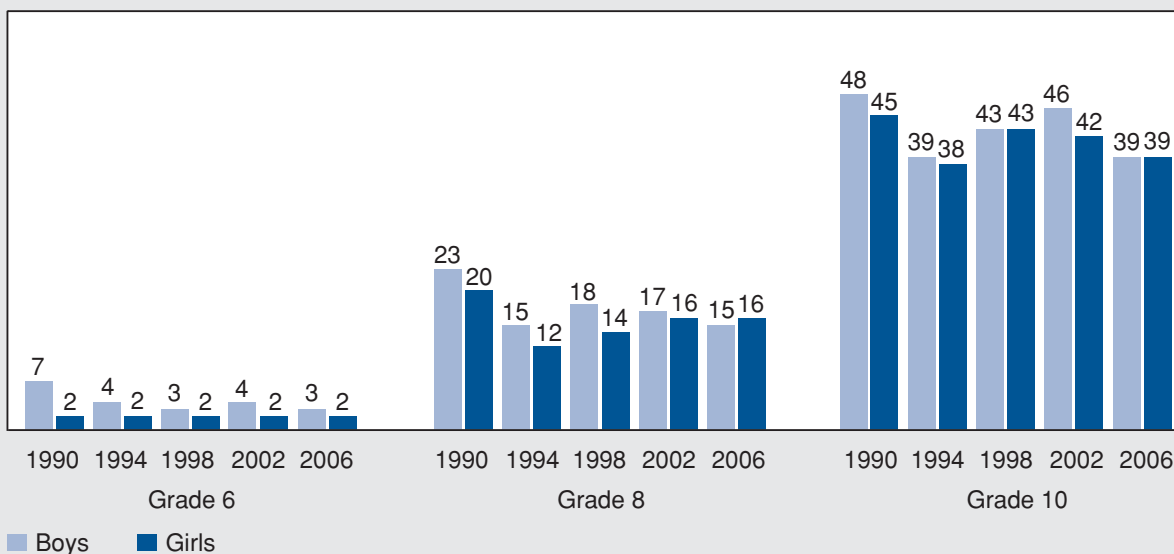
On the other hand, consumption of coolers by Canadian students might be replacing the traditional alcoholic drinks, given that 6% of boys and 8% of girls in Grade 10 report drinking coolers at least once a week (**Figure 4.9**). Trend data for this item is not, however, available to support this observation as the item is new for the 2006 survey.

4.10 Students who report being “really drunk” at least twice, by grade and gender (%)



Getting drunk increases steadily by grade, to the point where around two-fifths (39%) of Grade 10 boys and girls report being really drunk at least twice in their lifetime (**Figure 4.10**). In each of the grades, boys and girls are similar in this regard.

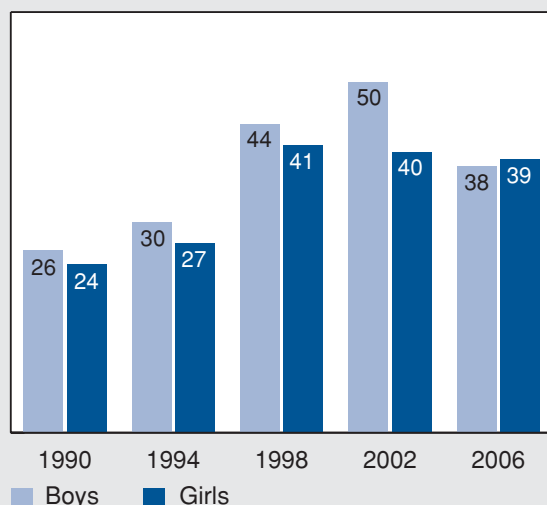
4.11 Students who report being “really drunk” at least twice, by grade, gender, and year of survey (%)



Drunkenness rates were highest in 1990, the first year of the study in Canada (**Figure 4.11**). For Grades 6 and 8, there is little change over time after 1994. For Grade 10 students, there has been a slight decline from 2002 to 2006 in the percentage of students who report getting “really drunk” twice or more in their lifetime.

Substance use among Canadian students

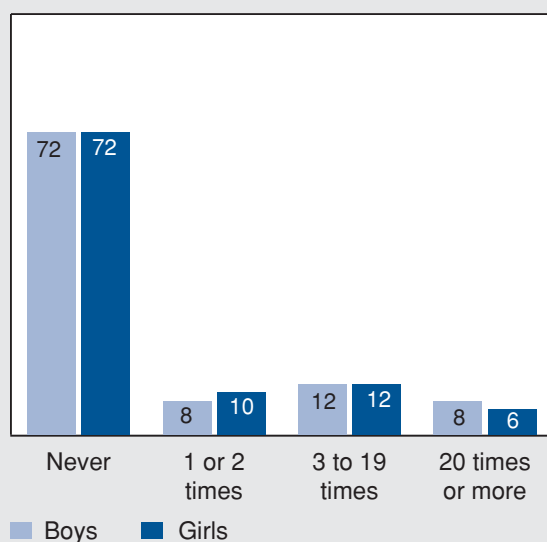
4.12 Grade 10 students who report having tried cannabis, by gender and year of survey (%)



Reports of ever having used cannabis rose steadily from 1990 to peak in 2002, such that half of the boys and two-fifths of the girls surveyed reported trying cannabis in 2002 (**Figure 4.12**). Considering that cannabis, along with smoking and alcohol use, has become a gateway drug, it is encouraging to observe that the proportion of boys in Grade 10 who report ever having tried cannabis dropped significantly in 2006. Overall results from 2006 show that just under two-fifths of boys and girls report ever having tried the drug.

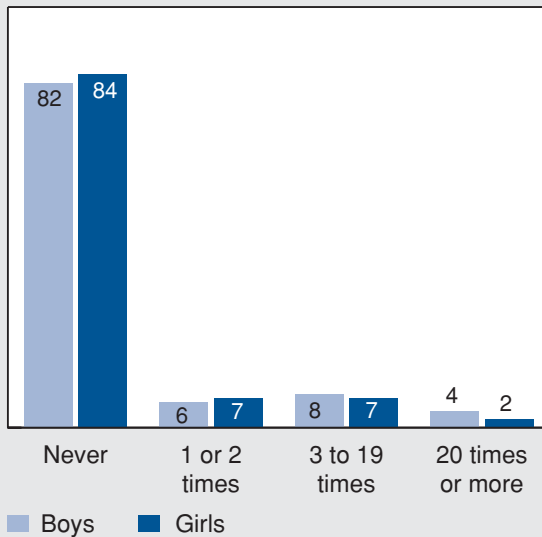
Cannabis, smoking, and alcohol have become gateways to other drugs used by young people.

4.13 Grade 9 and 10 students using cannabis in the past 12 months, by gender and frequency (%)



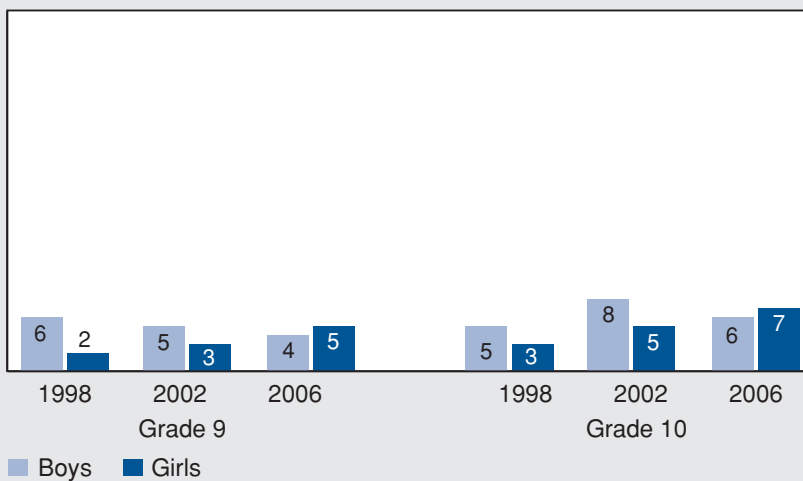
Overall, 28% of Grade 9 and 10 boys and girls report using cannabis in the past 12 months with no significant gender differences. When asked about their cannabis use in the past 12 months, 8% of boys and 10% of girls report using the drug once or twice, 12% of both genders report using the drug 3 to 19 times, and 8% of boys and 6% of girls report using cannabis 20 times or more in the past 12 months (**Figure 4.13**).

4.14 Grade 9 and 10 students using cannabis in the past 30 days, by gender and frequency (%)



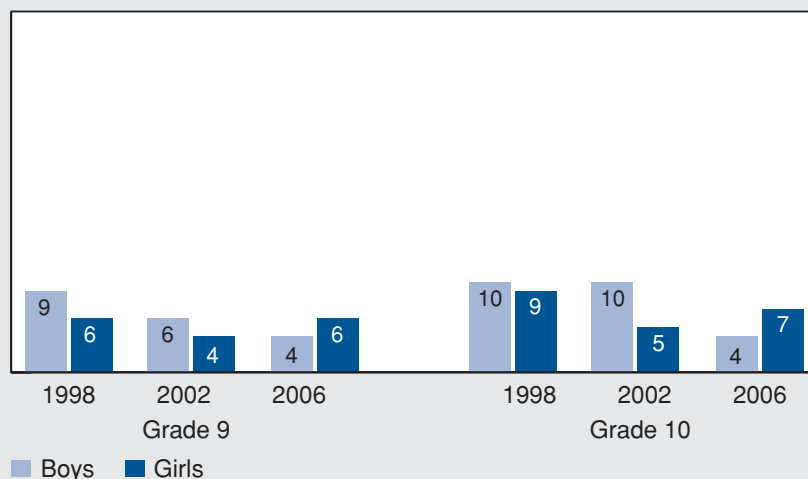
Grade 9 and 10 students were also asked about their use of cannabis in the past 30 days (**Figure 4.14**). Overall, 18% of boys and 16% of girls in Grades 9 and 10 had used cannabis in the past 30 days. Six percent of boys and 7% of girls report using the drug once or twice, 8% of boys and 7% of girls report using cannabis 3 to 19 times, and 4% of boys and 2% of girls report using cannabis 20 times or more in the past 30 days.

4.15 Grade 9 and 10 students using ecstasy, by gender and year of survey (%)



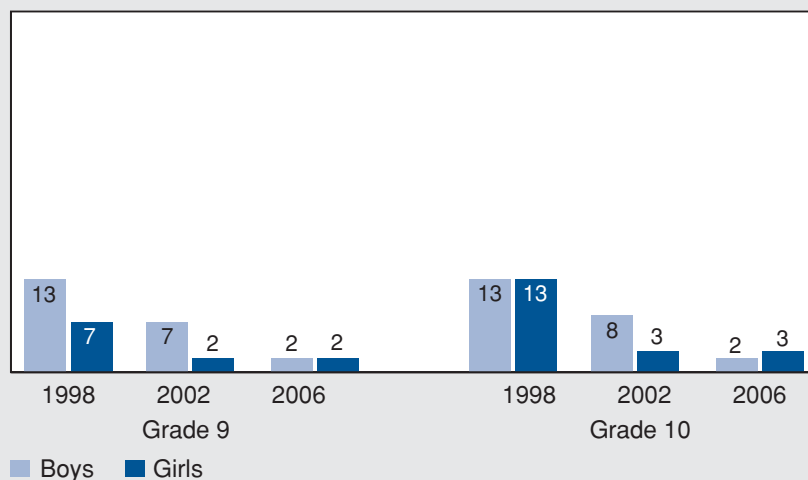
Although there is no statistically significant difference in the use of ecstasy across the three most recent HBSC surveys (**Figure 4.15**), there is an increase in the use of the drug among Grade 9 girls from 2% in 1998 to 5% and Grade 10 girls from 3% in 1998 to 7% in 2006.

4.16 Grade 9 and 10 students using amphetamines, by gender and year of survey (%)

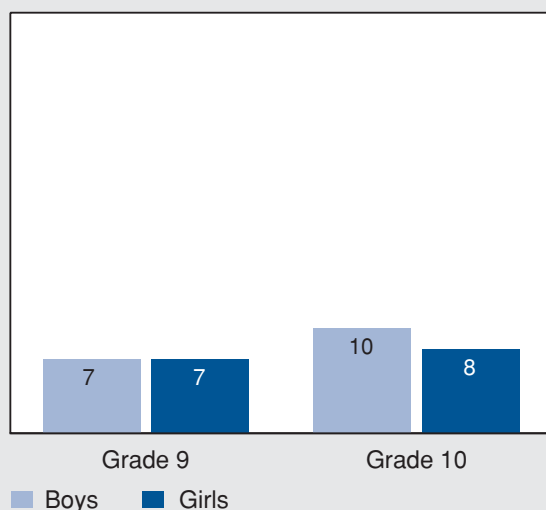


The use of amphetamines has declined significantly among Grade 9 boys from 9% in 1998 to 4% in 2006 and Grade 10 boys from 10% in 1998 to 4% in 2006 (**Figure 4.16**).

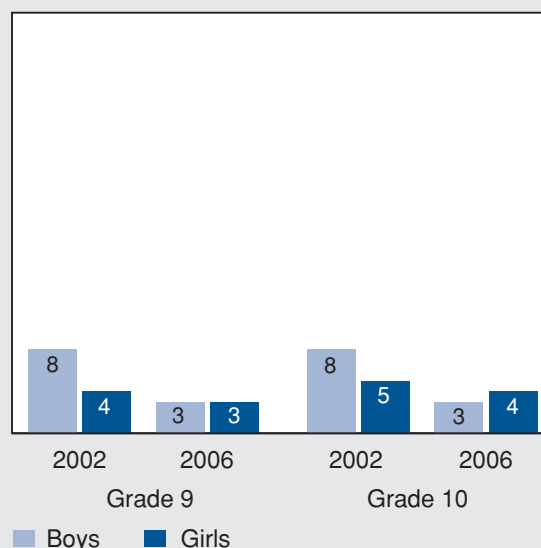
4.17 Grade 9 and 10 students using LSD, by gender and year of survey (%)



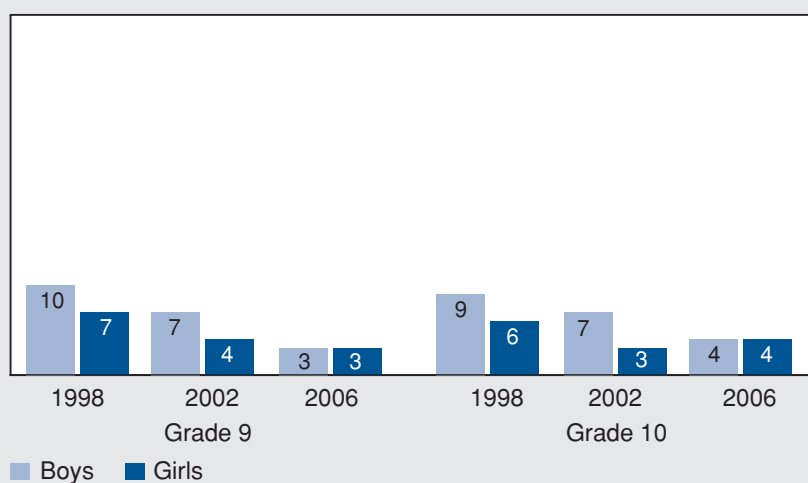
While the use of LSD peaked in 1998 for both boys and girls, its use dropped significantly in 2006 for both genders. On average, 2% of students in Grades 9 and 10 report using the drug (**Figure 4.17**).

4.18 Grade 9 and 10 students using magic mushrooms, by gender (%)

Seven percent of students in Grade 9 and 9% of students in Grade 10 report using magic mushrooms, a drug that was addressed by the HBSC study for the first time in the 2006 survey (**Figure 4.18**).

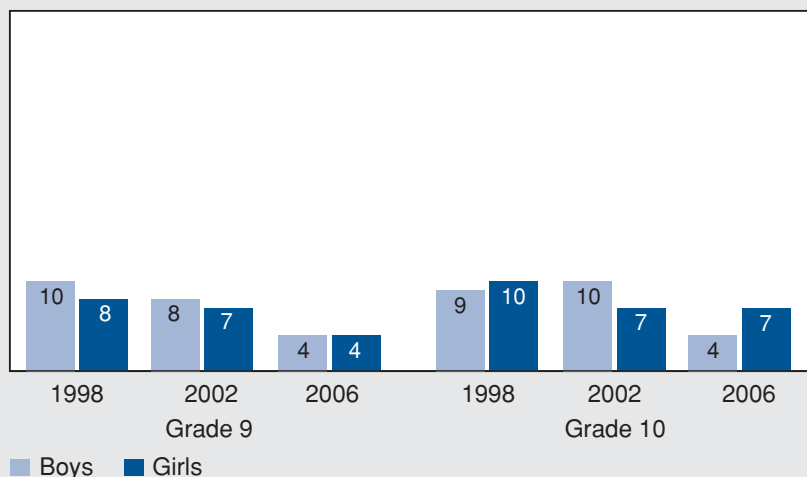
4.19 Grade 9 and 10 students using Ritalin to get high, by gender and year of survey (%)

The use of Ritalin to get high has decreased for boys in Grades 9 and 10 by 5% since 2002 (**Figure 4.19**), but shows a change of only 1% for girls. Fewer than 5% of boys and girls in either grade report using the drug in 2006.

4.20 Grade 9 and 10 students sniffing glue or solvents, by gender and year of survey (%)

There is a downward trend, similar to that of Ritalin, in sniffing glue and solvents since 1998. In 2006, 3% of Grade 9 students and 4% of Grade 10 students report using these substances (**Figure 4.20**).

4.21 Grade 9 and 10 students using medical drugs to get stoned, by gender and year of survey (%)

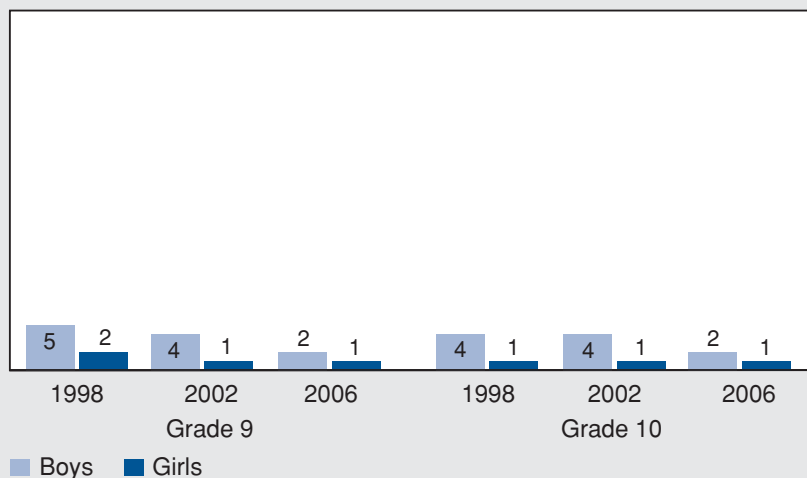


Although the use of other medical drugs to get stoned has decreased in Grade 9 boys and girls and Grade 10 boys since 1998, it has remained at 7% in Grade 10 girls since 2002 (**Figure 4.21**).



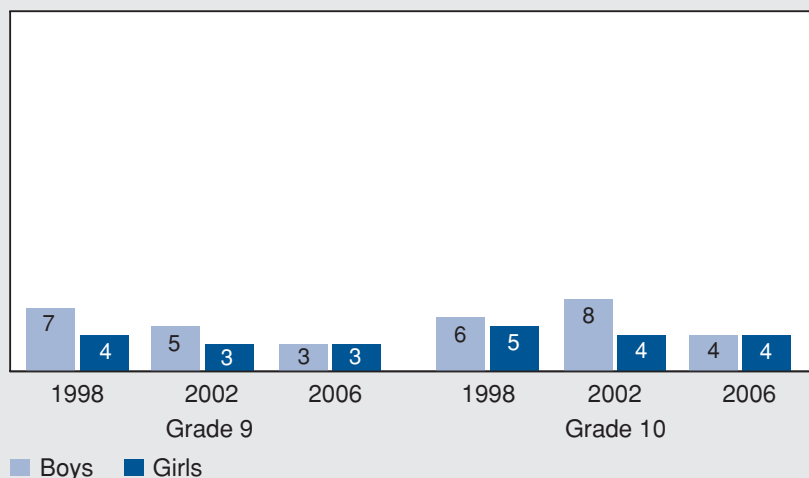
Medical drugs, which may include cough suppressants and other cough and cold medications, are available over the counter and young people may not be fully aware of the dangers of using these widely-available medications.

4.22 Grade 9 and 10 students using anabolic steroids, by gender and year of survey (%)



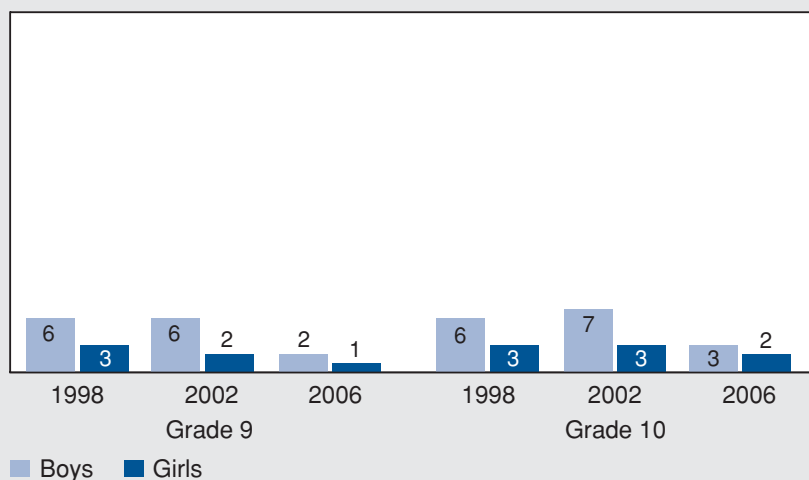
The use of anabolic steroids has dropped in both genders since 1998 (**Figure 4.22**).

4.23 Grade 9 and 10 students using cocaine, by gender and year of survey (%)



The use of cocaine is slightly lower for boys than in 1998, with no significant variations for girls over the last three HBSC survey cycles. Three per cent of students in Grade 9 and 4% of students in Grade 10 report the use of this hard substance in 2006 (**Figure 4.23**).

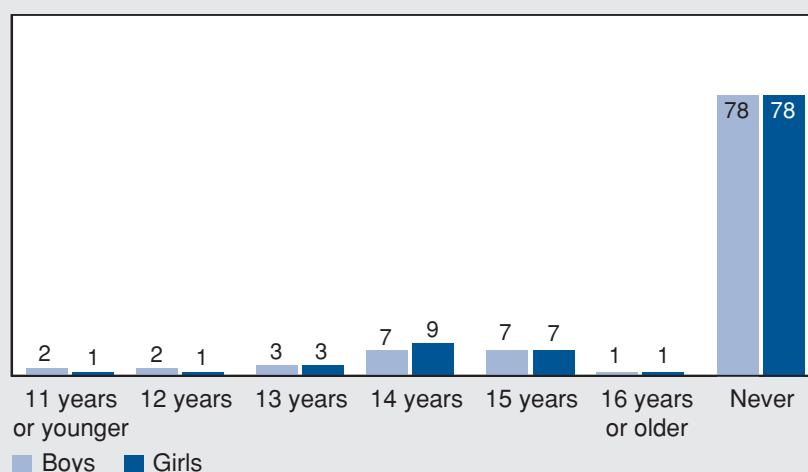
4.24 Grade 9 and 10 students using heroin, opium, or morphine, by gender and year of survey (%)



The use of another class of hard drugs – which includes heroin, opium, and morphine – has also dropped, especially in boys, down to 2% in Grade 9 boys from 6% in 1998 and 2002 and down to 3% in Grade 10 boys from 6% and 7% in 1998 and 2002 respectively. There is virtually no change for girls across the last three survey years (**Figure 4.24**).

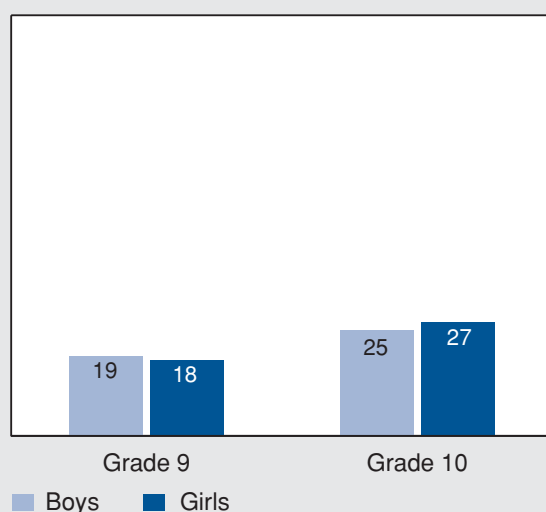
Sexual activity

4.25 Age at which students in Grades 9 and 10 first had sexual intercourse, by gender (%)



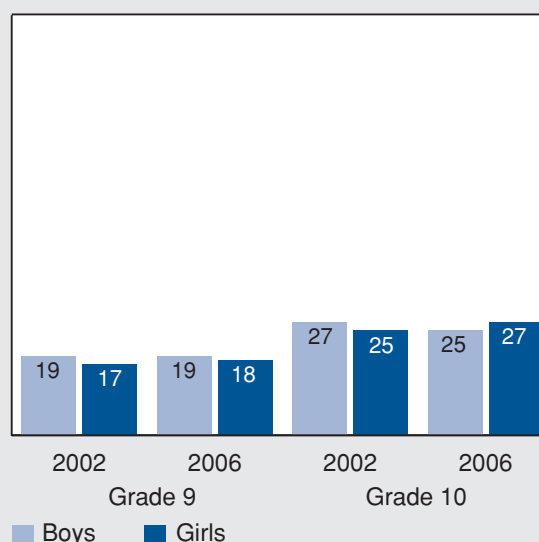
Twenty-two percent of students in Grades 9 and 10 report having had sexual intercourse by the time of the survey (**Figure 4.25**). Four percent of boys and 2% of girls report first having sex when they were 12 years old or younger, 17% of boys and 19% of girls when they were between 13 and 15 years old, and 1% when they were 16 years or older.

4.26 Grade 9 and 10 students who report having had sexual intercourse, by gender (%)

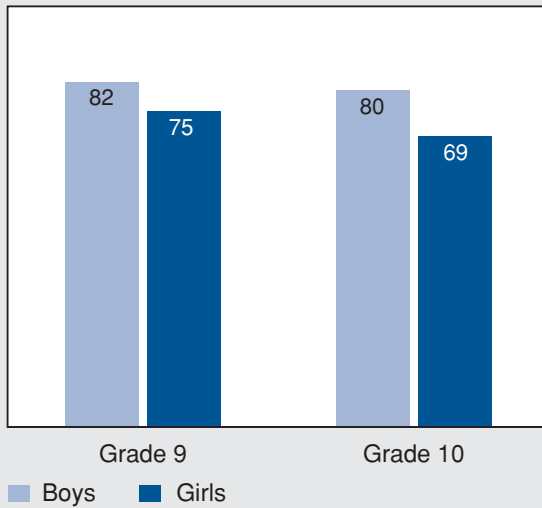


Around a fifth of students in Grade 9 (19% of boys and 18% of girls) and a quarter of students in Grade 10 (25% of boys and 27% of girls) report having had sexual intercourse (**Figure 4.26**).

4.27 Grade 9 and 10 students who report having had sexual intercourse, by gender in 2002 and 2006 (%)



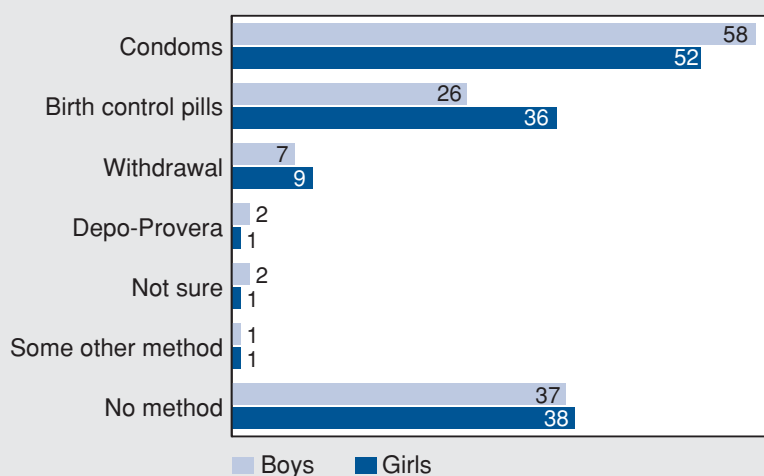
The proportion of students who have had sexual intercourse has not changed since the 2002 survey (**Figure 4.27**).

4.28 Grade 9 and 10 students who report having used a condom the last time they had sexual intercourse, by gender (%)

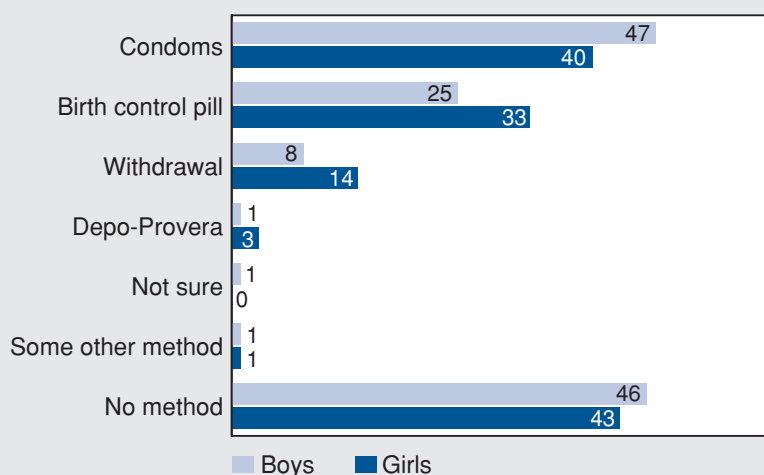
Four-fifths of boys in Grades 9 and 10 report using a condom the last time they had sexual intercourse (**Figure 4.28**). Fewer girls, however, report condom use at last sexual intercourse. More girls in Grade 9 report condom use (75%) than those in Grade 10 (69%).



4.29 Contraceptive measures used by sexually active Grade 9 students the last time they had sexual intercourse, by gender (%)



4.30 Contraceptive measures used by sexually active Grade 10 students the last time they had sexual intercourse, by gender (%)



Based on Grade 9 and 10 students' reports of the method of contraception they used the last time they had sexual intercourse, it is clear that condoms are the most popular contraceptive method of these young people (**Figures 4.29 and 4.30**). Interestingly, students' reports of using a condom the last time they had sexual intercourse are much lower (see Figure 4.28). It is possible that students' intentions for condom use are to protect themselves from infection rather than to prevent pregnancy.

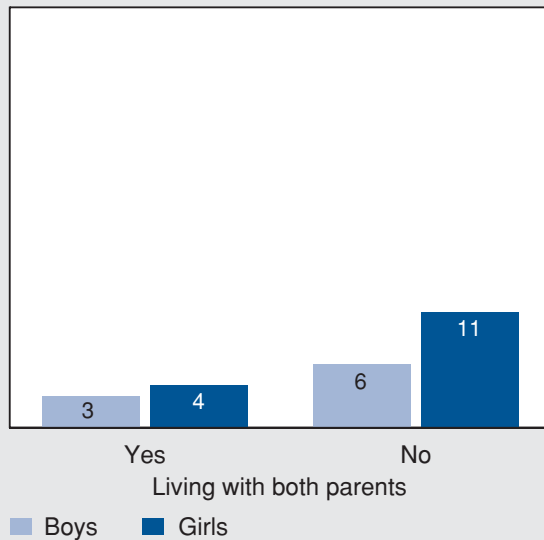
The use of birth control pills is the second contraceptive method reported by students. Thirty-six percent of Grade 9 girls and 33% of Grade 10 girls indicate using birth control pills, while 26% of Grade 9 boys and 25% of Grade 10 boys indicate that their female sexual partners use birth control pills.

It is interesting to note that, similar to the 2002 survey (not shown), withdrawal is still practiced by students in both grades, particularly by girls, despite education campaigns against this method. One in ten girls report withdrawal as the method of contraception the last time they had sexual intercourse (**Figures 4.29 and 4.30**).

Notably, between 37 and 46% of students in both grades report that no method was used specifically for contraceptive purposes.

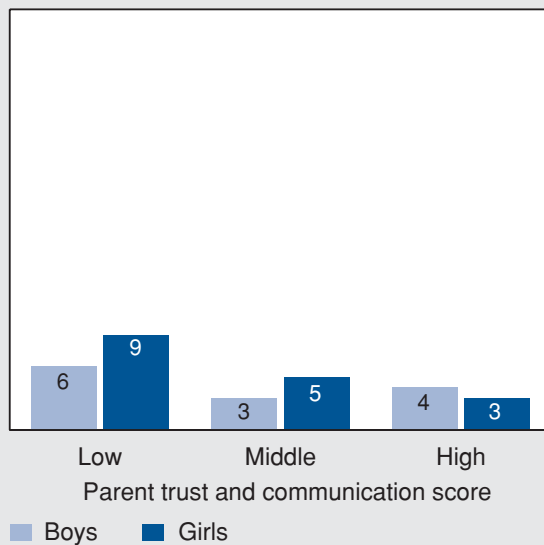
Health risk behaviours in context

4.31 Daily smoking and living with both parents, Grade 9 and 10 students by gender (%)

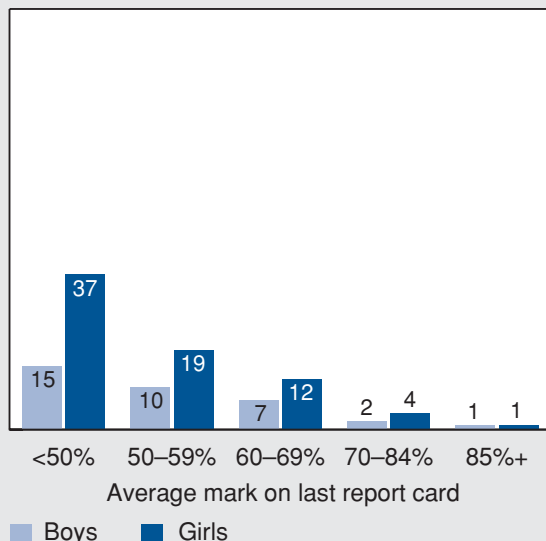


The association between daily smoking and living with both parents is more pronounced for girls than boys. Only 4% of girls who live with both parents smoke on a daily basis, compared to 11% of girls in other living arrangements (**Figure 4.31**).

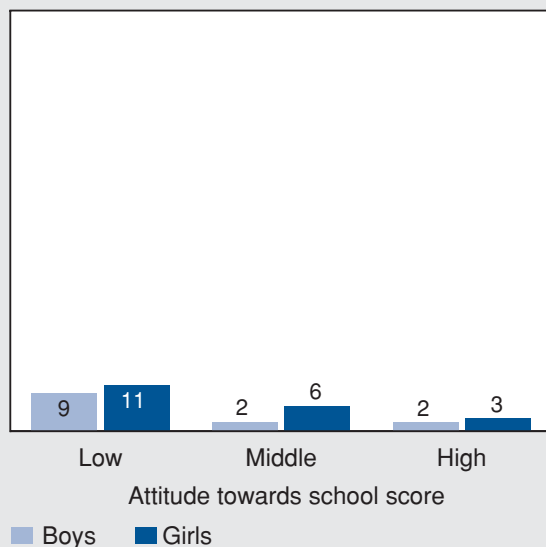
4.32 Daily smoking and parent trust and communication, Grade 9 and 10 students by gender (%)



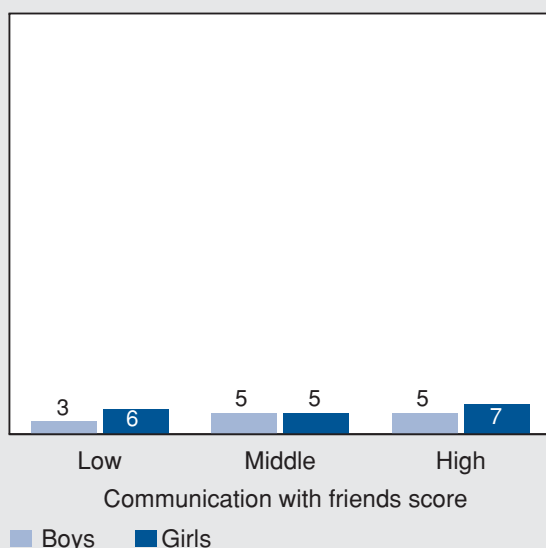
Parent trust and communication is significantly associated with daily smoking in girls, but not in boys (**Figure 4.32**). Girls with a low score on the parent trust and communication scale are 3 times as likely to smoke daily as girls with a high score on the scale.

4.33 Daily smoking and academic achievement, Grade 9 and 10 students by gender (%)

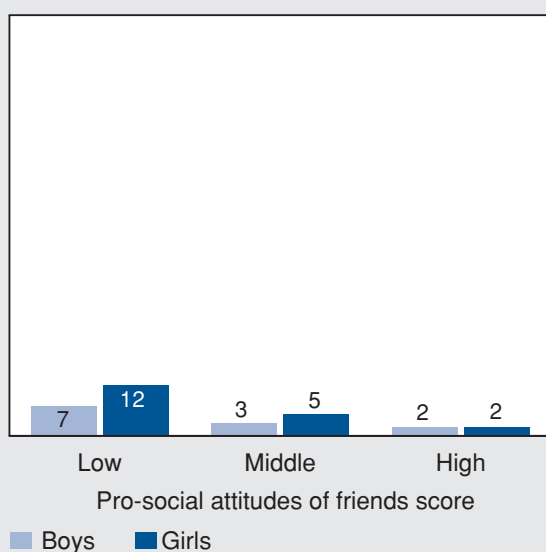
School-related variables are significantly associated with daily smoking. The relationship between academic achievement and daily smoking is more pronounced for girls than for boys, but with clear increases in percentage of students who smoke daily at each level of academic achievement in both genders (**Figure 4.33**).

4.34 Daily smoking and attitude towards school, Grade 9 and 10 students by gender (%)

While only 2% of boys and 3% of girls with a high score on the attitude towards school scale smoke daily (**Figure 4.34**), significantly more students (9% of boys and 11% of girls) with a low score on the same scale smoke daily.

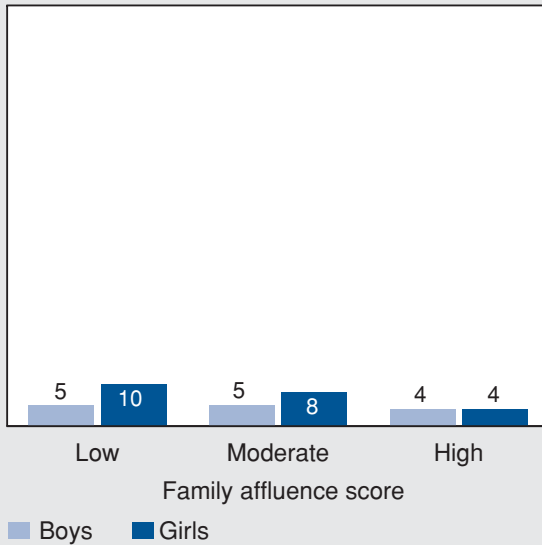
4.35 Daily smoking and communication with friends, Grade 9 and 10 students by gender (%)

Communication within one's peer group, which is a reflection of the degree of involvement with friends, does not seem to be important to daily smoking. This is apparent in **Figure 4.35**, which shows daily smoking to be on average the same for each level of the communication with friends scale.

4.36 Daily smoking and pro-social attitudes of friends, Grade 9 and 10 students by gender (%)

Young people within a peer group usually share a common social world, a common language, and common behaviours. Students whose friends have a high score on the pro-social attitudes of friends scale are less likely to smoke daily (2% for both boys and girls), compared to 7% of boys and 12% of girls whose friends have a low score of the scale (**Figure 4.36**).

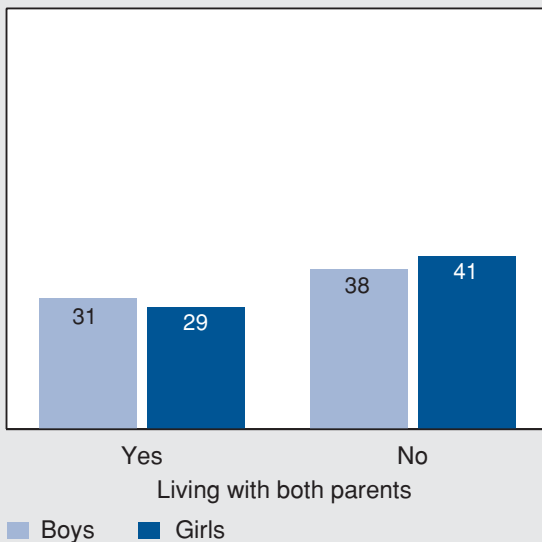
4.37 Daily smoking and family affluence, Grade 9 and 10 students by gender (%)



Family affluence is significantly associated with daily smoking for girls, but not for boys. Girls with low and moderate scores on the family affluence scale are twice as likely to smoke daily as girls with a high score on the scale (**Figure 4.37**).

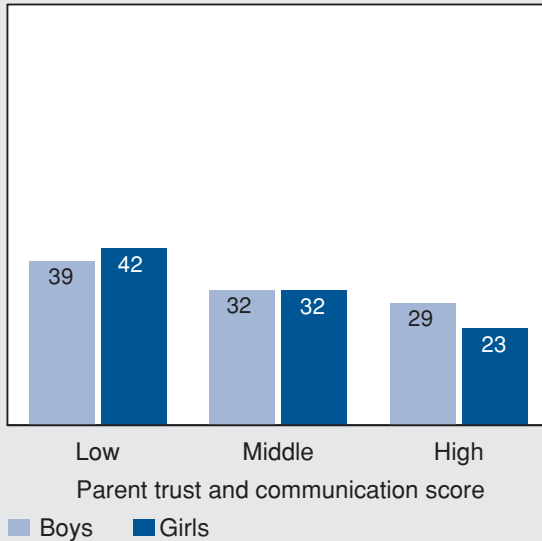


4.38 Getting drunk at least twice and living with both parents, Grade 9 and 10 students by gender (%)



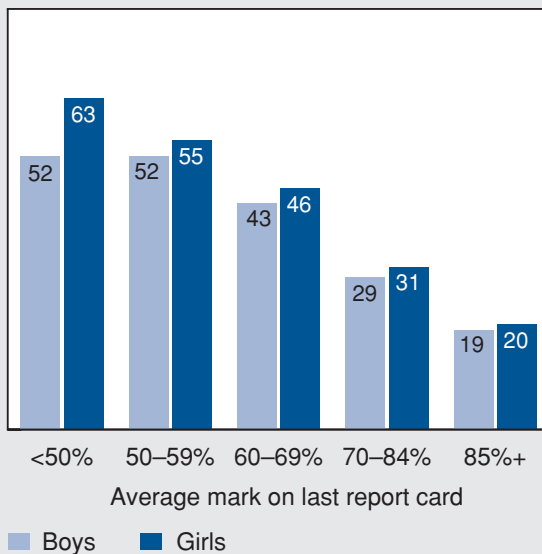
The association between living with both parents and getting drunk at least twice indicates that students who live with both parents are less likely to drink excessively. A third of students who live with both parents report getting drunk at least twice, compared to about two-fifths of those who do not live with both parents (**Figure 4.38**).

4.39 Getting drunk at least twice and parent trust and communication, Grade 9 and 10 students by gender (%)



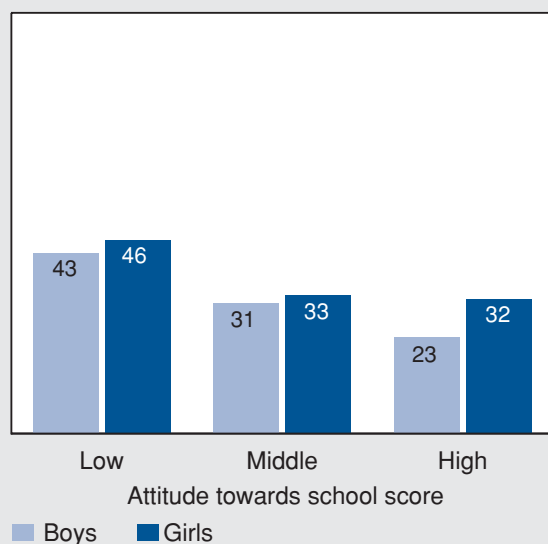
Students with a low score on the parent trust and communication scale are significantly more likely to report getting drunk more than twice (**Figure 4.39**). The influence is greater for girls. Among those with a low score on the parent trust and communication scale, 42% of girls report getting drunk at least twice, compared to 23% of those with a high score on the scale.

4.40 Getting drunk at least twice and academic achievement, Grade 9 and 10 students by gender (%)



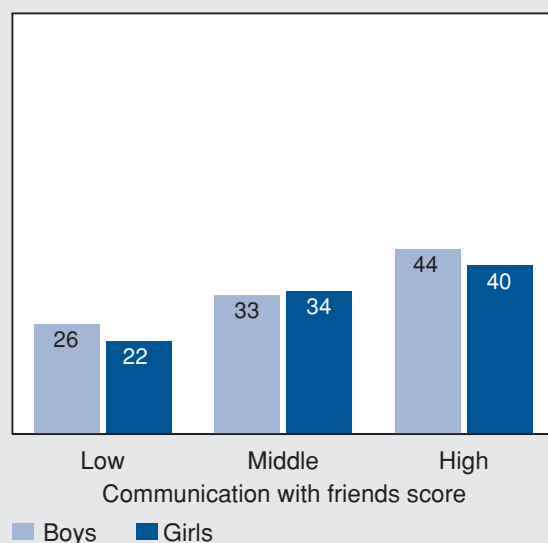
The association between academic achievement and getting drunk at least twice is quite strong, particularly for girls (**Figure 4.40**). For example, of those girls with marks of less than 50%, 63% report getting drunk at least twice, compared to 55% of girls with marks between 50 and 59%, and only 20% of girls with marks of 85% or higher.



4.41 Getting drunk at least twice and attitude towards school, Grade 9 and 10 students by gender (%)

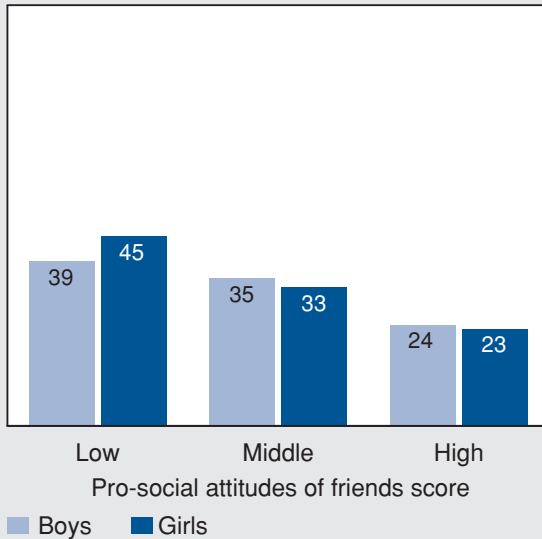
The extent to which school is perceived as providing a supportive environment for young people, based on their feelings of belonging and of school and teacher fairness, is significantly associated with getting drunk at least twice for both boys and girls.

Figure 4.41 shows that 43% of boys and 46% of girls with a low score on the attitude towards school scale report getting drunk at least twice, compared to 23% of boys and 32% of girls with a high score on the scale.

4.42 Getting drunk at least twice and communication with friends, Grade 9 and 10 students by gender (%)

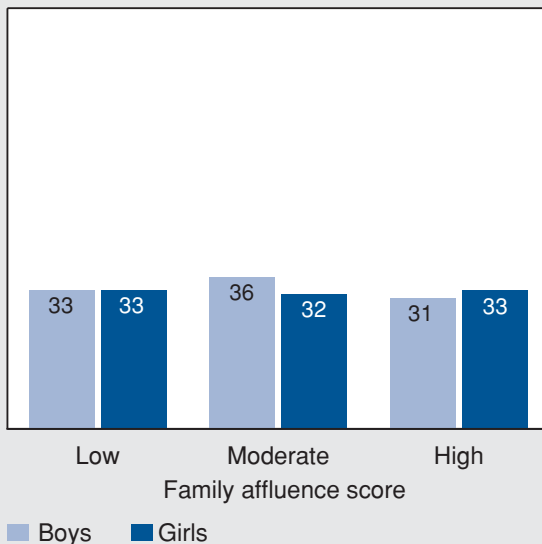
Unlike its lack of influence on daily smoking (see Figure 4.35), better communication with one's friends is significantly associated with binge drinking. This is apparent in **Figure 4.42**, showing that two-fifths of students with a high score on the communication with friends scale report getting drunk at least twice, compared to, on average, a quarter of students with a low score on the scale. This implies that students with good communication skills are more likely to report getting drunk at least twice than their counterparts whose communication with friends is poorer.

4.43 Getting drunk at least twice and pro-social attitudes of friends, Grade 9 and 10 students by gender (%)

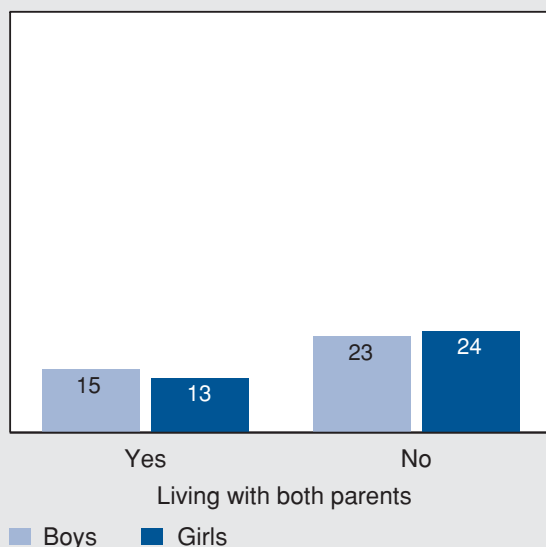


Similar to daily smoking (see Figure 4.36), students whose friends demonstrate high levels of pro-social attitudes are less likely to report getting drunk at least twice (24% of boys and 23% of girls), compared to 39% of boys and 45% of girls whose friends fall into the low third of the pro-social attitudes of friends scale (**Figure 4.43**).

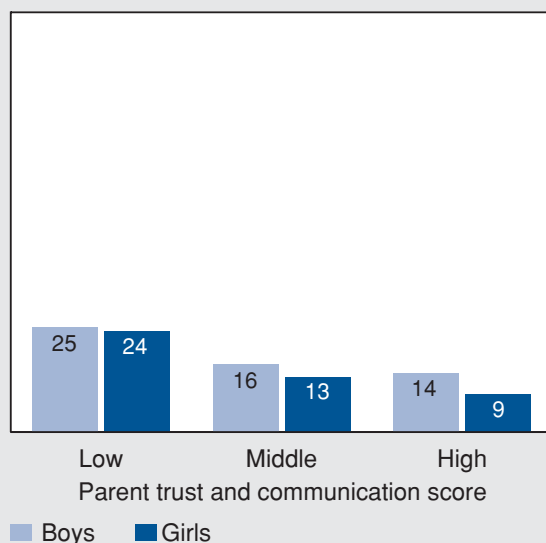
4.44 Getting drunk at least twice and family affluence, Grade 9 and 10 students by gender (%)



Family affluence is not associated with getting drunk at least twice for either girls or boys, indicating that students engage in binge drinking behaviour regardless of whether they are affluent or not (**Figure 4.44**).

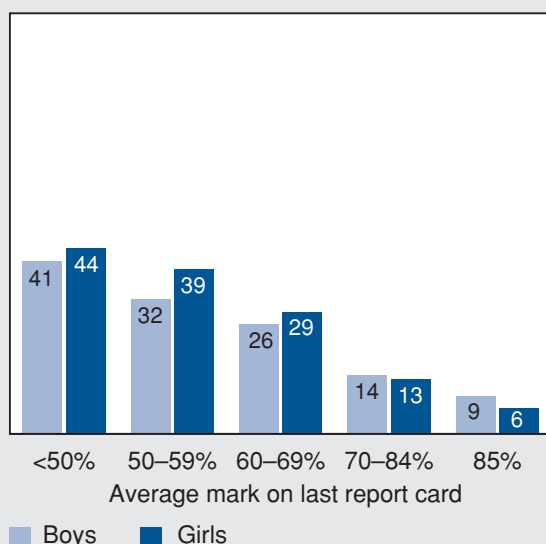
4.45 Smoking cannabis in the past 30 days and living with both parents, Grade 9 and 10 students by gender (%)

Students who live with both parents are less likely to use cannabis (15% of boys and 13% of girls), compared to one-quarter of those in other living arrangements (**Figure 4.45**).

4.46 Smoking cannabis in the past 30 days and parent trust and communication, Grade 9 and 10 students by gender (%)

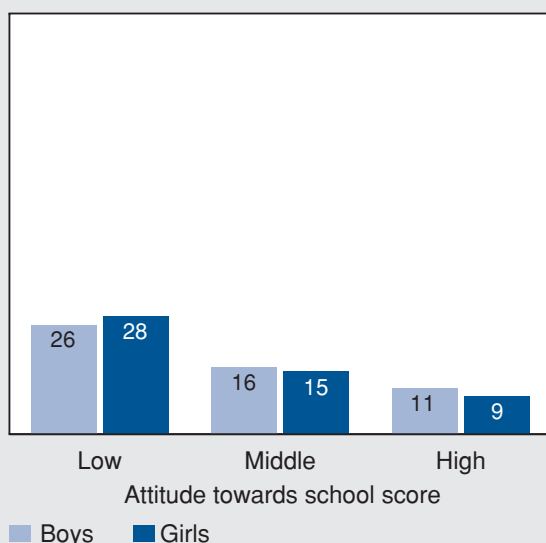
A poor relationship between students and their parents, as assessed by the parent trust and communication scale, is significantly associated with using cannabis in the past 30 days for both girls and boys (**Figure 4.46**).

4.47 Smoking cannabis in the past 30 days and academic achievement, Grade 9 and 10 students by gender (%)

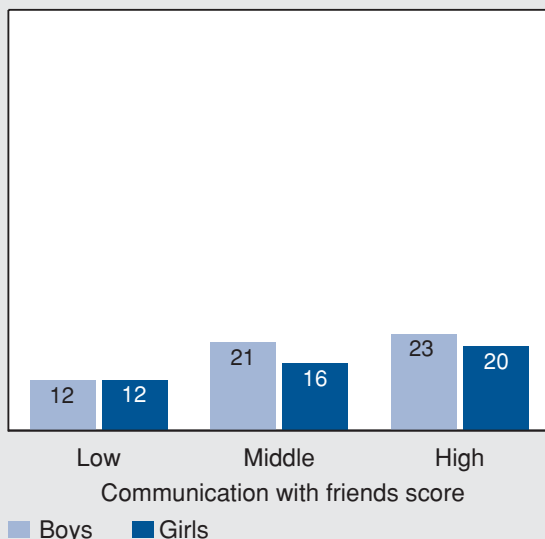


School-related variables are significantly associated with using cannabis in the past 30 days. An association between academic achievement and using cannabis in the past 30 days is apparent for both genders (**Figure 4.47**). Over two-fifths of students whose marks are less than 50% report using cannabis in the past 30 days, compared to fewer than a tenth of students whose marks are 85% or more.

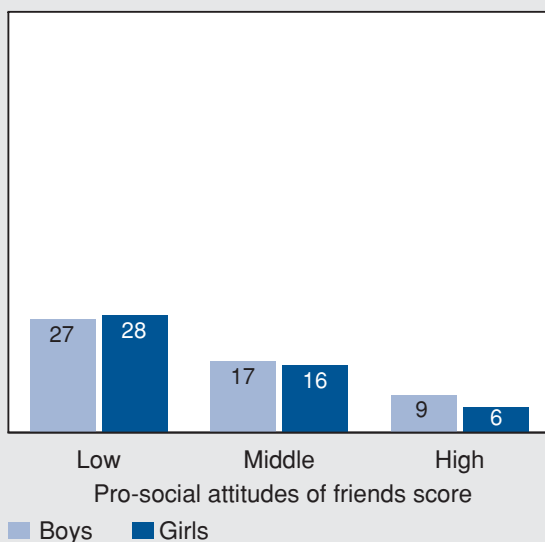
4.48 Smoking cannabis in the past 30 days and attitude towards school, Grade 9 and 10 students by gender (%)



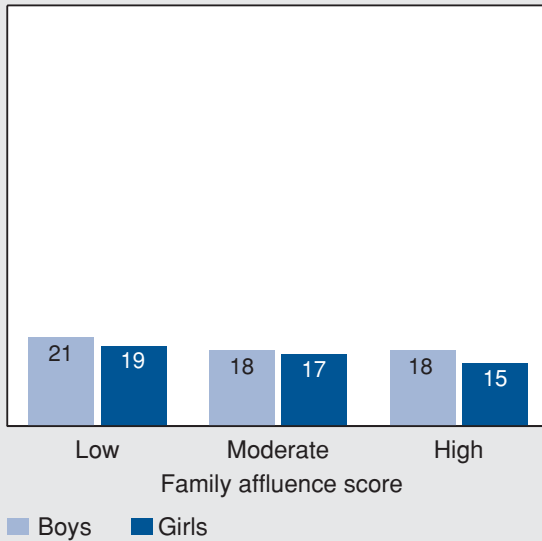
While only 11% of boys and 9% of girls with a high score on the attitude towards school scale report using cannabis in the past 30 days, significantly more students (26% of boys and 28% of girls) with a low score on the scale used cannabis (**Figure 4.48**).

4.49 Smoking cannabis in the past 30 days and communication with friends, Grade 9 and 10 students by gender (%)

Using cannabis in the past 30 days is clearly associated with better communication with friends. Just over a tenth of students with a low score on the communication with friends scale report using cannabis in the past 30 days, compared to over a fifth of students with a high score on the scale (**Figure 4.49**).

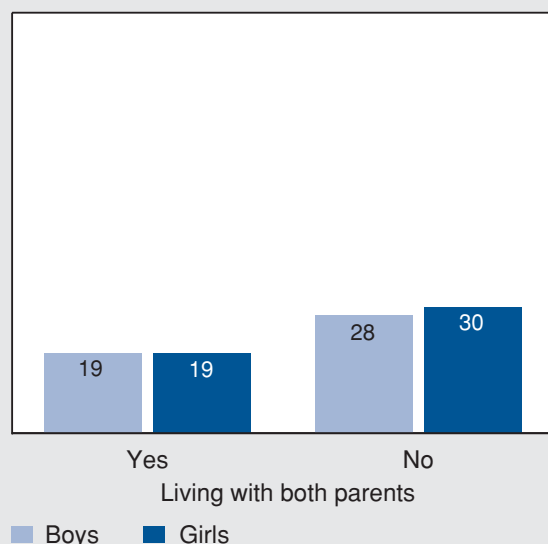
4.50 Smoking cannabis in the past 30 days and pro-social attitudes of friends, Grade 9 and 10 students by gender (%)

Similar to daily smoking and to getting drunk, students whose friends demonstrate a high level of pro-social attitudes are less likely to report using cannabis in the past 30 days (9% of boys and 6% of girls), compared to 27% of boys and 28% of girls whose friends demonstrate a low level of pro-social attitudes (**Figure 4.50**).

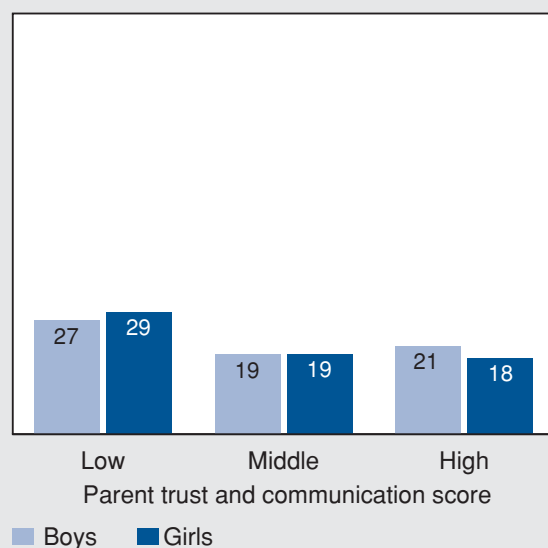
4.51 Smoking cannabis in the past 30 days and family affluence, Grade 9 and 10 students by gender (%)

Family affluence is not significantly associated with student use of cannabis in the past 30 days, with only slight variations across the three affluence scores (**Figure 4.51**).



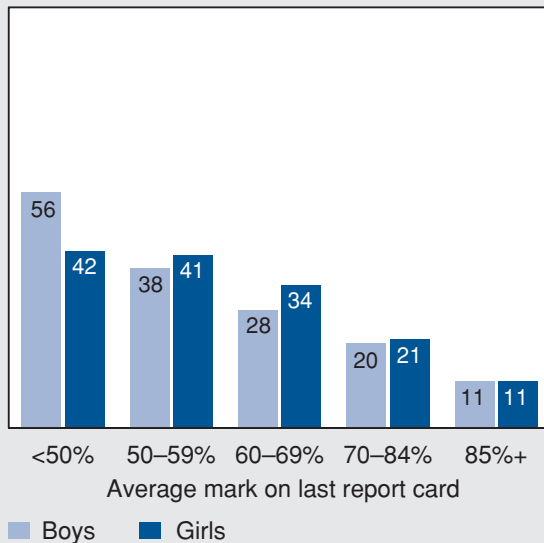
4.52 Having sexual intercourse and living with both parents, Grade 9 and 10 students by gender (%)

Examining **Figure 4.52**, it is clear that one-fifth of students who live with both parents report having had sexual intercourse, compared to one-third of those who do not live with both parents.

4.53 Having sexual intercourse and parent trust and communication, Grade 9 and 10 students by gender (%)

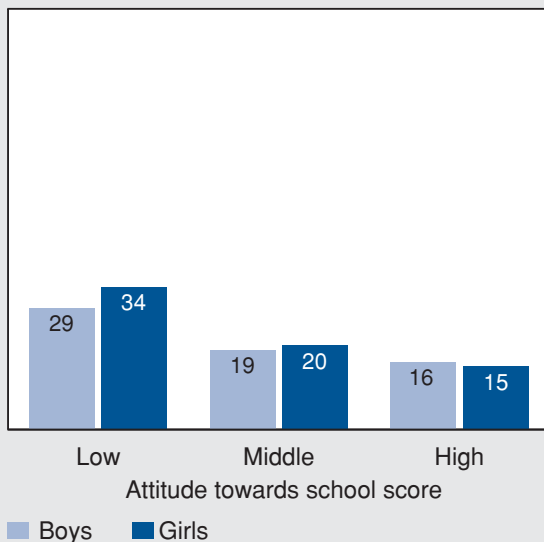
Also, 27% of boys and 29% of girls with a low score on the parent trust and communication scale report having sexual intercourse, compared to a fifth of boys and girls with a middle or high score on the scale (**Figure 4.53**).

4.54 Having sexual intercourse and academic achievement, Grade 9 and 10 students by gender (%)



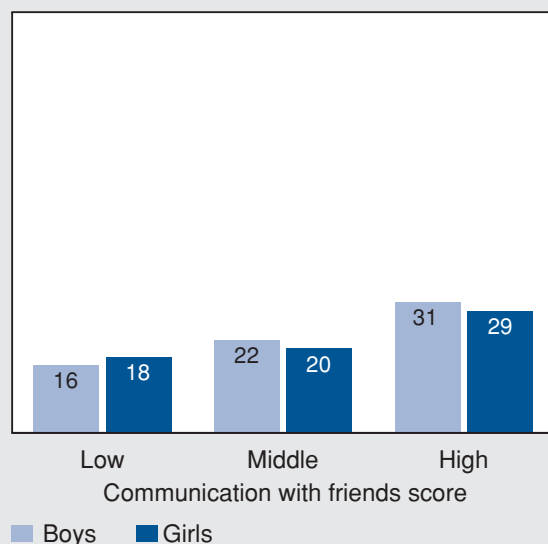
Again, the school context is strongly associated with adolescent risk behaviours. The association between academic achievement and having had sexual intercourse is significant for both boys and girls (**Figure 4.54**). Fifty-six percent of boys and 42% of girls whose marks are less than 50% report having had sexual intercourse, compared to a fifth of students whose marks are between 70 and 84%, and only 11% of students whose marks are 85% or higher.

4.55 Having sexual intercourse and attitude towards school, Grade 9 and 10 students by gender (%)



Twice as many boys and girls with a low score on the attitude towards school scale report having had sexual intercourse as those with a high score on the scale (**Figure 4.55**).

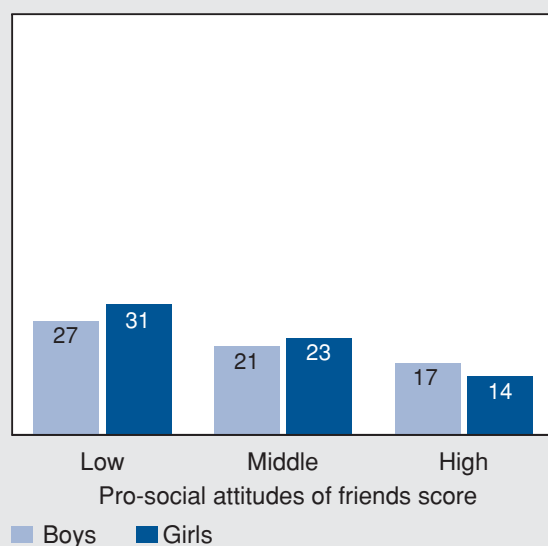
4.56 Having sexual intercourse and communication with friends, Grade 9 and 10 students by gender (%)



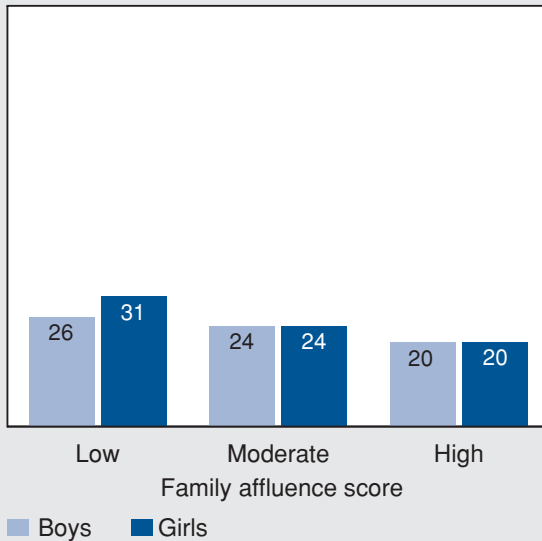
Similar to its influence on binge drinking and using cannabis, better communication within one's group of friends is significantly associated with having had sexual intercourse. A third of students with a high score on the communication with friends scale report having had sexual intercourse, compared to fewer than a fifth of students with a low score on the scale (**Figure 4.56**).

The influence of good communication with friends on alcohol and cannabis use and on sexual risk-taking is significant, although its influence on daily smoking is not.

4.57 Having sexual intercourse and pro-social attitudes of friends, Grade 9 and 10 students by gender (%)



The association between having had sexual intercourse and pro-social attitudes of friends is also clear (**Figure 4.57**). Students with a low score on the pro-social attitudes of friends scale are more likely to have had sexual intercourse (27% of boys and 31% of girls), compared to 17% of boys and 14% of girls with a high score on the same scale.

4.58 Having sexual intercourse and family affluence, Grade 9 and 10 students by gender (%)

Although higher family affluence is not significantly associated with daily smoking in boys, getting drunk at least twice (in both genders), and cannabis use in the past 30 days (in both genders), it is associated with having ever had sexual intercourse (**Figure 4.58**). Over a quarter of boys and over a third of girls with a low score on the family affluence scale have had sexual intercourse, compared to a fifth of those with a high score on the scale.



Summary

Daily smoking among both boys and girls has declined significantly, especially in Grade 10. This substantial decrease in smoking in the 2002 and 2006 surveys reflects the prevalent social disapproval and changes in attitude towards smoking. These have been precipitated by an increase in anti-smoking advertising campaigns targeting different age groups regarding the health risks of smoking, considerable increases in the price of cigarettes, limited availability of public spaces where smoking is permitted, and also the adverse publicity suffered by the tobacco industry.

Although still relatively high, consumption of beer, wine, liquor, and spirits has declined. Consumption of coolers might be replacing more traditional alcoholic drinks, although fewer than 10% of students report drinking coolers once a week or more. The proportion of students getting “really drunk” twice or more has declined slightly from 2002 to 2006 among Grade 10 students, yet almost two-fifths of students report getting “really drunk” twice or more.

The proportion of boys in Grade 10 who report ever trying cannabis has dropped significantly since the 2002 survey. Heavier use of cannabis (3 times or more in the past 30 days) among students in Grades 9 and 10 is quite low, although girls and boys are equally involved.

A substantial number of drugs show a decline in use. Although some of these declines are slight, often confined to one grade or one gender, in most cases they represent a continuation of earlier declines measured by the HBSC surveys. Only ecstasy and medical drugs (used to get stoned) show increases in use in 2006, and only for girls. Of particular concern is that medical drugs, which may include cough suppressants and other cough and cold medications, are available over the counter and young people may not be fully aware of the dangers of using these widely-available medications which they may perceive as harmless.

Magic mushrooms were surveyed by the HBSC study for the first time in 2006 and their use is reported by 7% of students in Grade 9 and by 9% of students in Grade 10.



The proportion of sexually active students has not changed since the last HBSC survey in 2002. One fifth of students in Grade 9 and a quarter of students in Grade 10 report having had sexual intercourse. Condoms are the contraceptive method of choice for young people in Grades 9 and 10. With the exception of girls in Grade 10, reports of recent condom use for contraceptive purposes are significantly lower than general reports of recent condom use, implying that students' condom use is intended to protect them against infection, rather than to prevent pregnancy. The use of birth control pills is the second method of contraceptive choice for students. Withdrawal is still reported as a contraceptive practice by students in both grades, particularly by girls in Grade 10. Over one-third of students in Grade 9 and almost half of students in Grade 10 indicate not using any measure to prevent pregnancy.

Examining the social contexts of the home, peer groups, and socio-economic conditions on risk behaviour is important. The role that schools play in creating or maintaining risk behaviours is not very clear. Schools that are supportive and nurture a sense of belonging among students can lessen their engagement in risk behaviours. On the other hand, if students feel disengaged and alienated at their schools, engagement in risk behaviours with friends, particularly smoking, may become socially functional and symbolic of peer-group belonging.²

These findings suggest that youth behaviours, such as daily smoking, binge drinking, using cannabis, and having sex without proper protection, continue to be health risks.

References

- 1 Statistics Canada (2006). *Canadian Community Health Survey: New data on smoking and on diabetes*. <http://www.statcan.ca/Daily/English/060613/d060613a.htm>.
- 2 Connop, H., and A.J.C. King (1999). *Adolescent Smoking Initiation and Maintenance: Report of a Pilot Study of School Smoking Zones*. Kingston, Ontario: Queen's University, Social Program Evaluation Group.

5

Bullying and Fighting

by Wendy M. Craig and
Heather McCuaig Edge

What is bullying?

Bullying is a relationship problem. It is a form of aggressive behaviour imposed from a position of power. Young people who bully always have more power than the peers they victimize. Power can be achieved through physical, psychological, social, or systemic advantage, or by knowing another's vulnerability (e.g., obesity, learning problem, sexual orientation, family background) and using that knowledge to cause distress. With each repeated bullying incident, the young person who is bullying increases in power and the young person who is being victimized loses power.



Fighting and weapon carrying

Fighting and weapon carrying are also behaviours that put young people at significant risk for harm. Fighting can often lead to physical injuries requiring medical treatment. Weapon carrying increases the possibility of more severe – even life-threatening – injuries to both the weapon carrier and others.



*Data on injuries
due to fighting and violence
are presented in Chapter 6.*

Why does bullying matter?

Lessons of power and aggression learned through childhood bullying can lead to sexual harassment and dating aggression and may later extend to workplace harassment, as well as marital, child, and elder abuse perpetrated by adults.¹ Victimized youths may also carry the hurt and fear from bullying forward into adult relationships. Perhaps the highest costs arise from the destructive dynamics found in bullying relationships, because relationships are the foundation for healthy development and well-being throughout the lifespan. Furthermore, research on bullying has identified an intergenerational link: parents who bully in childhood are likely to have children who also bully their peers.²

Being safe in relationships is a fundamental human right. Every child and youth has the right to be safe and free from involvement in bullying. Bullying affects the safety and welfare of children and youth who are bullied, those who bully others, and those who know it is going on. Victimized young people are at risk for anxiety, depression, and somatic complaints.³ There is also reason to be concerned for young people who perpetrate bullying and harassment: research has shown that they are at risk for long-term problems such as anti-social behaviour and substance use.^{4,5} To prevent these negative long-term outcomes, we need to support youths' healthy development and protect their welfare. This requirement is identified in the United Nations Convention on the Rights of the Child.⁶

How are bullying, fighting, and weapon carrying measured by the HBSC study?

To assess bullying and victimization, students were asked how many times they had been bullied at school in the past couple of months and how often they had taken part in bullying another student(s) at school during the same time period. Possible responses were never, once or twice, 2 or 3 times a month, about once a week, or several times a week. Those who reported being bullied at least once in this time period were classified as victims of bullying. Those who reported taking part in bullying at least once in this time period were classified as bullies. Those who reported both experiences were classified as bully-victims. There were also questions about the types of victimization experienced.

To measure fighting and weapon carrying, students were asked about the number of times they were in a physical fight in the past 12 months and with whom, and the number of days in the past 30 days on which they carried a weapon, such as a gun, knife, or club, and what type of weapon it was.

Types of victimization surveyed:

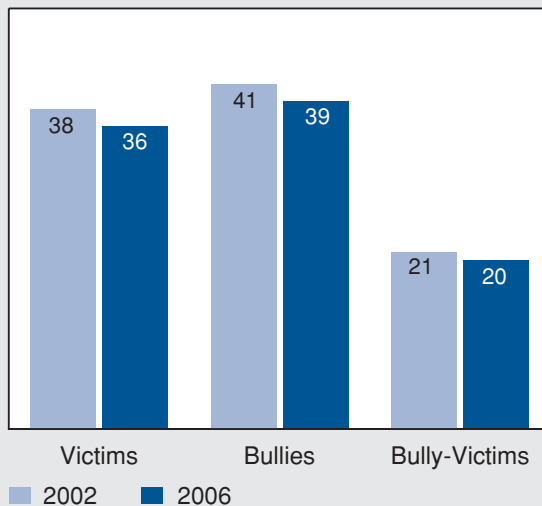
- 1) physical: have you been hit, kicked, pushed, shoved around, or locked indoors?
- 2) verbal: have you been called mean names, made fun of, or teased in a hurtful way?
- 3) indirect: have you been left out of things on purpose, excluded from a group of friends, or completely ignored?
- 4) sexual harassment: other students made sexual jokes, comments, or gestures to me
- 5) racial: other students made fun of my race or colour
- 6) religious: other students made fun of my religion
- 7) electronic: have you been teased using a computer or e-mail messages or a mobile phone?

What are we reporting on in this chapter?

We report on the percentage of students involved in the three categories of bullying (victims, bullies, and bully-victims) for 2002 and 2006, the patterns in kinds of victimization, the number of fights and the targets of fights, the types of weapons carried by boys and girls, and bullying in relation to the home, school, peer, and socio-economic contexts.

The size of the bullying problem in Canada

5.1 Involvement of students in the three categories of bullying, in 2002 and 2006 (%)



In an analysis of the HBSC data from the 2002 cycle, researchers discovered that Canada ranked a dismal 26th and 27th highest out of 35 countries in terms of proportion of young people reporting involvement in bullying and victimization respectively.⁷

Figure 5.1 represents the overall prevalence of Canadian students with involvement in bullying in 2002 compared to 2006. The trend is towards a very slight decrease in reported bullying involvement since the previous survey.



5.2 Students who are victimized and do not bully others, by grade, gender, and frequency (%)

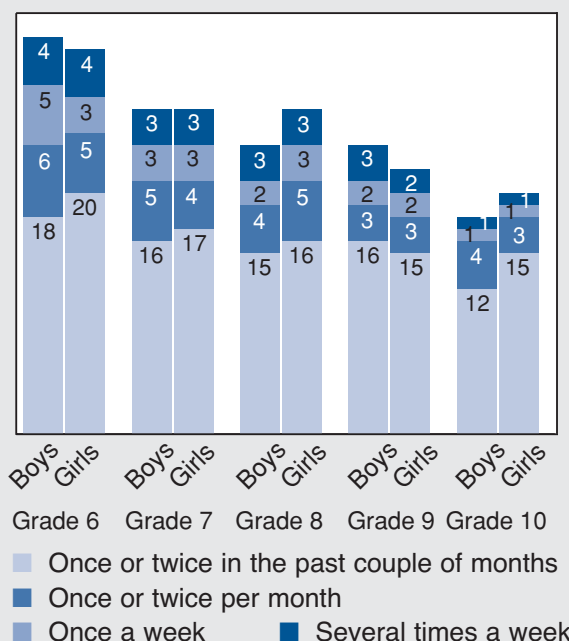
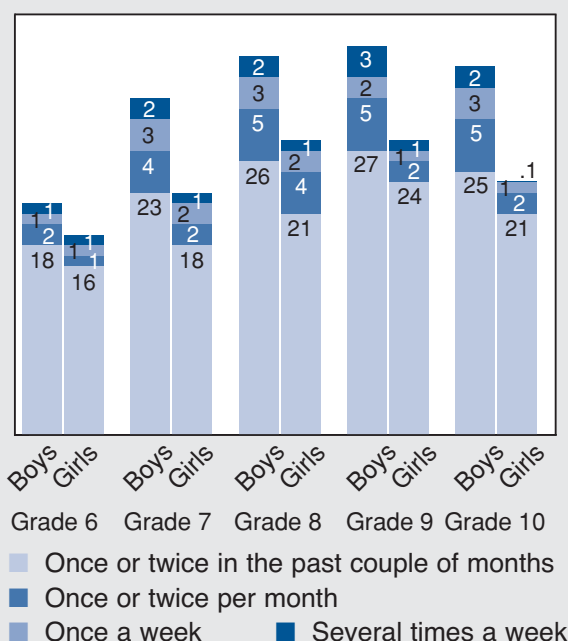


Figure 5.2 presents a general decline in reported victimization from Grade 6 to 10. A fairly consistent proportion of students across grades report being victimized about once or twice in the past couple of months. Between 2 and 9% of students report being victimized once a week or more.

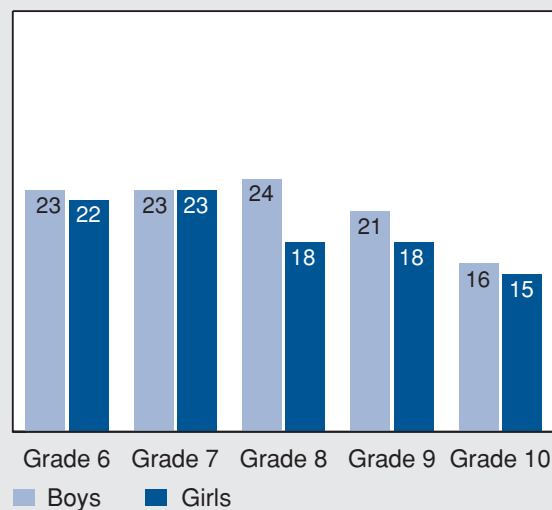
5.3 Students who bully others and are not victimized, by grade, gender, and frequency (%)



Boys report bullying others significantly more than do girls (**Figure 5.3**). For boys, the behaviour peaks in Grade 9 at 37%; for girls, in Grades 8 and 9 at 28%. The majority of students indicate that they engage in bullying behaviour infrequently. A small minority (1 to 5%) of students, however, report bullying others regularly.

A substantial number of students in the HBSC sample report that they are both bullies and victims (**Figure 5.4**). In Grades 8 and 9, boys report involvement in both bullying and victimization more often than girls.

5.4 Bully-victims, by grade and gender (%)

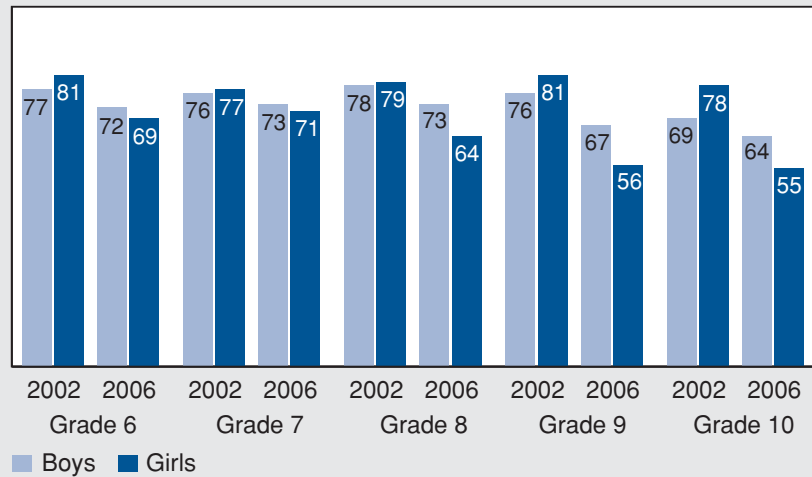


How young people are victimized

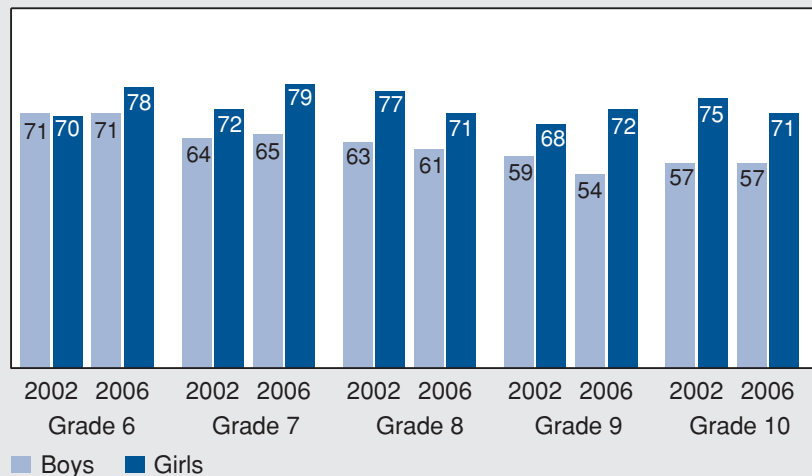
Bullying takes many forms, with the two most common (from 54% to 81%) being teasing (**Figure 5.5**) and indirect bullying such as excluding or spreading lies about the victim (**Figure 5.6**). Significantly more boys than girls report being teased in 2006, especially in older grades; but, overall, the 2006 rates are lower than in 2002 (**Figure 5.5**). In contrast, more girls report being victims of indirect bullying (**Figure 5.6**).

Figures 5.5 to 5.11 display data for those students who report being victims or bully-victims.

5.5 Teasing in victimized students, by grade and gender in 2002 and 2006 (%)



5.6 Indirect bullying in victimized students, by grade and gender in 2002 and 2006 (%)



5.7 Physical bullying in victimized students, by grade and gender in 2002 and 2006 (%)

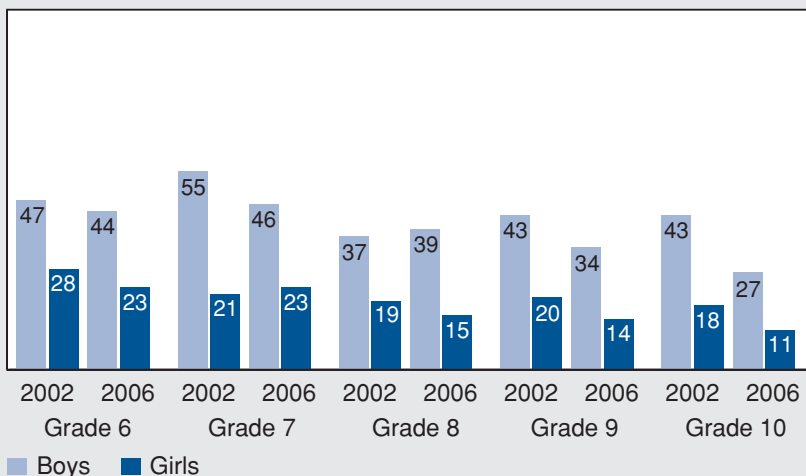
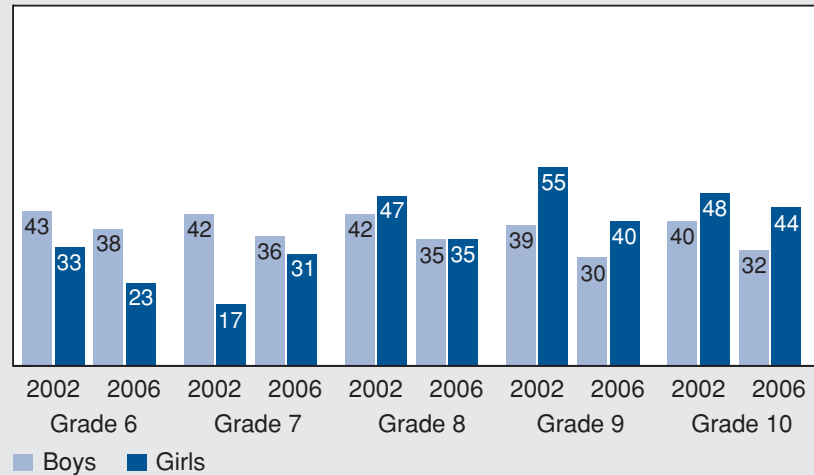


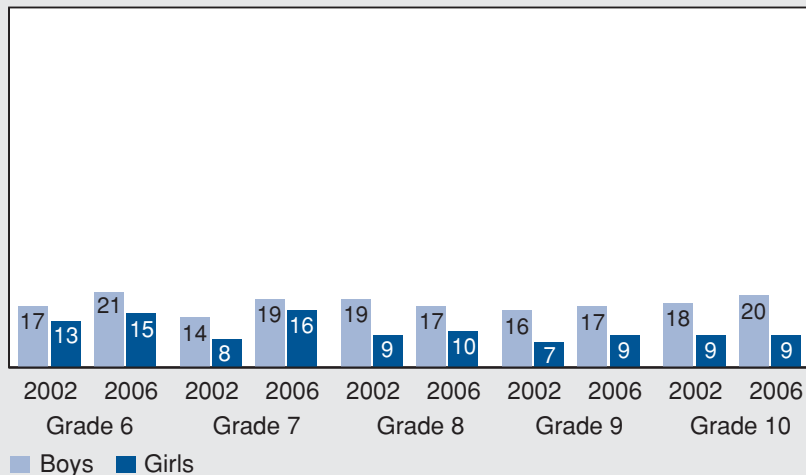
Figure 5.7 shows that significantly more boys report physical victimization (up to 46%) in 2006, although these prevalence rates are lower than the 2002 results (when physical victimization reached as high as 55%).

5.8 Sexual harassment in victimized students, by grade and gender in 2002 and 2006 (%)

Reports of sexual harassment increase with age for girls, but decrease with age for boys, with similar levels of harassment for both genders at Grade 8 (**Figure 5.8**). Overall, the prevalence of reported sexual harassment in 2006 declined from 2002.

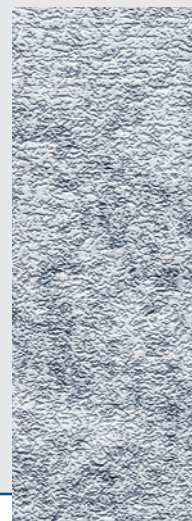
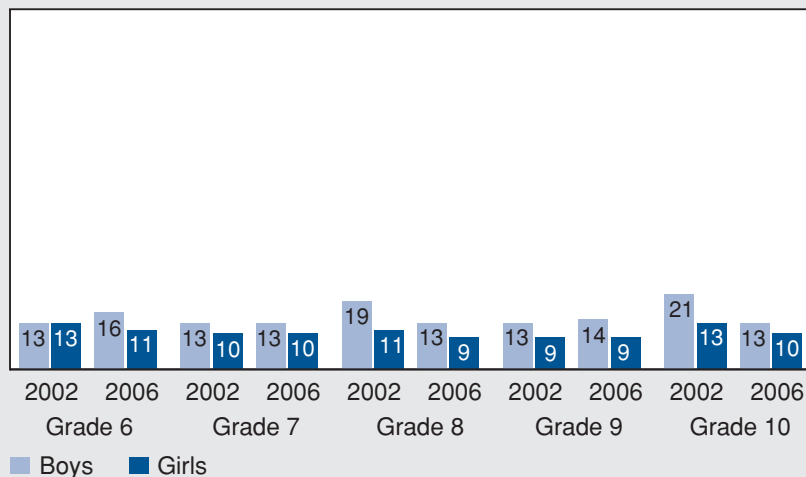


5.9 Racial bullying in victimized students, by grade and gender in 2002 and 2006 (%)

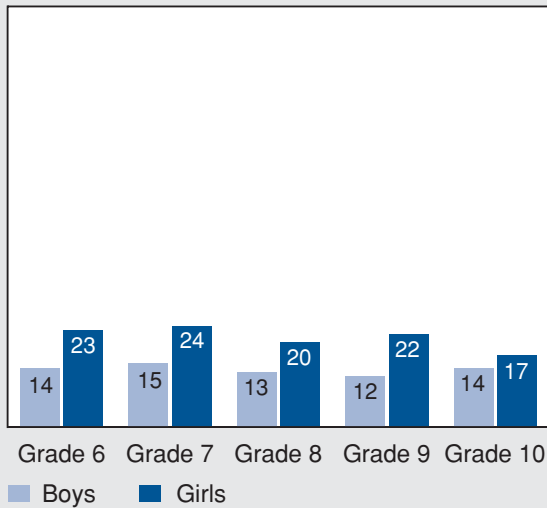


Bullying because of race and religion occurs less frequently than all the other types of bullying (**Figures 5.9** and **5.10**), ranging from 7 to 21%. Boys in all grades report more racial harassment and religious bullying than girls. There is a slight increase in reports of racial bullying from 2002 to 2006 and a slight decrease in reported religious bullying.

5.10 Religious bullying in victimized students, by grade and gender in 2002 and 2006 (%)



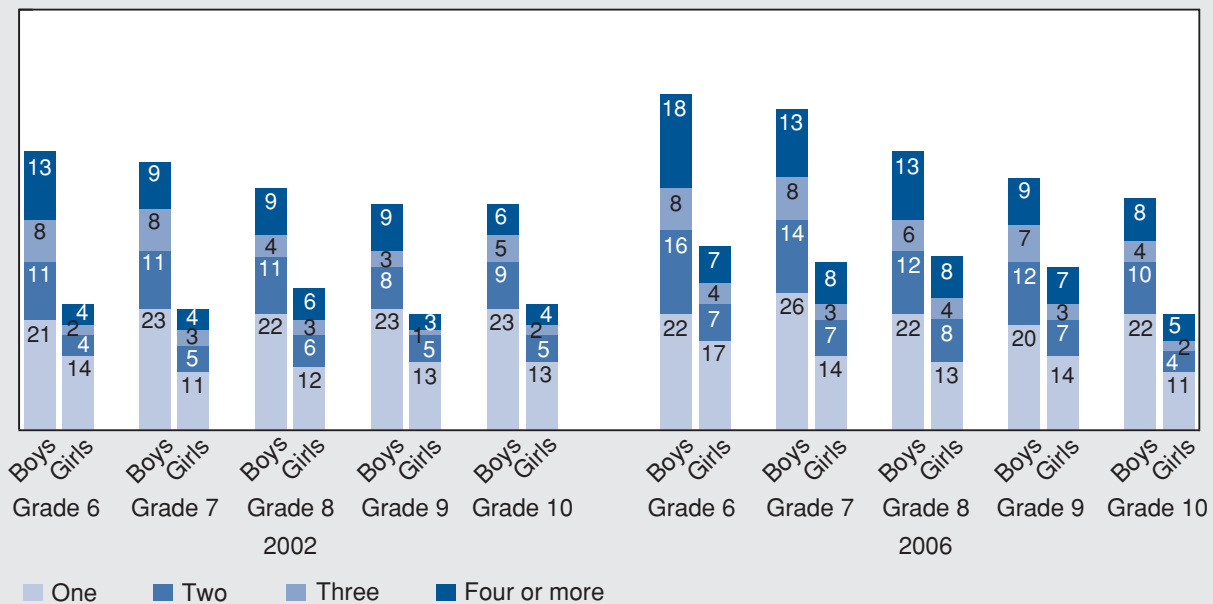
5.11 Electronic bullying in victimized students, by grade and gender (%)



This survey cycle was the first time that the HBSC study asked students about electronic or cyber bullying, including computer postings, emails, digital photos, or cell phone harassment. Girls report that they experience more cyber bullying than boys in all grades (**Figure 5.11**).

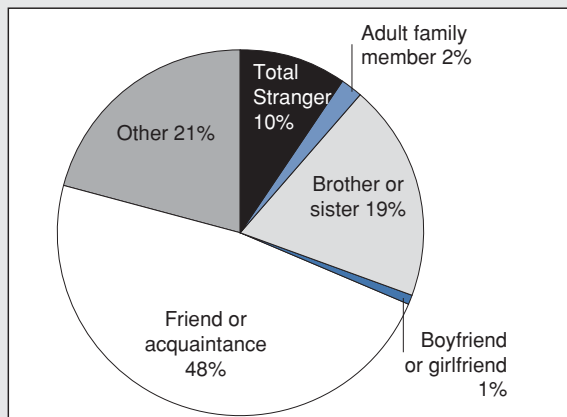
Fighting and weapon carrying

5.12 Number of physical fights in the past 12 months, by grade and gender in 2002 and 2006 (%)

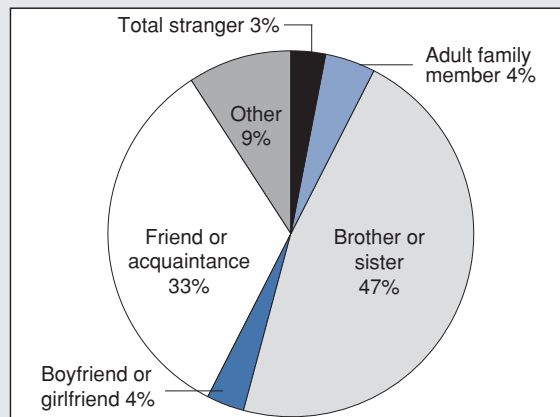


Physical fighting is an extreme form of aggression and merits serious attention. **Figure 5.12** shows that, compared to 2002, students are more involved in physical fights. Significantly more boys than girls in all grades report physical fighting behaviour. For boys, fighting behaviour decreases with age, while girls' fighting is more consistent across grades.

5.13 Targets of boys' physical fights



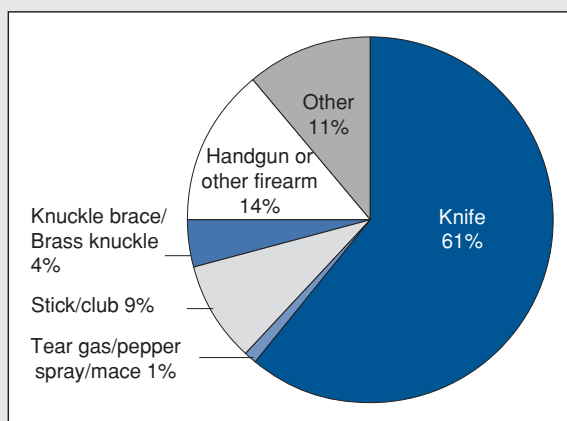
5.14 Targets of girls' physical fights



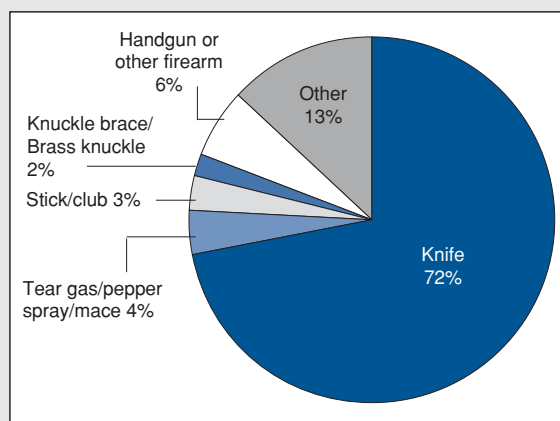
Almost one-half of boys indicate that the target of their physical fights is most often a friend or acquaintance (**Figure 5.13**), while girls indicate that they are most likely to fight with a sibling (**Figure 5.14**). It may be that girls are more likely to be aggressive within the confines of intimate family relationships or that it is more acceptable to fight within these relationships. Older students, especially boys, are more likely to fight with strangers, which could put them at risk for serious injury (not shown).

The proportion of students who carry weapons is similar to that for fighting behaviour. Seventeen percent of boys and 4% of girls report carrying weapons in the past 30 days (not shown).

5.15 Types of weapons – Boys



5.16 Types of weapons – Girls



As illustrated in **Figures 5.15** and **5.16**, those students who carry weapons most often carry knives. Fourteen percent of boys who carry weapons report that they carry handguns or other firearms. More girls who carry weapons carry tear gas or pepper spray. The potential risk for harm and escalating violence is of extreme concern with the increased availability and presence of weapons.

Bullying in context

5.17 Involvement in bullying and living with both parents (%)

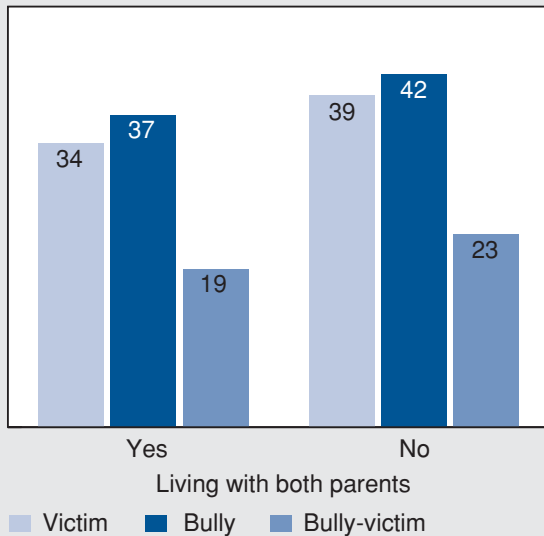
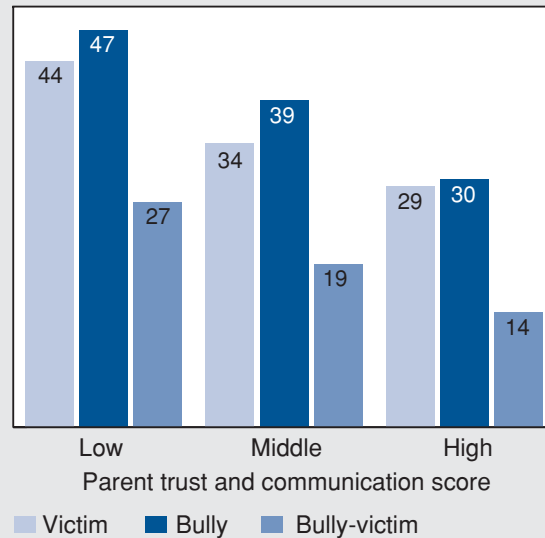


Figure 5.17 indicates that young people who live with both parents are less likely overall to be involved in bullying in all three categories.

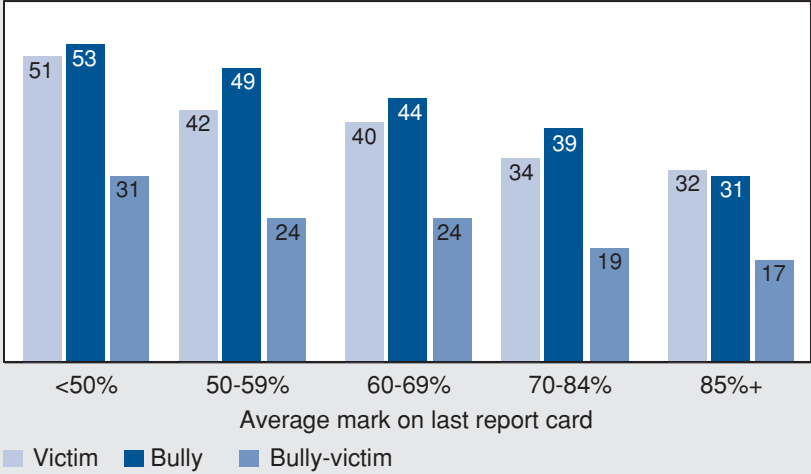
5.18 Involvement in bullying and parent trust and communication (%)



There are also significant linkages between relationships in the family and involvement in bullying, as indicated in **Figure 5.18**. Young people with lower scores on the parent trust and communication scale are more involved as victims, bullies, and bully-victims.



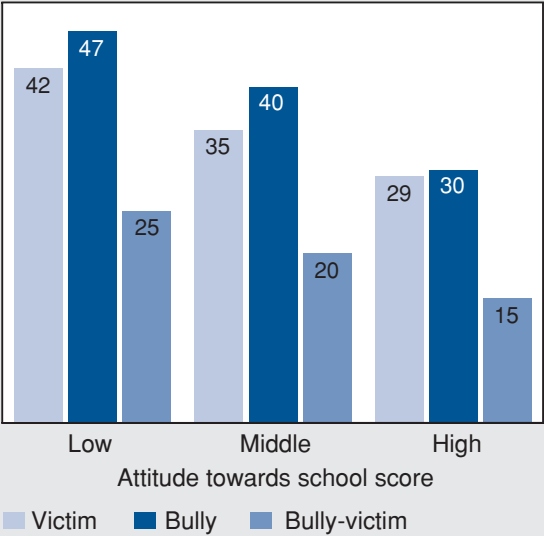
5.19 Involvement in bullying and academic achievement (%)

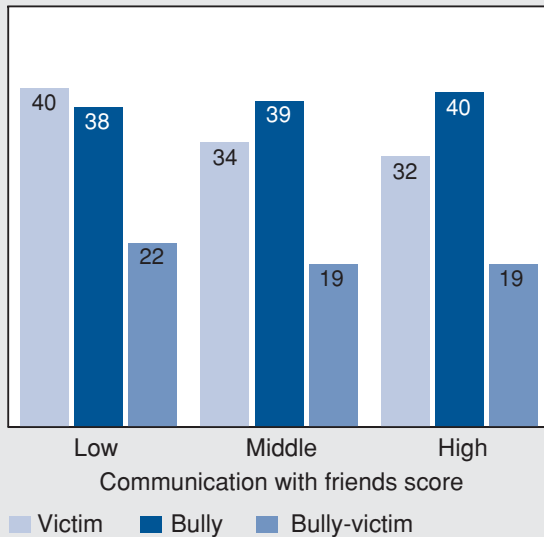
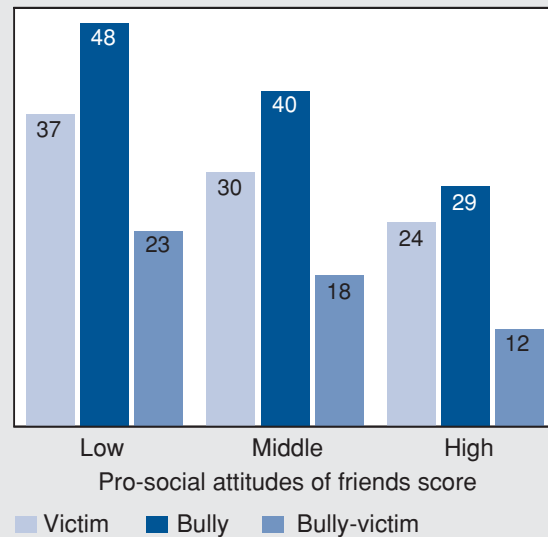


Young people who report lower academic achievement levels or who report negative feelings about the school environment, based on the attitude towards school scale, are more likely to be involved in bullying (Figures 5.19 and 5.20).



5.20 Involvement in bullying and attitude towards school (%)



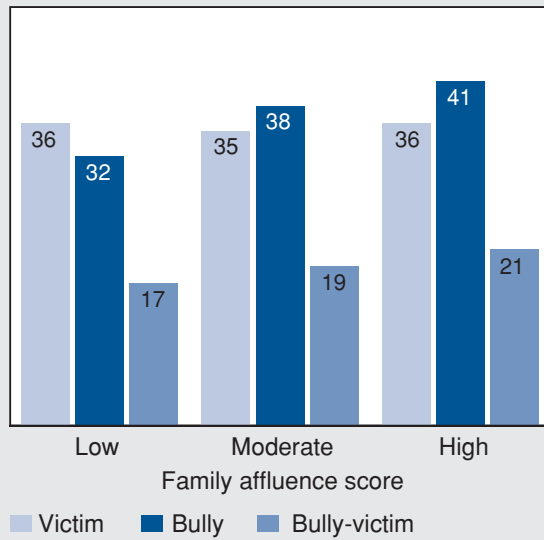
5.21 Involvement in bullying and communication with friends (%)**5.22 Involvement in bullying and pro-social attitudes of friends, Grade 9 and 10 students (%)**

Notably, there are mixed results regarding the peer context and bullying. Middle to high level of communication with friends is associated with lower chances of being a victim; for example, 32% of those with a high score on the communication with friends scale are victims, compared to 40% of those with a low score (**Figure 5.21**). Quality of communication with friends does not, however, impact on being a bully or bully-victim.

In contrast, **Figure 5.22** shows a protective pattern of higher scores on the pro-social attitudes of friends scale, suggesting that young people who report having friends with higher levels of pro-social attitudes are much less likely to be involved in all three categories of bullying.

Taken together, **Figures 5.21** and **5.22** suggest that the attitudes of friends are more consistently important in bullying than their level of communication. Having a low communication with friends score is related to being a victim, but not to being a bully.



5.23 Involvement in bullying and family affluence (%)

Family affluence does not appear to affect whether young people are victimized (**Figure 5.23**). In contrast, young people with higher scores on the family affluence scale are more likely to be bullies.



Summary

There are several important messages from this examination of bullying and fighting behaviour. First, bullying remains a significant problem in Canada, with an alarming proportion of young people reporting involvement in bullying either as the aggressor, victim, or both. Since 2002, most forms of bullying have decreased, although racial harassment of both boys and girls has increased, especially in primary school grades. The way that children and youth are victimized differs by gender. Boys are more likely to be victimized by physical and verbal bullying, whereas girls are more likely to be victimized by indirect and cyber bullying. Sexual harassment is higher for boys than girls in Grades 6 and 7, while the opposite is true in Grades 9 and 10.

Fighting behaviour as reported by young people has increased since 2002, especially in lower grades. Although more boys report fighting than girls, there are also notable differences in whom they fight with. For example, boys are more likely to fight with strangers, whereas girls are more likely to fight with those they know.

Across all categories of bullying, there are clear contextual associations with problems at home, at school, and in the peer group. Taken together, these findings highlight the need to take significant broad-based actions to address this public health problem of bullying and violence. Our current efforts do not suffice, as the problems are not diminishing sufficiently with time.

If we are to be effective in addressing these problems, interventions need to take a systemic approach and be designed to support young people in all the contexts in which they live, work, and play. Through designing interventions that go beyond the school and actively involve families and communities, we may be able to create environments that are more supportive of young people involved in bullying.



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- 5 Olweus, D. (1991). Bully/victim problems among school children: Some basic facts and effects of a school-based intervention program. In D. Pepler and K. Rubin (eds.), *The Development and Treatment of Childhood Aggression*, pp. 411-448. Hillsdale, NJ: Erlbaum.
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6

Injury and Physical Trauma

by William Pickett

What is injury?

Injury is defined as any physical harm to the body caused typically by an external force. Causes of injury include physical forces, such as motor vehicles or collisions, and chemical and thermal forces that lead to burns, such as fire or hot substances.



What is meant by physical trauma?

Physical trauma refers to injuries with a certain threshold of severity. Thresholds used by researchers to rate the seriousness of youth injury include need for medical treatment, admission to hospital overnight, and – most dramatically – death. Doctors often talk about “trauma systems” when referring to extensive hospital-based medical care for major injuries in young people.

Why do injury and physical trauma matter?

There are few young people in our world who do not feel the impact of injuries in their lives. Injuries that happen to young people can lead to a great deal of pain and suffering and, worse, to permanent disability and even death. Injuries are also costly to society in terms of health care expenditures and time lost from productive activities for both adolescents and their caregivers.

In Canada, once children survive through their infant years, injury becomes the number one threat to their health and well-being.

How is injury measured by the HBSC study?

The 2006 survey asked every participating student about the occurrence of one or more physical injuries requiring medical attention during the past 12 months. One year represents the standard time period over which it is believed young people can recall their experiences fairly accurately.

Detailed descriptions were also collected about the most serious injury reported by each young person, including physical environment (where the injury happened), activity (how it happened), whether the activity was with an organized league or club, medical treatment (where the injury was treated and whether significant treatment was required), and missed days of school.

A serious physical injury is defined by the HBSC study as one requiring significant medical treatment, specifically casting, stitches, surgery, or hospital admission.

The HBSC survey did not include a question specifically about physical trauma cases. Instead, young people were asked about injuries that required a cast, stitches, surgery, or staying in a hospital overnight. These more significant forms of medical treatment were used to signal “serious” injuries.

What are we reporting on in this chapter?

In this chapter, we report on the percentage of students who experience at least one injury in a year, on those who experience multiple injuries, and on the seriousness of injuries. Time lost at school or for other productive activities is also reported, including data from three previous survey cycles, as well as total number of days missed in 12 months per 1000 students. We also indicate the activities during which injuries occurred, the percentage of injuries occurring during organized vs. informal activities, and locations of injury, as well as location and significance of any treatment received.

We examine injury in relation to the seven social context measures: living with both parents, parent trust and communication, academic achievement, attitude towards school, communication with friends, pro-social attitudes of friends, and family affluence.



The size of the injury problem in Canada

6.1 Students reporting an injury during the past 12 months requiring treatment by a doctor or nurse, by grade and gender (%)

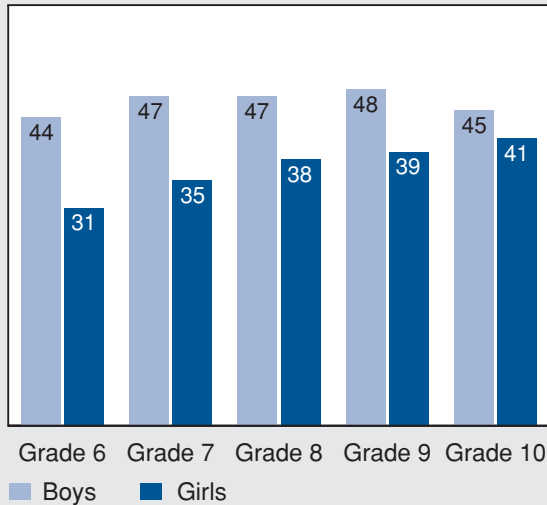
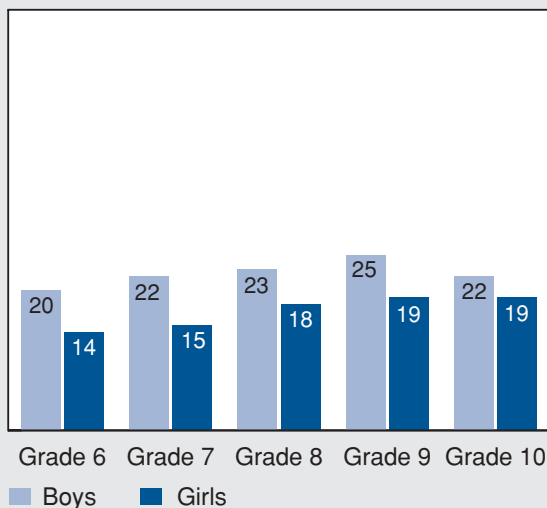


Figure 6.1 shows the overall proportions of students who report at least one injury. Across the grades, 44 to 48% of boys are likely to experience at least one injury requiring medical treatment, compared to 31 to 41% of girls. In every grade, boys consistently report more injuries than girls. The proportion of boys reporting injuries is fairly similar across the five grades, while there is a clear increase in the proportion of injured girls as they get older.

6.2 Students reporting multiple injuries during the past 12 months requiring treatment by a doctor or nurse, by grade and gender (%)



Some young people experience more than one injury over the course of a year, and this is shown in **Figure 6.2**. Reports of multiple injuries range from 20 to 25% for boys and 14 to 19% for girls. In general, the percentages are slightly higher in the older grades for both boys and girls.

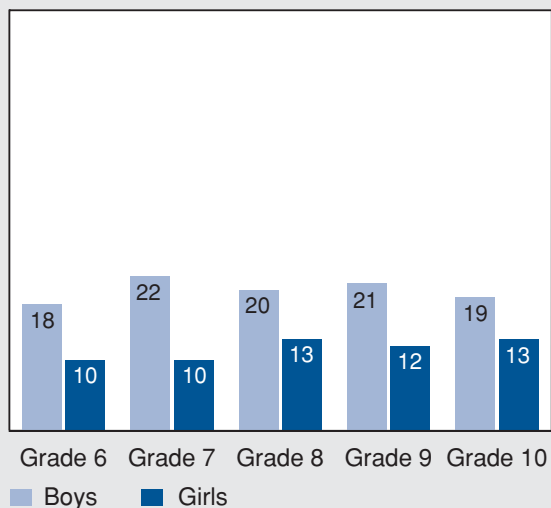
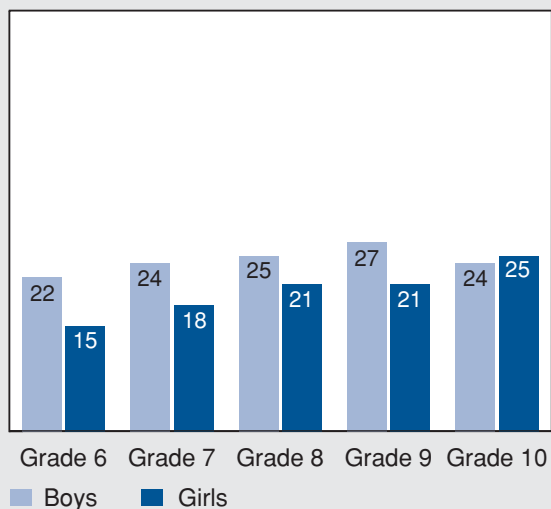
6.3 Students reporting one or more serious injuries during the past 12 months requiring significant medical treatment, by grade and gender (%)

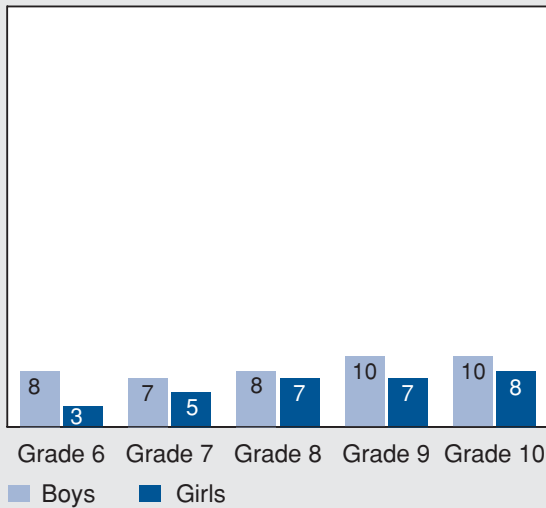
Figure 6.3 shows that 18 to 22% of boys report one or more serious forms of injury requiring placement of a cast, stitches, surgery, or overnight admission to hospital in the past 12 months, compared with 10 to 13% of girls.

Impact of injury on young people's lives**6.4 Missing one or more days from school or usual activities due to an injury, by grade and gender (%)**

The impact of students' injuries extends beyond their immediate physical consequences. Based on the HBSC survey data, about 1 in 5 students typically miss one or more days in school or other usual activities due to an injury, with higher percentages in the older grades (**Figure 6.4**).

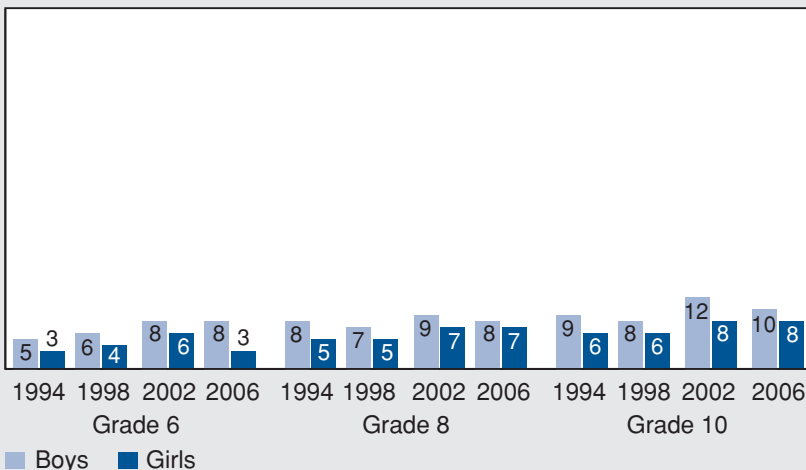


6.5 Missing five or more days from school or usual activities due to an injury, by grade and gender (%)

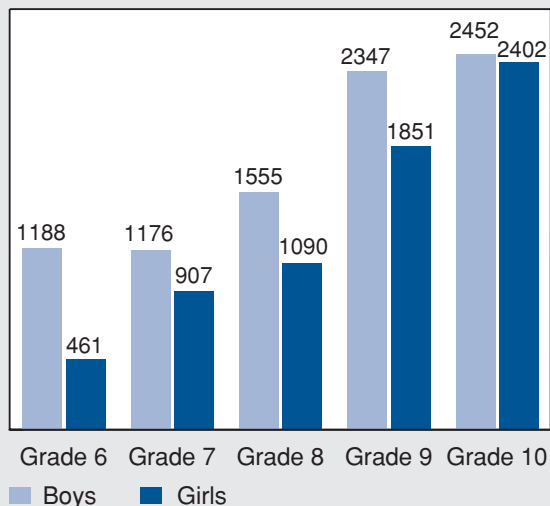


Between 3 and 10% of students report missing more than a week of school or usual activities due to an injury (**Figure 6.5**).

6.6 Missing five or more days from school or usual activities due to an injury, by grade, gender, and year of survey (%)



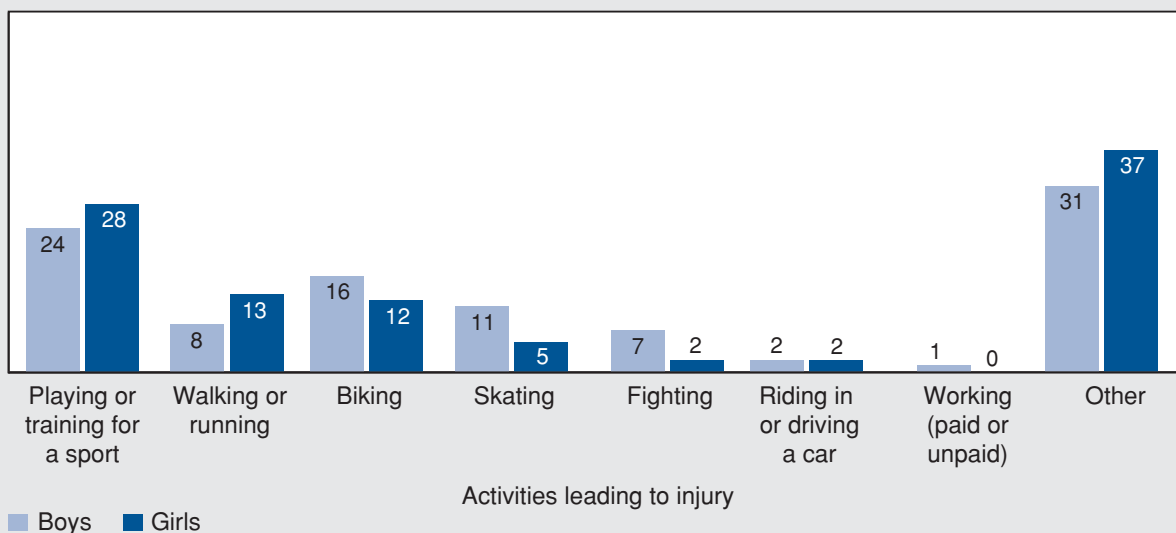
Trends in the occurrence of injuries that result in students missing a week or more from school or usual activities are summarized in **Figure 6.6**. Among boys, there appear to be slight increases in the occurrence of these types of injury in more recent survey years. For example, the percentages of boys reporting these injuries in Grade 10 are 9% (for 1994), 8% (for 1998), 12% (for 2002), and 10% (for 2006). Similar patterns are observed among girls in Grades 8 and 10, but not among Grade 6 girls. These more serious injuries tend to occur more frequently with advancing grade in both genders.

6.7 Total days missed from school or usual activities due to an injury per 1000 students per year, by grade and gender (%)

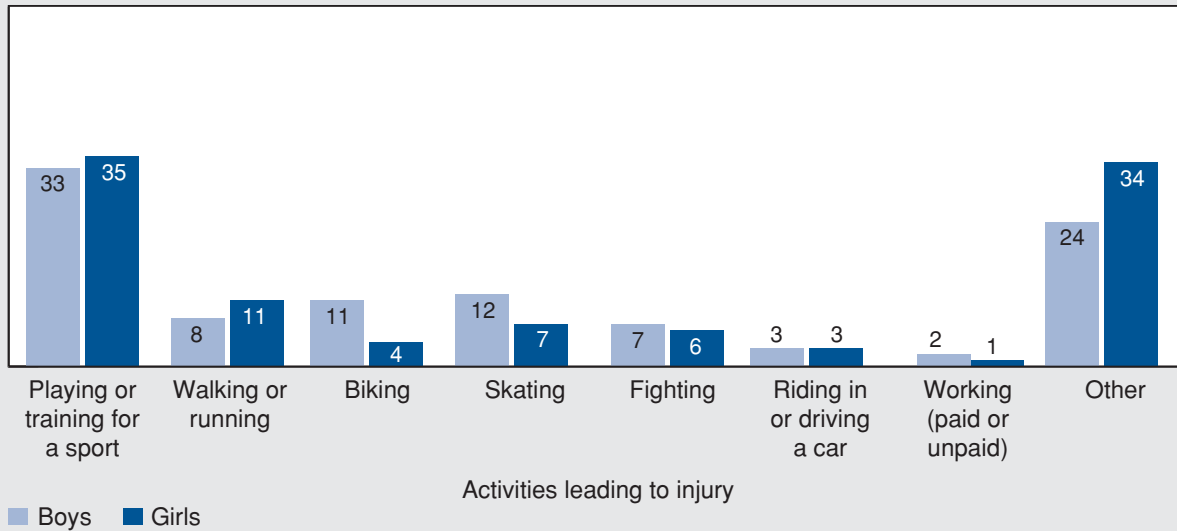
Cumulatively, these injury events result in an enormous amount of lost time to students in all grades (**Figure 6.7**). Injuries also affect the lives of parents and other family members who need to seek emergency medical care on behalf of these young people, as well as to provide time and care for various stages of rehabilitation.

How are young people injured?

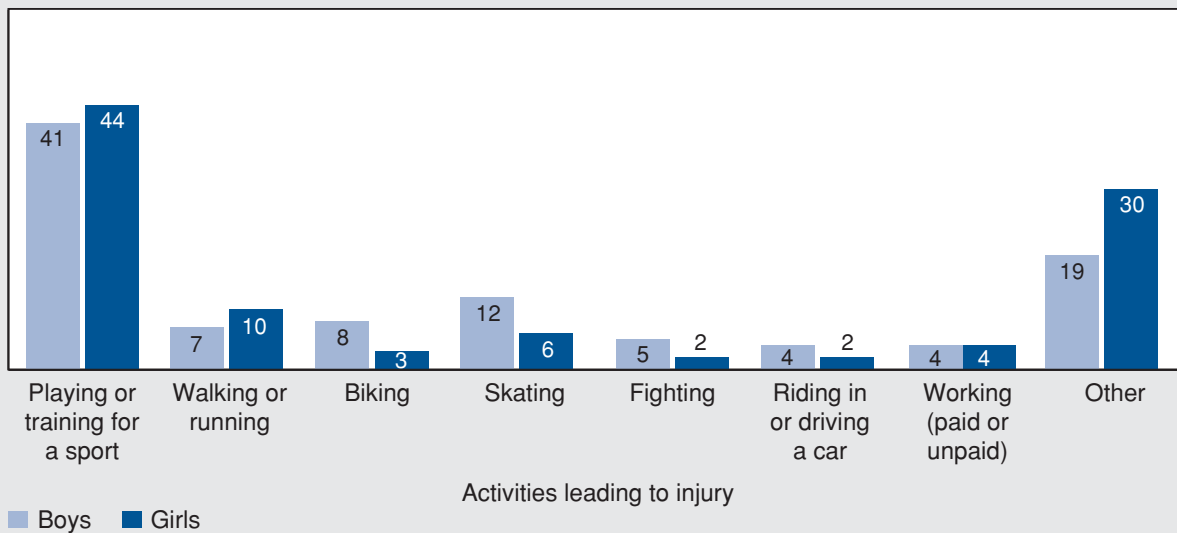
Injuries to young people are caused by many different activities. **Figures 6.8 to 6.10** show the range of activities associated with occurrence of injuries for students in Grades 6, 8, and 10 respectively. It is clear that sports are a major cause of injury across grade and gender.

6.8 Activities leading to injury among Grade 6 students, by gender (% of all activities)

6.9 Activities leading to injury among Grade 8 students, by gender (% of all activities)



6.10 Activities leading to injury among Grade 10 students, by gender (% of all activities)



Although the percentage of injuries caused by physical fights is small compared with sports (**Figures 6.8 to 6.10**), violence can clearly have a lasting impact on various aspects of health that goes beyond the violent encounter and associated physical injury. Injuries caused by work-related activities are also uncommon, although they increase in the older age groups as young people enter the formal workforce.

6.11 Organized versus unorganized activities leading to injury, by grade and gender (%)

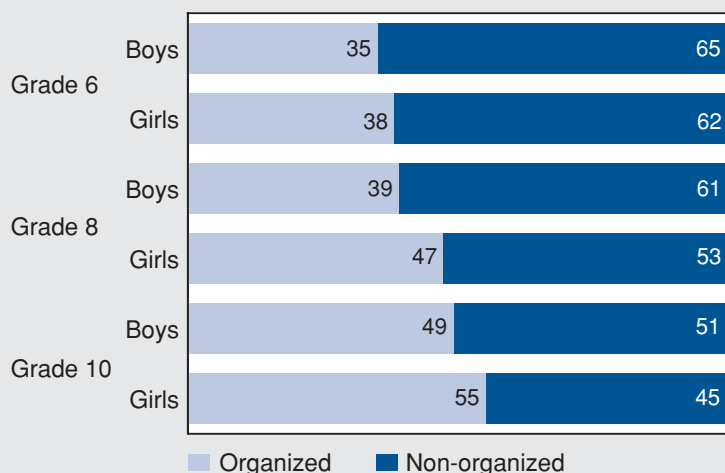


Figure 6.11 shows that the percentage of injuries that happen during organized activities tends to increase with advancing grade. These high percentages reflect the general increased level of organized activities in young people's lives as they grow and develop. Research shows that sports represent a large portion of the organized activities during which young people experience injuries.

Where are young people injured?

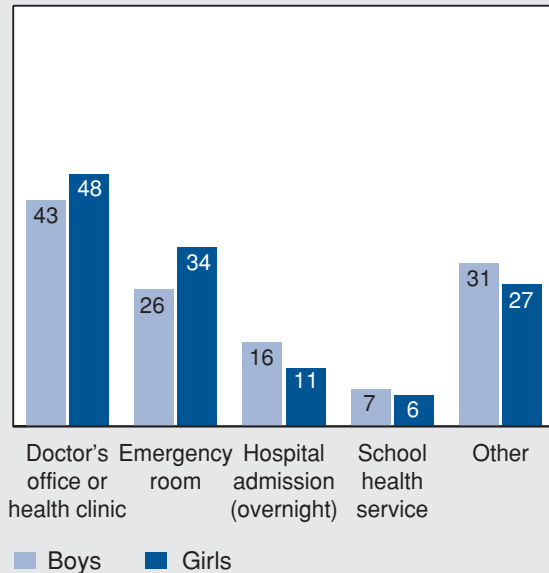
Table 6.12 shows that the vast majority of injuries to young people happen at sports facilities (16 to 43%), at home or in yards (17 to 35%), or in school at recess or lunch (10 to 19%). Injuries that occur at sports facilities or fields increase notably in older grades, while injuries that happen at home or during school hours decline with age.

6.12 Locations where injuries happen, by grade and gender (%)

	Grade 6		Grade 7		Grade 8		Grade 9		Grade 10	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Home or yard	27	35	19	32	19	24	17	21	17	21
Sports facility or field	24	16	27	18	33	30	42	35	43	37
School at recess or lunch	18	19	17	19	16	16	10	16	13	13
School after hours	4	2	4	6	4	6	5	6	4	6
Street or parking lot	10	8	11	9	12	8	10	6	10	5
Other	17	20	23	18	16	16	17	16	14	18

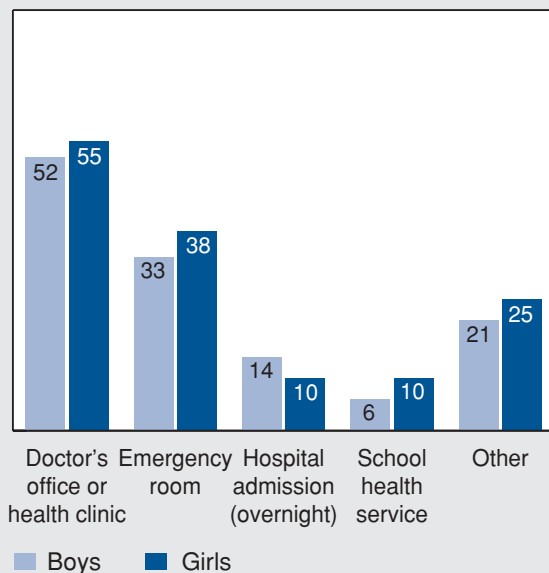
Where are young people's injuries treated?

6.13 Locations of treatment by a doctor or nurse, Grade 6 students by gender (% of injuries)

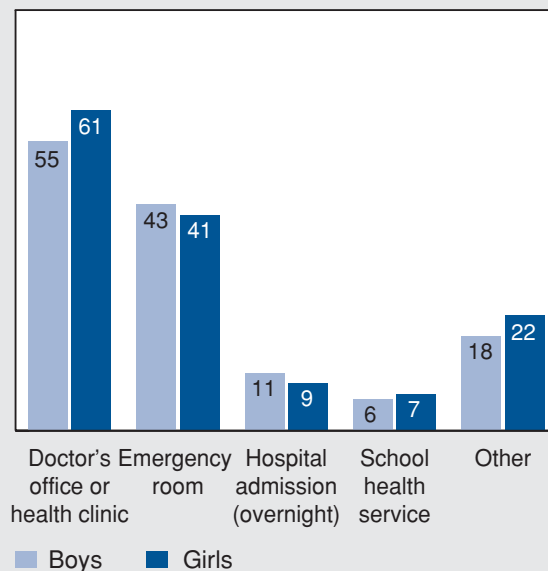


Young people seek medical care from a variety of sources following the occurrence of an injury. The most common sources, shown by grade in **Figures 6.13 to 6.15**, are a doctor's office or health clinic, followed by an emergency room. The proportion of injuries receiving treatment in emergency rooms increases in the older grades, while the proportion requiring overnight hospital admission decreases. Visits to school health services for treatment of injuries are rare at all grade levels, probably reflecting the lack of school nurses in many Canadian schools. In general, the patterns of treatment observed by gender are quite consistent across the grades.

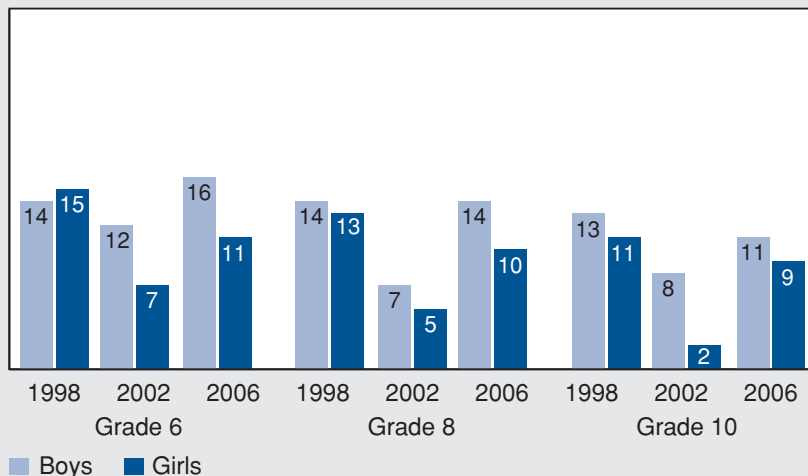
6.14 Locations of treatment by a doctor or nurse, Grade 8 students by gender (% of injuries)



6.15 Locations of treatment by a doctor or nurse, Grade 10 students by gender (% of injuries)



6.16 Injuries treated by a doctor or nurse and also requiring an overnight hospital stay (% of injuries)



The proportion of students with injuries requiring an overnight hospital stay are charted for three survey years in **Figure 6.16**. In general, there is no clear trend over time for these more serious injuries.

6.17 Injuries requiring significant medical treatment, by activity (% of injuries)

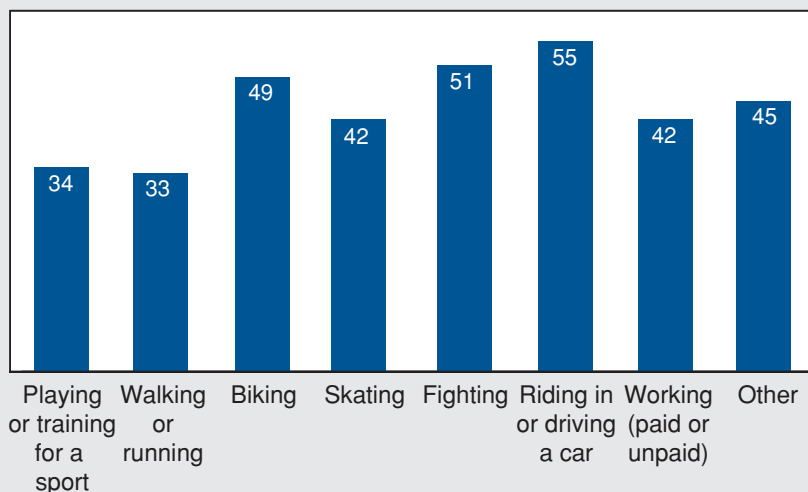


Figure 6.17 shows that the types of injury-causing activities most likely to lead to significant medical treatment include motor vehicle events, fighting, and biking. Significant medical treatment is defined on the HBSC survey as casting, stitches, surgery, or hospital admission. It is surprising that, although sports are a more frequent cause of injury among young people (see Figures 6.8 to 6.10), sports injuries are less likely to require significant medical treatment.

Data on peer violence and weapon carrying are presented in Chapter 5 on Bullying and Fighting.

Injury in context

6.18 Serious injury and living with both parents (%)

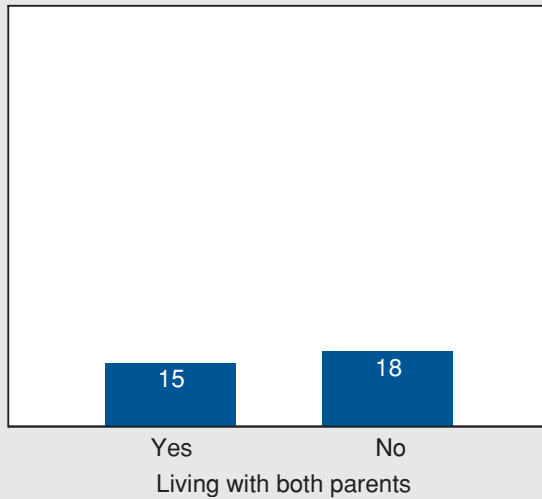


Figure 6.18 indicates that young people who live with both parents are slightly less likely to sustain a serious physical injury.



6.19 Serious injury and parent trust and communication (%)

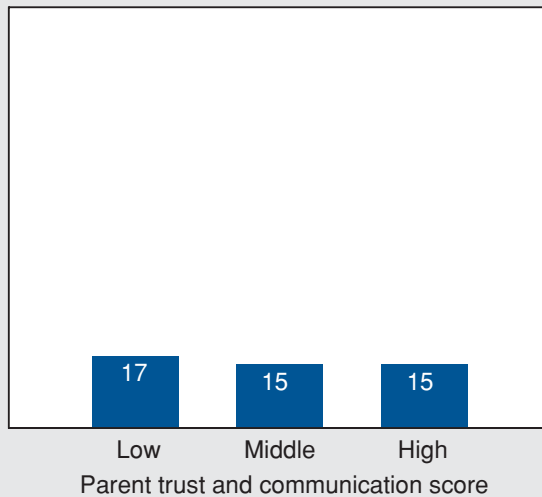
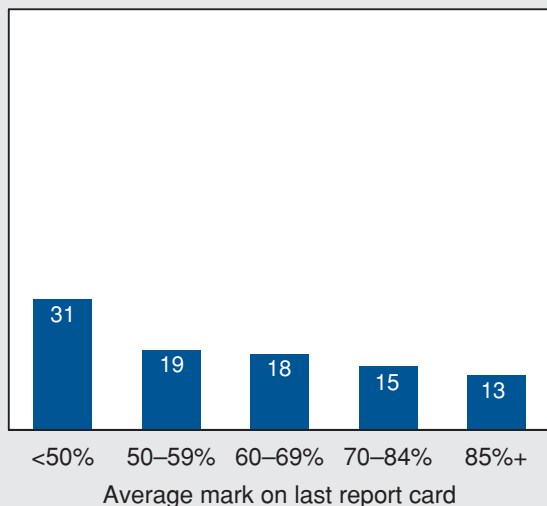


Figure 6.19 indicates that the quality of parent-child relationships, based on the parent trust and communication scale, does not impact the likelihood of young people reporting a serious injury.

6.20 Serious injury and academic achievement (%)

Of all the contexts considered in relation to occurrence of injury, level of academic achievement shows the strongest relationship (**Figure 6.20**). The rate of reported serious injury among students with high academic averages is less than half that of those with the lowest averages.

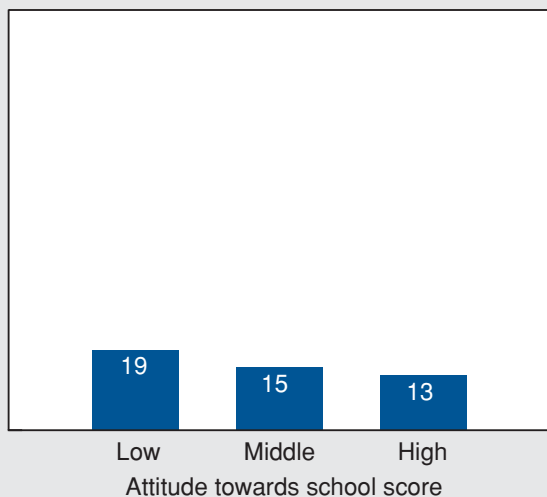
6.21 Serious injury and attitude towards school (%)

Figure 6.21 suggests that, as attitude towards school improves, the proportion of students reporting serious injuries decreases.



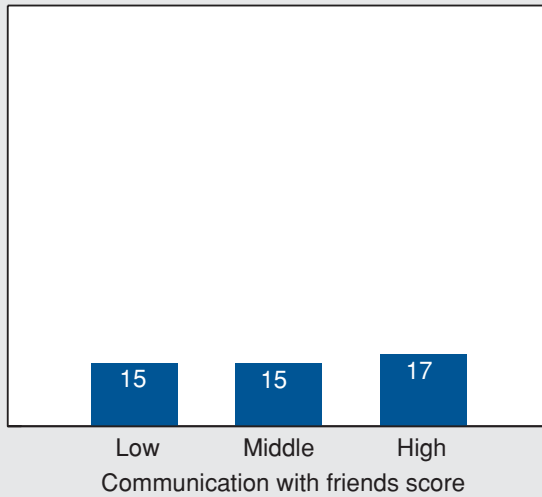
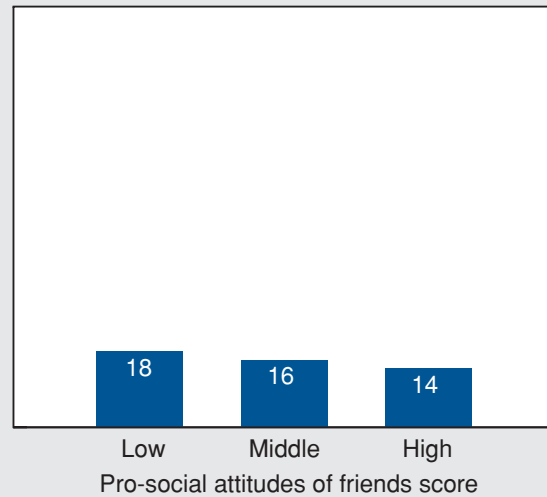
6.22 Serious injury and communication with friends (%)

Figure 6.22 indicates that the occurrence of serious injury is not related to the level of communication with friends.

6.23 Serious injury and pro-social attitudes of friends (%)

A high score on the pro-social attitudes of friends scale is associated with a slightly lower percentage of students reporting serious injury (**Figure 6.23**).

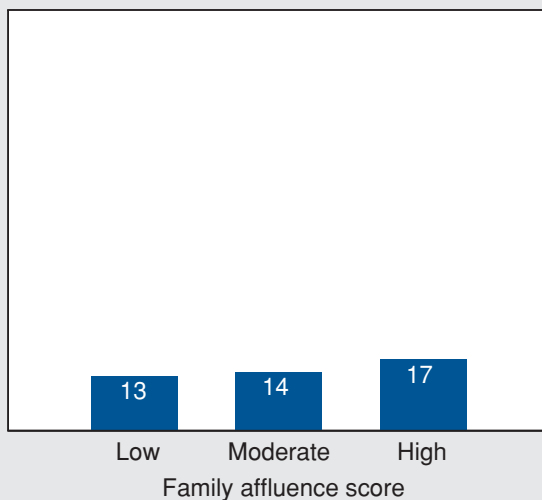
6.24 Serious injury and family affluence (%)

Figure 6.24 shows that young people from families with greater affluence report higher rates of serious injury. A possible explanation for this finding is that young people from families with more disposable income may have access to more expensive and potentially more dangerous sporting activities and equipment.



Summary

There are several important messages from this analysis of physical injuries. First, injuries are a leading health problem among Canadian young people. Large proportions of students, as many as 31 to 48%, report one or more medically-treated injuries in a 12-month period. These injuries are often serious, in that they require substantial medical treatment, and result in significant time lost from school or usual activities, reaching as high as 2452 days missed per 1000 students over one year. The cumulative burden of these injuries on populations of young people and our society is enormous.

Second, this analysis provides information that is helpful in profiling the occurrence of injuries among young people, based on who is most likely to be injured, activities most frequently associated with injury, where injuries are likely to happen, and medical treatments associated with injury occurrence. In turn, this information can be used to develop and tailor injury prevention messages to adults who are responsible for young people's safety and well-being. By knowing the physical locations of injury events (for younger grades, homes and yards or schools during recess and lunch; for older grades, sports facilities and fields), those in charge of planning injury prevention programs can identify the people and organizations responsible for the environments where most injuries happen. These groups can then be targeted in prevention programs.

Third, social environments in the home, school, and peer group are associated with occurrence of injuries, an important health indicator. Protective social environments are slightly, but consistently associated with lower rates of serious injury. Living with both parents and experiencing a good parent-to-child relationship, as reflected by the parent trust and communication scale, have a minor protective impact on risk of serious injury. School factors, such as good school environment and attitude towards school, but, particularly, higher academic achievement levels, have a more important protective influence on occurrence of serious injury. The two peer factors show small, but surprising opposite results: high communication with friends is associated with higher risk of serious injury, while high pro-social attitudes of friends is related to lower risk of serious injury. Finally, higher family affluence slightly increases the risk of serious injury. These findings point to the importance of improved understanding of social environments as a potential prevention strategy for injury and other health outcomes.



7

Emotional Health and Well-being

by John Freeman

The importance of emotional health

Young people's emotional health reflects their awareness of their own emotions or feelings, their thinking or psychology, and how these influence their overall health, attitudes, and well-being.

Canadians should be concerned about emotional health. Research has shown that many adolescents who experience mental health problems continue to have these problems in adulthood; as a result, early recognition of the signs of emotional health difficulties is critical.¹

People with poor emotional health may suffer multiple personal costs, including limited employment opportunities, reduced access to housing, and strained family relationships.² If poor emotional health develops into more severe mental illness, personal costs can lead to poverty, homelessness, and social exclusion, which may ultimately be life-threatening.

Research can help to identify those school-aged young people most likely to have poor emotional health. The HBSC study plays a valuable role in gathering such information about young Canadians.



How is emotional health measured by the HBSC study?

Emotional health is measured in four different ways on the HBSC survey. We categorize these as direct and indirect measures of emotional health (including physical aspects) at specific and global levels of the person (**Table 7.1**).

7.1 Emotional health measures

	Specific	Global
Indirect	Psychosomatic symptoms	Perceived health
Direct	Emotional well-being	Life satisfaction

The eight psychosomatic symptoms assessed in the HBSC study represent indirect, but specific indicators of emotional health. The symptoms include headache, stomach ache, backache, feeling low (depressed), irritability or bad temper, feeling nervous, difficulties in getting to sleep, and feeling dizzy. For each of the symptoms, young people were asked to indicate how often it occurred in the past six months, with possible responses being about every day, more than once a week, about every week, about every month, or rarely/never.

Nine emotional well-being questions were used as more direct, specific indicators of young people’s emotional health. The emotional well-being questions include asking them about having self-confidence, wishing they were someone else, feeling helpless, having trouble making decisions, being sorry for the things they do, changing how they look, feeling left out of things, feeling lonely, and having a hard time saying no. Students could choose from a set of five responses to the questions, including strongly agree, agree, neither agree nor disagree, disagree, and strongly disagree.

One question explored global emotional health indirectly by asking students to assess their general health as excellent, good, fair, or poor.

A final question represented a more direct, global indicator of emotional health. Students were asked to indicate their level of life satisfaction from 0 (worst possible life) to 10 (best possible life).



What are we reporting on in this chapter?

The eight psychosomatic symptoms and nine emotional well-being questions can be examined separately or combined to form two scales: psychosomatic symptoms and emotional well-being. The scale for psychosomatic symptoms consists of three categories: none, 1 to 3 symptoms, and 4 or more symptoms. On the other hand, the emotional well-being scale is divided into three categories of equal sizes: low, medium, and high.

Frequencies are presented for three separate psychosomatic symptoms experienced by students in the past six months, namely backaches (as experienced at least once a month), low or depressed feeling (as experienced at least once a week), and bad temper or irritability (as experienced more than once a week).

We then focus on three of the nine questions related to students' emotional well-being, specifically self-confidence, wishing they were someone else, and feelings of helplessness.

We also provide the results of students' assessments of general health and their self-reports on life satisfaction. The relationship between life satisfaction and the two full scales (psychosomatic symptoms and emotional well-being) is also explored.

All four contextual variables – living with both parents, school experience (academic achievement and attitude towards school), peer relationships (communication with friends and pro-social attitudes of friends), and socio-economic status (family affluence) – are reported in relation to the psychosomatic symptoms and emotional well-being scales.



Psychosomatic symptoms in Canadian students

7.2 Having backaches at least once a month, by grade and gender (%)

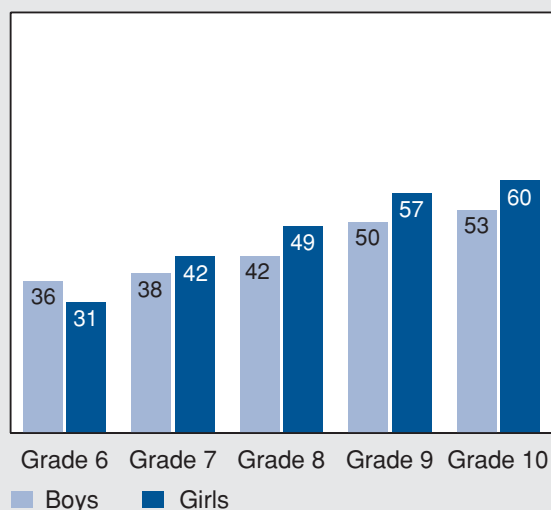
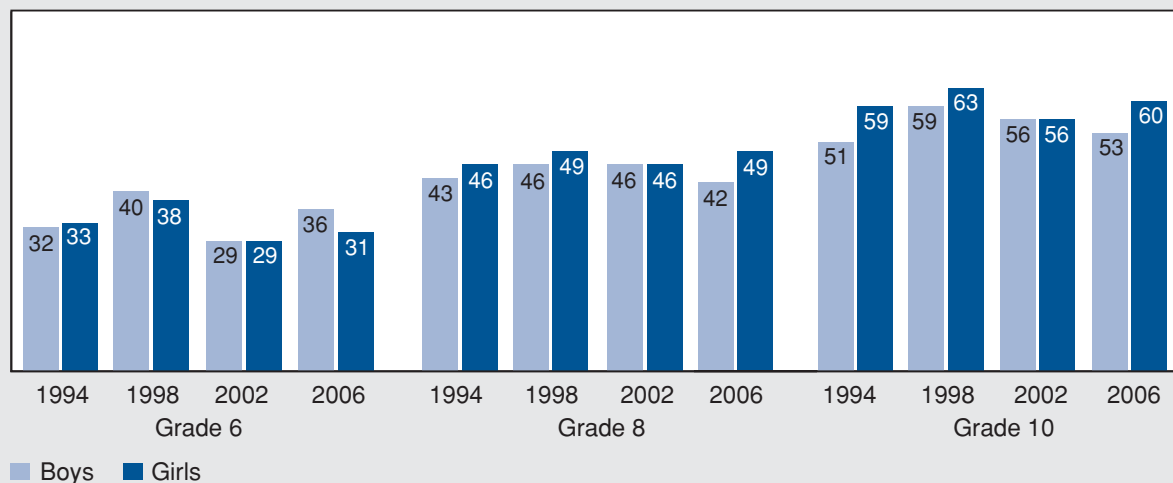


Figure 7.2 shows the percentage of students who report having a backache at least once a month in the past six months. Proportions of young people who have backaches increase for both boys and girls over the grades, starting at 36% for boys and 31% for girls in Grade 6 and growing to 53% and 60% in Grade 10, respectively. The increase is steeper for girls between Grades 6 and 8 than it is for boys. In upper grades, the proportion of girls who have backaches is 7% higher than that for boys.

7.3 Having backaches at least once a month, by grade, gender, and year of survey (%)



Although gender differences in reported backaches were not pronounced in the three previous survey years (with the exception of Grade 10 students in 1994 and 1998), they are greater in 2006, such that more Grade 6 boys experience regular backaches than Grade 6 girls, with the reverse being true in Grades 8 and 10 (**Figure 7.3**).

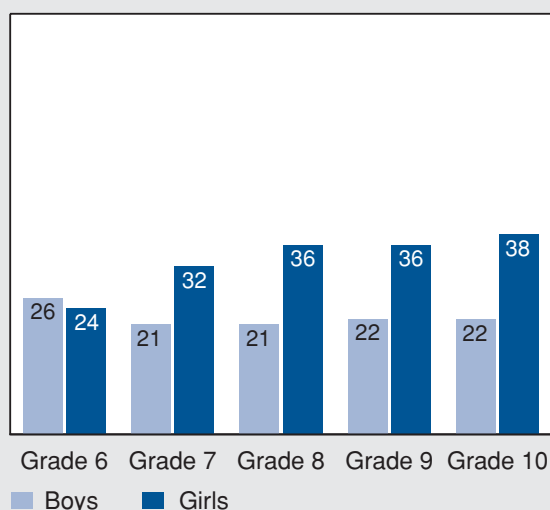
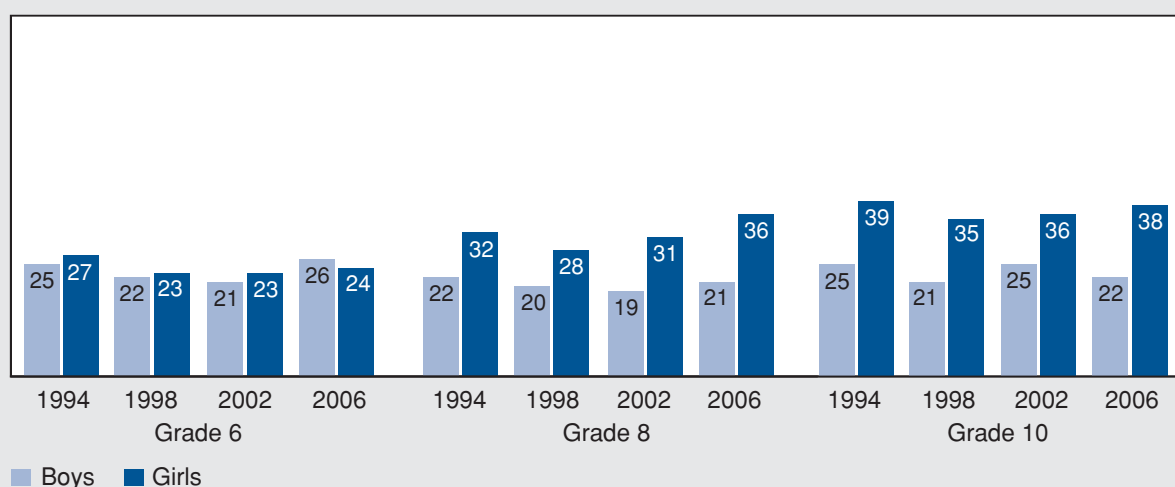
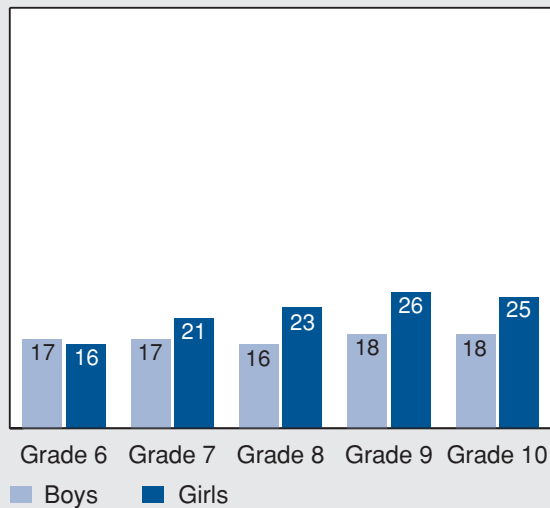
7.4 Feeling depressed or low at least once a week, by grade and gender (%)

Figure 7.4 gives a picture of the percentage of students who feel depressed or low at least once a week in the past six months. For boys, the number is highest in Grade 6 at 26%, drops to 21% in Grade 7, and stays at that level in the three subsequent grades. In contrast, for girls, the number is lowest in Grade 6 (24%), increases sharply in Grade 7 to 32%, and peaks in Grade 10 at 38%. Thus, while the proportion of boys feeling depressed or low slightly exceeds that of girls (by 2%) in Grade 6, the gap between boys and girls in Grade 10 is more extreme.

7.5 Feeling depressed or low at least once a week, by grade, gender, and year of survey (%)

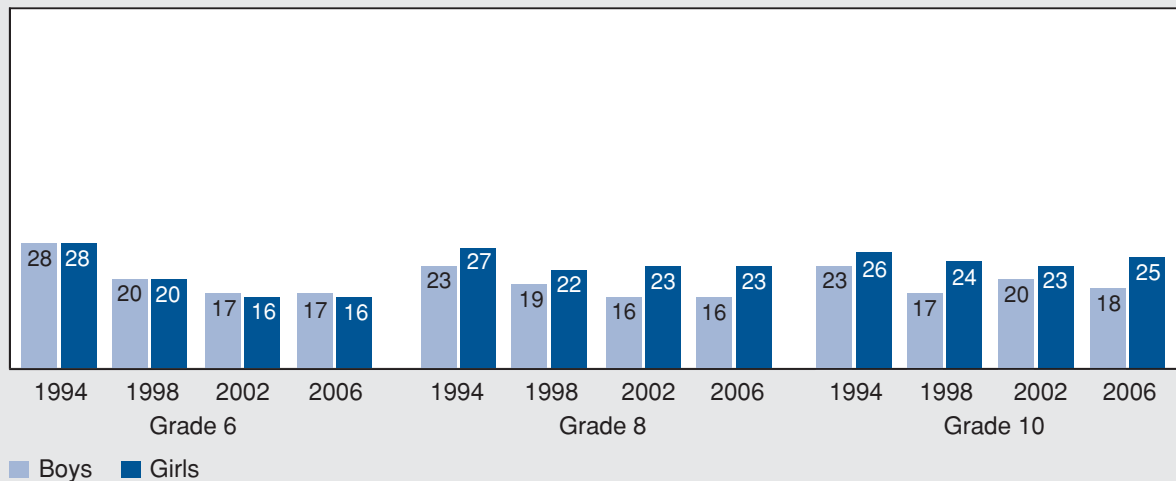
As shown in **Figure 7.5**, the 2006 numbers for feeling depressed are relatively consistent with the previous three surveys, although the gender gap is wider in both Grade 8 and Grade 10 than in previous years.

7.6 Feeling bad tempered or irritable more than once a week, by grade and gender (%)



Similar to the other two psychosomatic symptoms reported, the pattern for being bad tempered or irritable more than once a week in the past six months shows gender differences (**Figure 7.6**). The percentage of boys being in a bad mood/irritable remains constant across the grades, whereas percentage of girls increases by grade, with the biggest jump between Grade 6 and Grade 7. Thus, while boys and girls have almost the same rate of being bad tempered/irritable in Grade 6, 17% and 16% respectively, there is a gender gap in all the other grades, with girls reporting more bad mood/irritability in each grade.

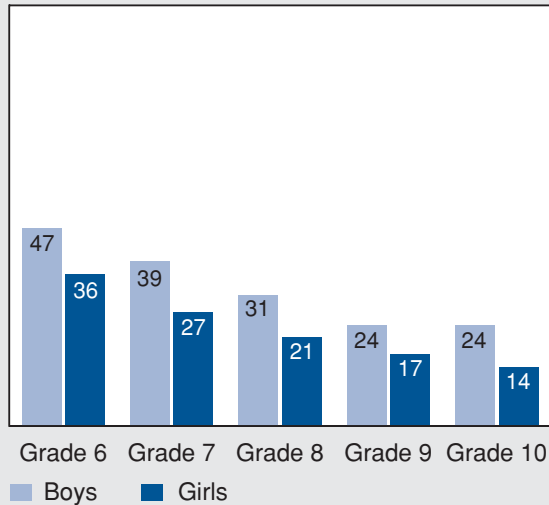
7.7 Feeling bad tempered or irritable more than once a week, by grade, gender, and year of survey (%)



Gender differences in bad temper and irritability are consistent across survey years (**Figure 7.7**). While this symptom declined across grade and gender from 1994 to 1998, there was little change from 1998 to 2002, and virtually no change from 2002 to 2006.

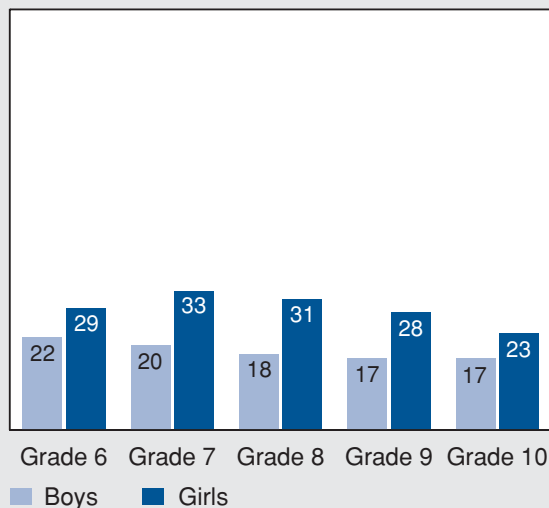
Emotional well-being of Canada's young people

7.8 Students who strongly agree they have confidence in themselves, by grade and gender (%)



As shown in **Figure 7.8**, students' self-confidence is influenced by both grade and gender. Forty-seven percent of boys in Grade 6 strongly agree that they have confidence in themselves, but this level drops in each advancing grade to arrive at just 24% in Grades 9 and 10. The proportion of girls with self-confidence starts off lower than that of boys in Grade 6 at 36% and declines in a similar fashion to just 14% in Grade 10. The biggest drop in self-confidence for boys occurs between Grades 6 and 7 and again between Grades 7 and 8; for girls, the largest drop is between Grades 6 and 7. The gender gap is largest in Grade 7 (12%) and smallest in Grade 9 (7%).

7.9 Students who agree or strongly agree they often wish they were someone else, by grade and gender (%)



As illustrated in **Figure 7.9**, across grades, more girls than boys consistently agree or strongly agree that they often wish they were someone else. In general, there is a slight decline in students wishing they were someone else across the grade levels with the highest rates for boys being in Grade 6 (22%) and for girls in Grade 7 (33%). The gender gap is smallest in Grade 10 at 6% and largest in Grades 7 and 8 at 13%.

7.10 Students who agree or strongly agree they often feel helpless, by grade and gender (%)

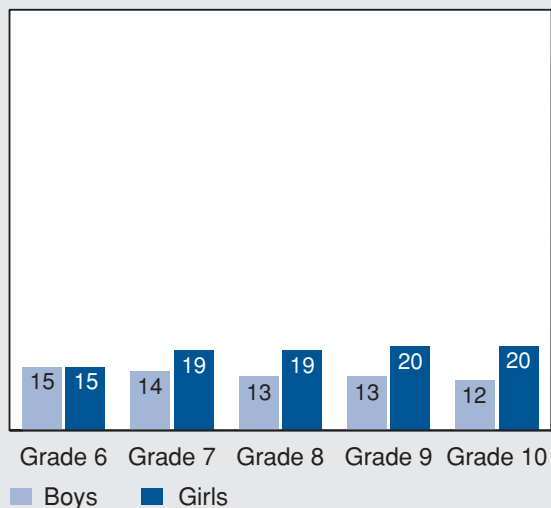
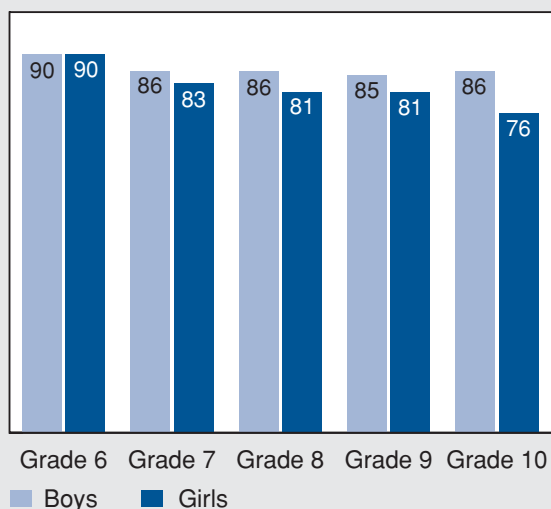


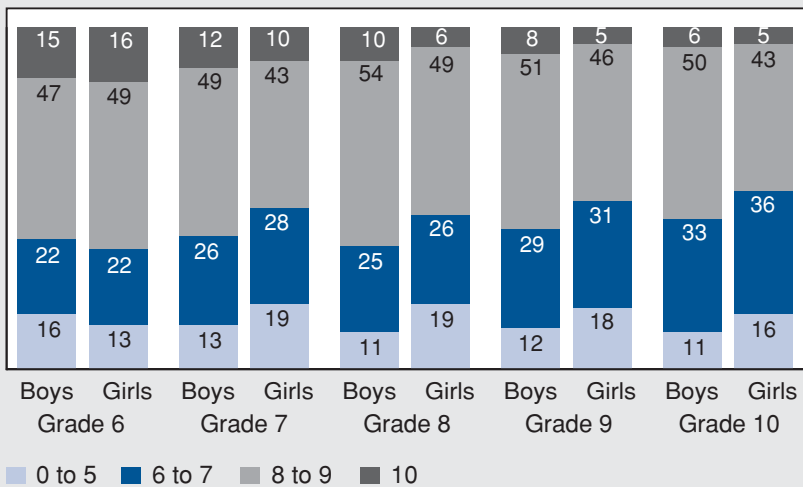
Figure 7.10 shows responses to the question about feeling helpless. The pattern of students' responses for agreeing or strongly agreeing that they feel helpless is similar to that found for psychosomatic symptoms. Boys and girls respond to this question similarly in Grade 6. An increase in girls' reports of helplessness occurs between Grades 6 and 7, whereas the proportion of boys reporting helplessness decreases slightly through Grades 6 to 10, reducing from 15% to 12%. Thus, the gender gap increases from Grade 6 to Grade 10 by 8%.

General health and life satisfaction among students

7.11 Students who report good or excellent general health, by grade and gender (%)



As seen in **Figure 7.11**, 90% of both boys and girls in Grade 6 say their general health is good or excellent. This figure drops 4% (to 86%) for boys in Grade 7, but remains relatively constant thereafter. Girls experience a decline of 7% in self-assessed general health between Grades 6 and 7, and a decline of 14% overall from Grade 6 to Grade 10. As a result, while there is no gender gap in Grade 6, there is a significant gender gap in Grade 10.

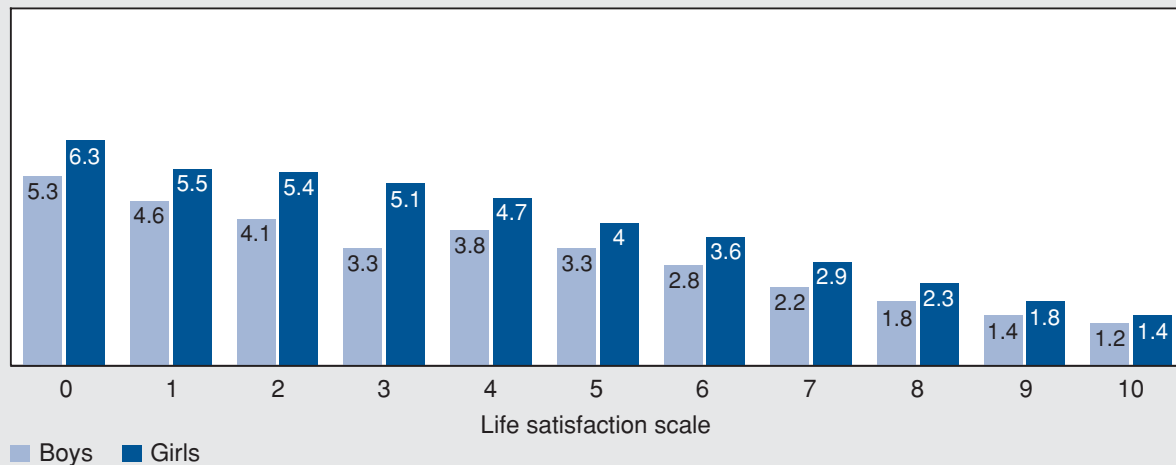
7.12 How students rate life out of 10, by grade and gender (%)

In Grade 6, 62% of boys and 65% of girls give themselves a high score (between 8 and 10) on the life satisfaction ladder (**Figure 7.12**). This proportion changes only marginally for boys across the grade levels, peaking at 64% in Grade 8 and dropping as low as 56% in Grade 10. In contrast, the percentage of girls reporting high life satisfaction decreases sharply from Grade 6 to Grade 7 (53%) and sinks to fewer than half (48%) by Grade 10. As with many other measures of emotional health, there are limited gender differences in Grade 6, but marked gender differences in Grade 10, largely as a result of girls' worsening emotional health between Grades 6 and 7.

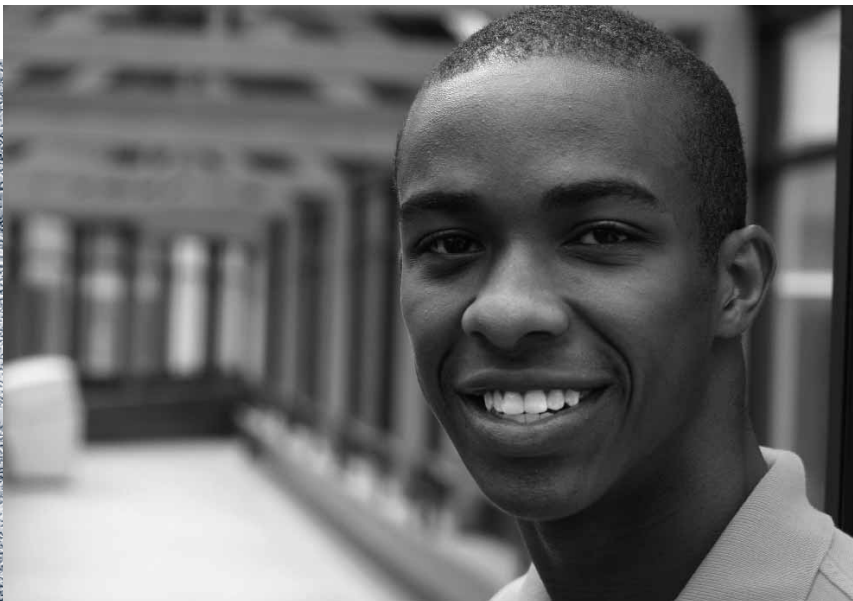
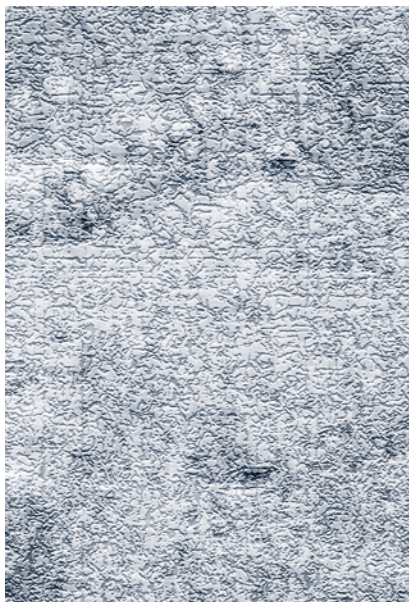


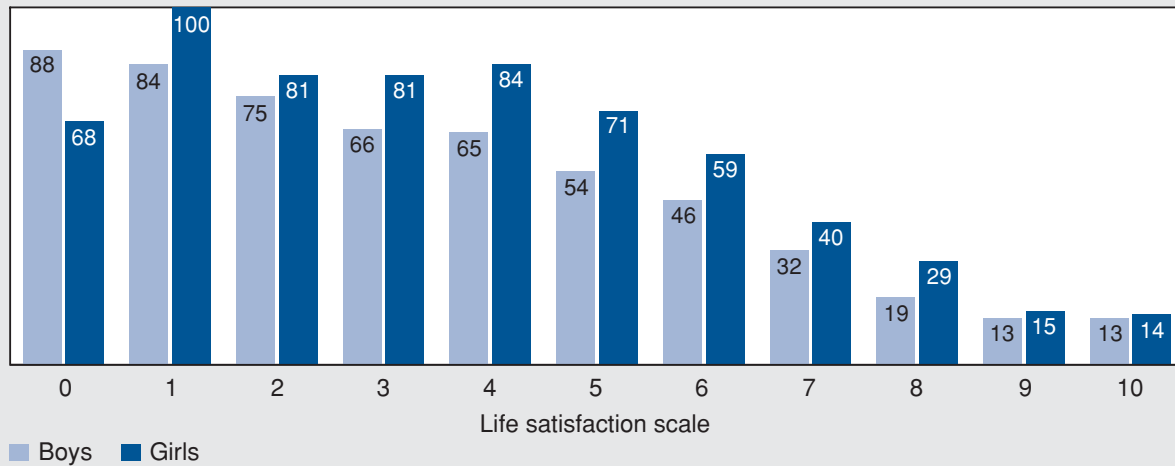
Relationship of life satisfaction to emotional health

7.13 Mean number of psychosomatic symptoms by how students rate life out of 10, by gender



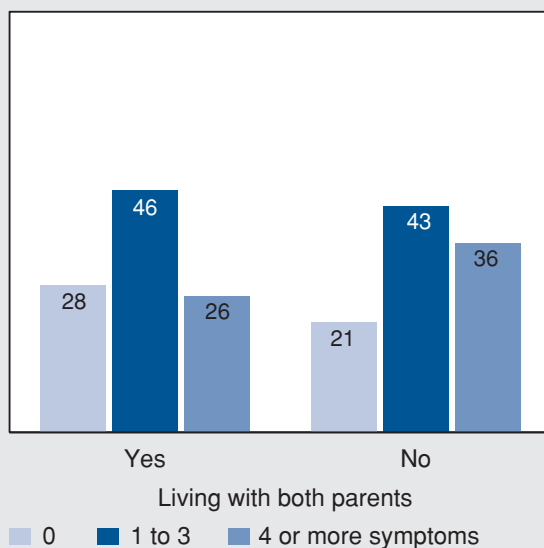
There is a strong relationship between students' life satisfaction and both specific measures of emotional health (psychosomatic symptoms and emotional well-being). The number of reported psychosomatic symptoms during the past six months decreases significantly for both boys and girls as life satisfaction increases (**Figure 7.13**). Boys who score themselves 0 on life satisfaction report 5.3 psychosomatic symptoms on average, as contrasted with boys scoring 10 on life satisfaction who report only 1.2 psychosomatic complaints. Likewise, girls with 0 on life satisfaction indicate 6.3 psychosomatic symptoms; girls with 10 on life satisfaction report only 1.4 symptoms. At each level of life satisfaction, girls report more psychosomatic symptoms than boys.



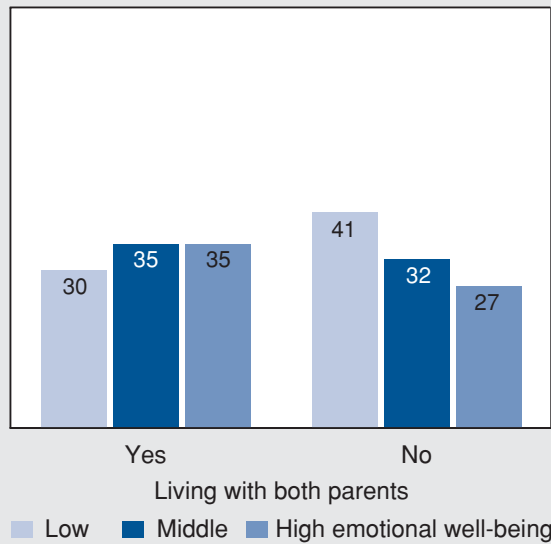
7.14 Students with a low emotional well-being score by life satisfaction rating out of 10, by gender (%)

Similarly, as shown in **Figure 7.14**, level of life satisfaction is connected to having a low score on the emotional well-being scale. Eighty-eight percent of boys who have the worst possible life satisfaction (a score of 0) have low emotional well-being, while only 13% of boys with the best possible life satisfaction (a score of 10) fall into this category. Sixty-eight percent of girls scoring 0 on life satisfaction and 100% of those scoring 1 have low emotional well-being, whereas only 15% of those scoring 9 and 14% of those scoring 10 are in this group. With the exception of the life satisfaction score of 0, boys with the same life satisfaction score as girls are less likely to have low emotional well-being.

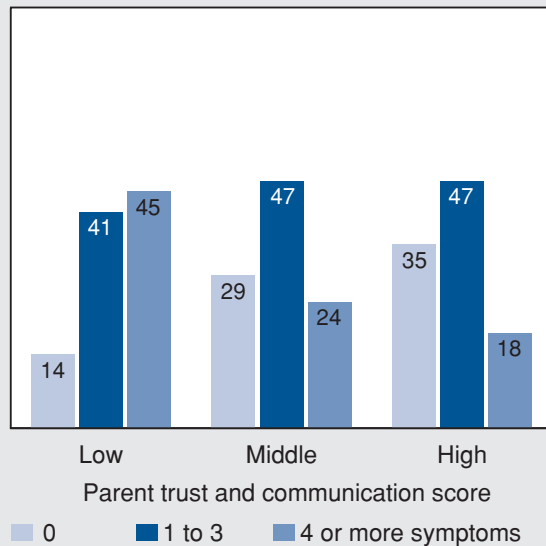
Emotional health in context

7.15 Number of psychosomatic symptoms and living with both parents (%)

As shown in **Figure 7.15**, young people living with both parents are less likely to have 4 or more psychosomatic symptoms (26%) than children with other living arrangements (36%).

7.16 Emotional well-being and living with both parents (%)

Young people in households with both parents (35%) have a higher emotional well-being score than those not living with both parents (27%) (**Figure 7.16**).

7.17 Number of psychosomatic symptoms and parent trust and communication (%)

Ultimately, the effect of the parent-child relationship on emotional health is much more important than living with both parents. While 45% of students with a low score on the parent trust and communication scale have 4 or more psychosomatic symptoms, only 14% report having no symptoms (**Figure 7.17**). In contrast, only 18% of young people with a high score on the parent trust and communication scale have 4 or more psychosomatic symptoms, while 35% report no symptoms.

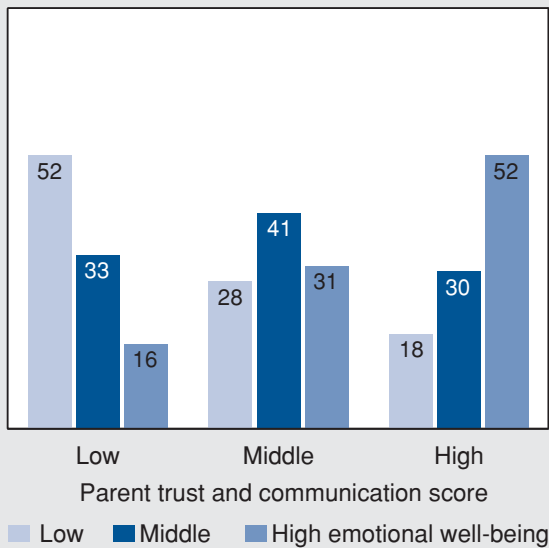
7.18 Emotional well-being and parent trust and communication (%)

Figure 7.18 shows the relationship between two scales: parent trust and communication and emotional well-being. Fifty-two percent of students with a high score on the parent trust and communication scale have a high emotional well-being score, compared to only 16% of those with a low parent trust and communication score.

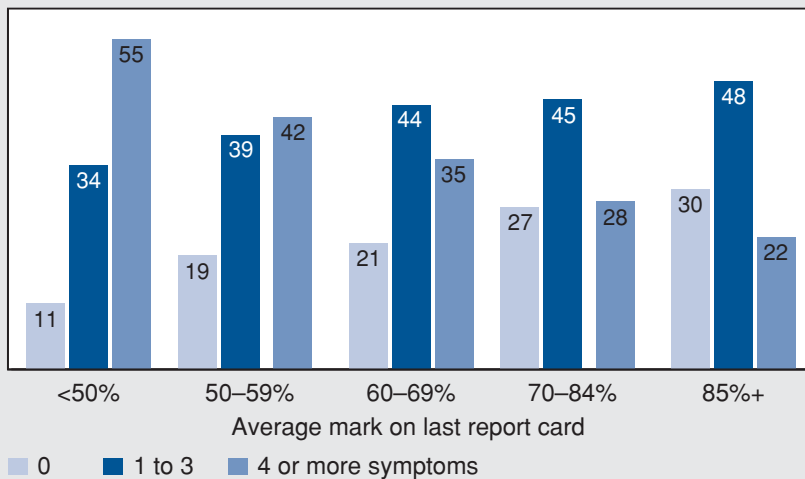
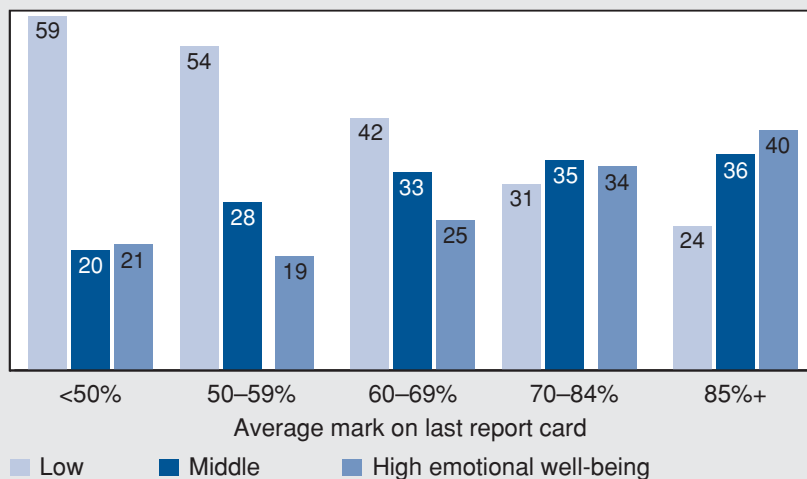
7.19 Number of psychosomatic symptoms and academic achievement (%)

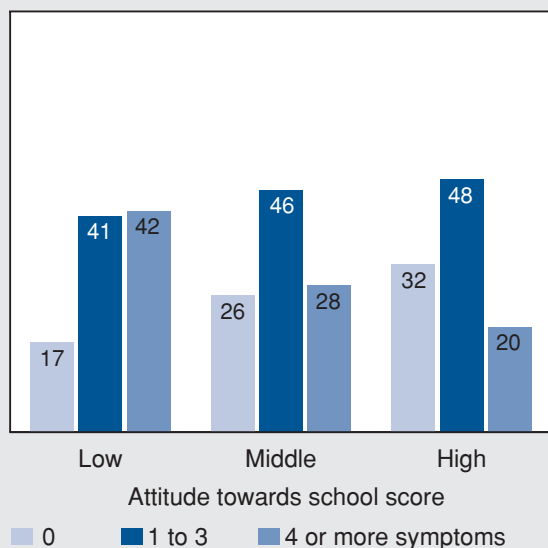
Figure 7.19 demonstrates that the number of psychosomatic symptoms decreases steadily as marks increase. Fifty-five percent of students with averages in the lowest academic achievement category have 4 or more psychosomatic symptoms; this number drops to 42%, 35%, 28%, and 22% in the higher school achievement categories.

7.20 Emotional well-being and academic achievement (%)

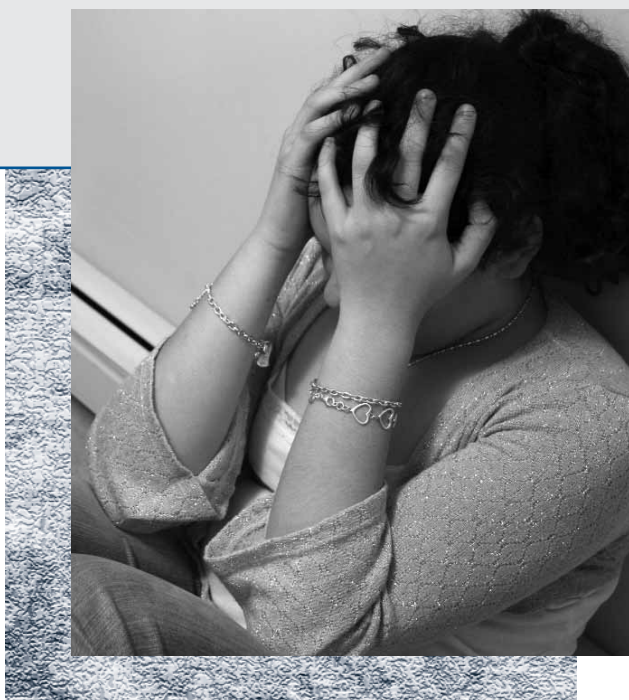


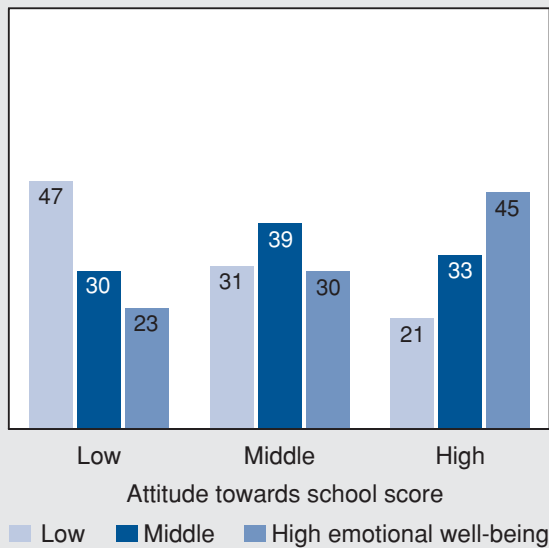
Good marks also influence emotional well-being (**Figure 7.20**). Fifty-nine percent of students with an average mark of less than 50% have a low emotional well-being score, while only 24% of students with an average mark of 85% or higher fall into this group.

7.21 Number of psychosomatic symptoms and attitude towards school (%)



Students (at 42%) with low quality of school experience (i.e., a low score on the attitude towards school scale) are more likely to report 4 or more psychosomatic symptoms than students with a middle score on the attitude towards school scale (at 28%) (**Figure 7.21**). In turn, even fewer students (at 20%) with a high attitude towards school score are likely to have 4 or more psychosomatic symptoms.

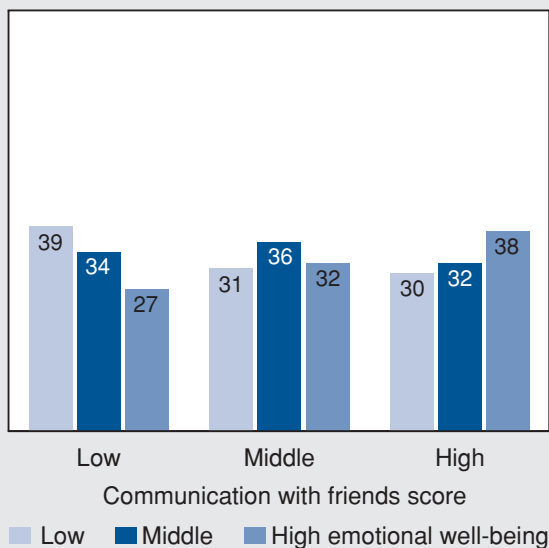


7.22 Emotional well-being and attitude towards school (%)

Attitude towards school has a protective influence on emotional well-being (**Figure 7.22**) which is similar to its protective influence on psychosomatic symptoms (see Figure 7.21). Twenty-three percent of students with a low attitude towards school score have a high emotional well-being score, while 45% of students with a high attitude towards school score have a high emotional well-being score.

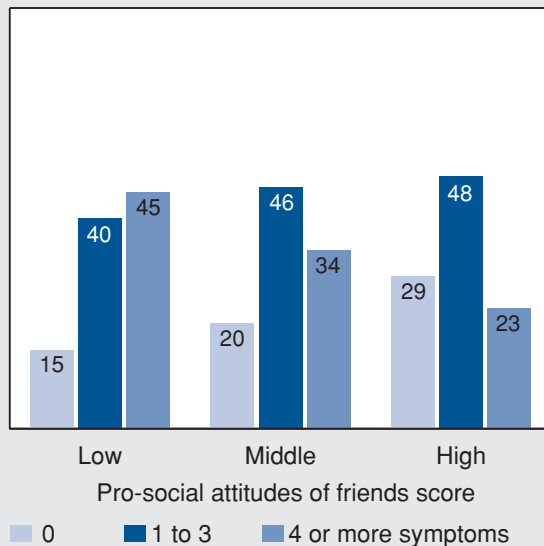
Psychosomatic symptoms and communication with friends

The HBSC data show that different scores on the communication with friends scale have minimal influence on reports of psychosomatic symptoms, with variations as small as 0 to 3% (not shown).

7.23 Emotional well-being and communication with friends (%)

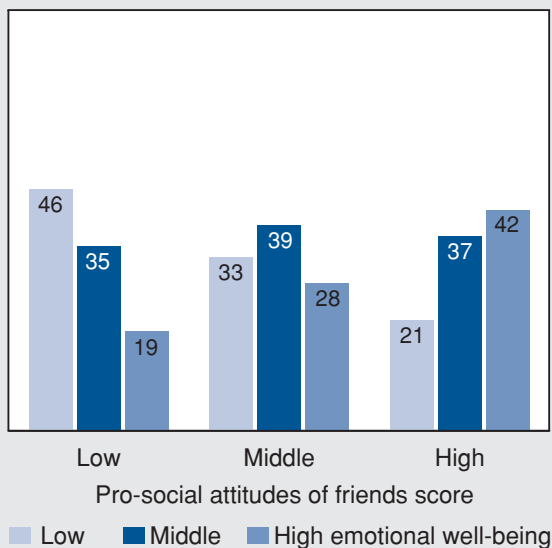
There is a connection between the communication with friends and emotional well-being scales. Twenty-seven percent of students with a low communication score have high emotional well-being, in contrast to 38% of students with high communication levels (**Figure 7.23**).

7.24 Number of psychosomatic symptoms and pro-social attitudes of friends, Grade 9 and 10 students (%)

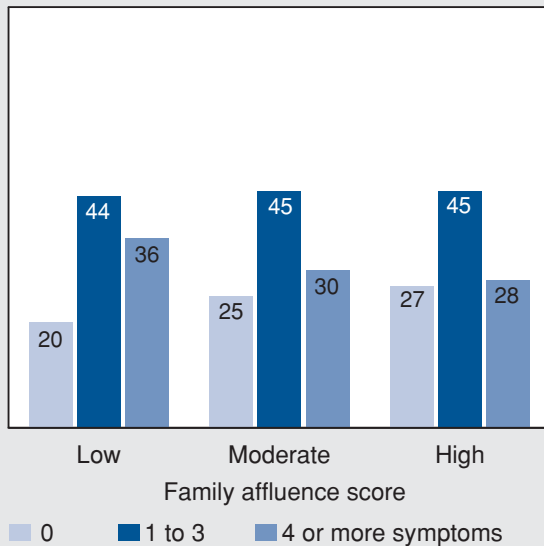
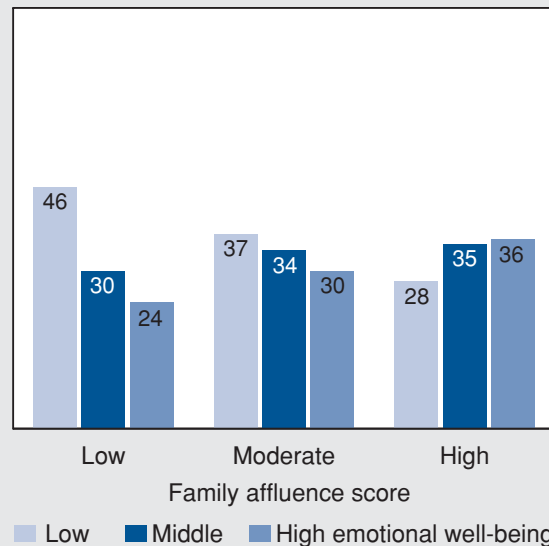


Pro-social attitudes of friends are strongly related to psychosomatic symptoms. Forty-five percent of students with a low score on the pro-social attitudes of friends scale have four or more psychosomatic symptoms, compared to only 23% of students with a high pro-social attitudes score. Conversely, 29% of students with a high pro-social attitudes score have no symptoms, compared to just 15% of those with a low score (**Figure 7.24**).

7.25 Emotional well-being and pro-social attitudes of friends, Grade 9 and 10 students (%)



Pro-social attitudes are also related to emotional well-being. As seen in **Figure 7.25**, 46% of students in the group with low levels of pro-social attitudes among their friends also have low emotional well-being (and only 19% have high emotional well-being); 42% of students in the group that have a high pro-social attitudes score also have high emotional well-being (and only 21% have a low emotional well-being score).

7.26 Number of psychosomatic symptoms and family affluence (%)**7.27 Emotional well-being and family affluence (%)**

Students from highly affluent families tend to have fewer psychosomatic symptoms (**Figure 7.26**) and higher emotional well-being (**Figure 7.27**) than students from families low in affluence. Students from families with moderate affluence occupy a middle position between the other two groups with respect to emotional well-being (**Figure 7.27**), but are quite similar to the students from highly affluent families in terms of psychosomatic symptoms (**Figure 7.26**).



Summary

While emotional health tends to be similar for both boys and girls in Grade 6, by Grade 10, girls clearly are experiencing poorer emotional health than boys. The critical period for girls appears to be between Grades 6 and 7, when their emotional health becomes markedly poorer. This gender gap seems to be increasing from previous years of the survey.

All four contexts – home, school, peers, and socio-economic status – show a relationship to emotional health. With respect to the home setting and socio-economic conditions, parent trust and communication is much more critical to understanding emotional health than living with both parents or family affluence. Similarly, quality of school experience (attitude towards school) is more important than academic achievement. Finally, pro-social attitudes of friends are more important than communication with friends for emotional health and well-being.

In each of these contexts, the issues with the greatest impact on emotional health are also the issues most amenable to intervention efforts. By understanding the contributing contextual factors, educators and health care professionals should be better able to develop targeted intervention programs.



References

- 1 Pedersen, J., and T. Aarkrog (2001). A 10-year follow-up study of an adolescent psychiatric clientele and early predictors of readmission. *Nordic Journal of Psychiatry*, 55:11-16.
- 2 BC Partners for Mental Health and Addictions (2006). *Personal costs of mental disorders and addictions*. Retrieved May 3, 2007 from <http://www.heretohelp.bc.ca/publications/factsheets/personalcosts.shtml>

8

Conclusion

The last chapter of the report begins with an overview of HBSC findings regarding the health behaviours and health outcomes of Canada's young people. It also highlights the influence of well-known factors such as age and gender on youth health. There are a number of positive trends as well as some ongoing concerns since the last HBSC survey in 2002.

Later in the chapter, we examine the relationships between the four social contexts – home, school, peers, and socio-economic conditions – and the health of young people to identify whether there are recurring patterns. At the same time, we emphasize that data patterns do not necessarily equal cause and effect relationships. Thus, we also raise important questions about how these contexts might operate.

Finally, we briefly discuss the implications of these findings for school and health personnel, policy-makers, researchers, students, and families. In particular, we conclude that youth health interventions are required at multiple levels.



Overview of health behaviours and health outcomes in Canada's young people

Healthy living and healthy weight

There are several troublesome findings in this area. First, the percentage of physically inactive and sedentary young people in Canada is alarmingly high. In contrast, the percentage of children and youth reporting frequent fruit, vegetable, and milk consumption is alarmingly low. Given these findings, it is not surprising that 1 in 5 Canadian students are overweight or obese.

Health risk behaviours

This area shows a number of very positive trends since 2002. A significant decline in daily smoking is noticeable in both Grade 10 boys and Grade 10 girls. Consumption of beer, wine, and liquor and spirits has declined. Although fewer than 10% of students report drinking coolers at least once a week, these might be replacing more traditional alcoholic drinks. The proportion of Grade 10 students getting “really drunk” twice or more has declined slightly, yet almost 40% of all students surveyed still report this practice.

The proportion of boys in Grade 10 who report ever trying cannabis has dropped significantly. Heavier use of cannabis among students is quite low, although girls and boys are equally involved. A substantial number of drugs show a decline in use. Only ecstasy and medical drugs to get stoned show increases, and only for girls. The use of magic mushrooms is reported by a minority of students.

The proportion of sexually active students has not changed since the last HBSC survey. Around 20% of students in Grade 9 and 25% of students in Grade 10 report having had sexual intercourse. Condoms are still the method of choice for contraception in Grades 9 and 10; however, students’ decisions to use condoms seem more motivated by the intention to protect themselves from infection, rather than to prevent pregnancy. While birth control pills are the second method of contraceptive choice for students, withdrawal is still reported as a contraceptive practice by students in both grades, particularly by girls in Grade 10. Over one-third of students in Grade 9 and almost half of students in Grade 10 indicate not using any measure to prevent pregnancy.

Bullying and fighting

Both encouraging and worrying trends are evident in bullying and violent behaviour among young people. First, bullying remains a significant problem in Canada, with an alarming proportion of students reporting involvement in bullying, either as the aggressor, the victim, or both. Since 2002, however, most forms of bullying have decreased, although racial harassment of both boys and girls has increased, especially in primary school grades. The way that young people are victimized differs by gender. Boys are more likely to be victimized by physical and verbal bullying, whereas girls are more likely to be victimized by indirect and cyber bullying. Sexual harassment is higher for boys than girls in Grades 6 and 7, while the opposite is true in Grades 9 and 10.

In contrast, fighting behaviour has increased since 2002, especially in lower grades. Although more boys report fighting than girls, there are notable differences in whom they fight with. For example, boys are more likely to fight with strangers, whereas girls are more likely to fight with those they know.

Injury and physical trauma

Injury continues to be a leading health problem among Canadian young people. Large proportions of students, as many as 31 to 48%, report one or more medically-treated injuries in a 12-month period. These injuries are often serious, in that they require substantial medical treatment, and result in significant time lost from school or usual activities, reaching as high as 2452 days missed per 1000 students over one year. The cumulative burden of these injuries on youth populations and our society is enormous.

Emotional health and well-being

The influence of gender on emotional health presents increasing challenges among young people. For example, while emotional health tends to be similar for both boys and girls in Grade 6, by Grade 10, girls clearly are experiencing poorer emotional health than boys. The critical period for girls appears to be between Grades 6 and 7, when their emotional health becomes markedly poorer. This gender gap seems to be increasing from previous years of the survey.

Settings for youth health interventions

Traditionally, youth health interventions have focused on increasing healthy living practices, reducing risk behaviours and bullying/violence, and avoiding injuries and emotional health problems. A context approach to health suggests that these health objectives are achieved in particular settings (i.e., home, school, peer) and under particular conditions (i.e., socio-economic). Thus, knowing as much as possible about the contexts within which health interventions may be positioned is very important.

In the following discussion, we summarize the health-promoting and health-damaging relationships between the four contexts which have been central to our report and the above health intervention objectives. We indicate the strength and direction of these patterns as follows:

- ↑↑ highly increased likelihood of the youth health behaviour/outcome
- ↑ some increased likelihood
- ↓↓ greatly decreased likelihood
- ↓ some decreased likelihood
- no (or weak) relationship between the context and the youth health behaviour/outcome

In this way, we can be aware that improving one contextual factor may have supportive, or even contradictory, effects on different health interventions and outcomes.



The home setting

8.1 Youth health behaviours/outcomes and the home

	Living with both parents	Higher parent trust and communication
Healthy living and healthy weight		
Being active five or more days in a typical week	⊖	↑↑↑
Eating fruits once a day or more	↑↑↑	↑↑↑
Eating vegetables once a day or more	↑↑↑	↑↑↑
Drinking low-fat/skim milk once a day or more	↑↑↑	↑↑↑
Eating sweets once a day or more	⊖	⊖
Drinking non-diet soft drinks once a day or more	↓	↓
Being obese	⊖	⊖
Health risk behaviours (Grades 9 & 10)		
Smoking daily	↓↓↓	↓↓↓
Getting drunk at least twice	↓↓↓	↓↓↓
Using cannabis in last 30 days	↓↓↓	↓↓↓
Having had sexual intercourse	↓↓↓	↓↓↓
Bullying and fighting		
Being victimized	↓↓↓	↓↓↓
Bullying others	↓↓↓	↓↓↓
Being both a bully and a victim	↓↓↓	↓↓↓
Injury and physical trauma		
Sustaining a serious injury in the past year	↓	⊖
Emotional health and well-being		
Fewer psychosomatic symptoms	↑↑↑	↑↑↑
High emotional well-being	↑↑↑	↑↑↑

Students living with both parents...

...have a highly increased likelihood of:

- engaging in some healthy living behaviours (consuming fruits, vegetables, and low-fat milk)
- having better emotional health and well-being

...have a greatly decreased likelihood of:

- engaging in risk behaviours
- being involved in bullying

...have some decreased likelihood of:

- consuming non-diet soft drinks
- sustaining a serious injury

...have the same likelihood as other students of:

- being active; consuming sweets; being obese

Students with higher parent trust and communication...

...have a highly increased likelihood of:

- engaging in some healthy living behaviours (being active; consuming fruits, vegetables, and low-fat milk)
- having better emotional health and well-being

...have a greatly decreased likelihood of:

- engaging in risk behaviours
- being involved in bullying

...have some decreased likelihood of:

- consuming non-diet soft drinks

...have the same likelihood as other students of:

- consuming sweets; being obese
- sustaining a serious injury

Overall, the home setting's most positive association is with risk behaviours, bullying involvement, and emotional health outcomes in young people, but only partially with healthy living practices, and not with injuries.

The school setting

8.2 Youth health behaviours/outcomes and the school

	Higher academic achievement	Better attitude towards school
Healthy living and healthy weight		
Being active five or more days in a typical week	↑↑	↑↑
Eating fruits once a day or more	↑↑	↑↑
Eating vegetables once a day or more	↑↑	↑↑
Drinking low-fat/skim milk once a day or more	↑↑	↑
Eating sweets once a day or more	↓↓	↓↓
Drinking non-diet soft drinks once a day or more	↓↓	↓↓
Being obese	↓↓	⊖
Health risk behaviours (Grades 9 & 10)		
Smoking daily	↓↓	↓↓
Getting drunk at least twice	↓↓	↓↓
Using cannabis in last 30 days	↓↓	↓↓
Having had sexual intercourse	↓↓	↓↓
Bullying and fighting		
Being victimized	↓↓	↓↓
Bullying others	↓↓	↓↓
Being both a bully and a victim	↓↓	↓↓
Injury and physical trauma		
Sustaining a serious injury in the past year	↓↓	↓↓
Emotional health and well-being		
Fewer psychosomatic symptoms	↑↑	↑↑
High emotional well-being	↑↑	↑↑
Students with higher academic achievement... ...have a highly increased likelihood of:	Students with a better attitude towards school... ...have a highly increased likelihood of:	
• engaging in healthy living behaviours	• engaging in some healthy living behaviours (being active; consuming fruits and vegetables)	
• having better emotional health and well-being	• having better emotional health and well-being	
...have a greatly decreased likelihood of:	...have some increased likelihood of:	
• consuming sweets and non-diet soft drinks; being obese	• consuming low-fat milk	
• engaging in risk behaviours	...have a greatly decreased likelihood of:	
• being involved in bullying	• consuming sweets and non-diet soft drinks	
• sustaining a serious injury	• engaging in risk behaviours	
	• being involved in bullying	
	• sustaining a serious injury	
	...have the same likelihood as other students of:	
	• being obese	

Overall, the school setting appears to have a positive association with most youth health behaviours and outcomes.

The peer context

8.3 Youth health behaviours/outcomes and peers

	Better pro-social attitudes of friends	Better communication with friends
Healthy living and healthy weight		
Being active five or more days in a typical week	↑↑	↑↑
Eating fruits once a day or more	↑↑	↑↑
Eating vegetables once a day or more	↑↑	↑
Drinking low-fat/skim milk once a day or more	↑↑	⊖
Eating sweets once a day or more	↓↓	⊖
Drinking non-diet soft drinks once a day or more	↓↓	↑
Being obese	⊖	⊖
Health risk behaviours (Grades 9 & 10)		
Smoking daily	↓↓	⊖
Getting drunk at least twice	↓↓	↑↑
Using cannabis in last 30 days	↓↓	↑↑
Having had sexual intercourse	↓↓	↑↑
Bullying and fighting		
Being victimized	↓↓	↓↓
Bullying others	↓↓	⊖
Being both a bully and a victim	↓↓	⊖
Injury and physical trauma		
Sustaining a serious injury in the past year	↓	⊖
Emotional health and well-being		
Fewer psychosomatic symptoms	↑↑	⊖
High emotional well-being	↑↑	↑↑

Students whose friends have better pro-social attitudes...

- ...have a highly increased likelihood of:
 - engaging in many healthy living behaviours
 - having better emotional health and well-being
- ...have a greatly decreased likelihood of:
 - consuming sweets and non-diet soft drinks
 - engaging in risk behaviours
 - being involved in bullying
- ...have some decreased likelihood of:
 - sustaining a serious injury
- ...have the same likelihood as other students of:
 - being obese

Students who have better communication with their friends...

- ...have a highly increased likelihood of:
 - engaging in some healthy living behaviours (being active; consuming fruits)
 - engaging in many risk behaviours
 - having a high emotional well-being score
- ...have some increased likelihood of:
 - consuming vegetables and non-diet soft drinks
- ...have a greatly decreased likelihood of:
 - being victimized
- ...have the same likelihood as other students of:
 - consuming low-fat milk and sweets; being obese
 - smoking daily
 - bullying others; being a bully-victim
 - sustaining a serious injury
 - having fewer psychosomatic symptoms

The peer context has mixed results. Friends' pro-social attitudes are associated with most positive youth health behaviours and outcomes. Good communication with friends, however, is associated both with positive and negative health behaviours/outcomes. Overall, the peer context may have both protective and risky influences on youth health.

Socio-economic conditions

8.4 Youth health behaviours/outcomes and socio-economic conditions

High family affluence	
Healthy living and healthy weight	
Being active five or more days in a typical week	↑↑
Eating fruits once a day or more	↑↑
Eating vegetables once a day or more	↑↑
Drinking low-fat/skim milk once a day or more	↑↑
Eating sweets once a day or more	⊖
Drinking non-diet soft drinks once a day or more	↓↓
Being obese	↓↓
Health risk behaviours (Grades 9 & 10)	
Smoking daily	↓↓
Getting drunk at least twice	⊖
Using cannabis in last 30 days	⊖
Having had sexual intercourse	↓↓
Bullying and fighting	
Being victimized	⊖
Bullying others	↑↑
Being both a bully and a victim	↑
Injury and physical trauma	
Sustaining a serious injury in the past year	↑↑
Emotional health and well-being	
Fewer psychosomatic symptoms	↑↑
High emotional well-being	↑↑

Students with high family affluence...

...have a highly increased likelihood of:

- engaging in many healthy living behaviours
- bullying others
- sustaining a serious injury
- having better emotional health and well-being

...have some increased likelihood of:

- being a bully-victim

...have a greatly decreased likelihood of:

- consuming non-diet soft drinks; being obese
- engaging in some risk behaviours (smoking daily and having sexual intercourse)

...have the same likelihood as other students of:

- consuming sweets
- engaging in some risk behaviours (getting drunk and using cannabis)
- being victimized

Overall, socio-economic conditions appear to be associated with good emotional health outcomes and most healthy living practices. These conditions are associated with fewer risk behaviours, but are negatively associated with serious physical injuries and bullying others.

Summary

There is remarkable overall consistency in the patterns of the four social contexts in the health behaviours and outcomes of young people in Canada. Although some of these relationships have been observed in research with smaller groups, the 2006 HBSC study is the first broad investigation of such relationships in a nationally representative population of Canadian youth at this age level.

These various contexts for youth health seem to follow a particular order of frequency: from most consistent positive influence (school), to positive or neutral influences (home), to less frequent positive or more frequent negative influences (socio-economic conditions and peers). In particular:

- Assets at the school level are consistently and strongly associated with positive health behaviours and outcomes.
- Home and family assets are usually associated with positive health behaviours and outcomes. There are neutral relationships between particular family assets and injuries, physical activity, and obesity.
- Socio-economic assets are partially associated with positive health behaviours, including not smoking (in girls) and not having had sexual intercourse (both sexes). Socio-economic assets are not, however, associated with alcohol or cannabis use. Socio-economic advantages are associated with positive health outcomes, but also with higher risks of injury and bullying others.
- Peer and friend assets have both positive and negative associations with health (i.e., mixed influences for risk behaviours).

This order could indicate the best *opportunity* for success in interventions, that is, a focus on the home and school settings. At the same time, the reverse order could indicate the greatest *need* for interventions within the peer context and in social income policy.

The contextual measures that were chosen for this analysis may have partly determined these conclusions. For example, a measure of parental occupation (instead of family affluence) or a measure of parental monitoring (instead of parental trust and communication) may have yielded different results.

Since the HBSC study only collects data from students attending regular schools, we might be over-estimating the importance of the school setting. If the HBSC sample included young people who were being educated at home and/or street youth, the home setting and peer context might show increased associations with youth health.

Nonetheless, the preliminary view of youth health behaviours, outcomes, and social contexts presented in this report yields some fascinating questions, for example:

- If youth behaviours “lead to” health outcomes, why are the contexts of home and socio-economic conditions mostly associated with emotional health outcomes, but less with health behaviours?
- Why are physical health outcomes (injuries, obesity) less often associated with these four contexts than emotional health outcomes?
- Do some contexts that are more stable (for example, socio-economic conditions, family structure, and academic potential) “set the stage” for youth health, while others that are more fluid (for example, school atmosphere, friends’ pro-social attitudes, and parent communication patterns) “direct the action”?
- How are certain contexts linked to each other? For example, high parent trust and communication and good communication with friends seem to have opposite associations with most risk behaviours.
- Similarly, do good communication skills and high pro-social attitudes of friends create conflict for young people in risk-taking situations?
- How do multiple contexts, for example good home and school contexts together, maximize youth health? More importantly, can a good home or school setting counterbalance a poor socio-economic context?

Clearly, the answers to these questions will take further basic research and applied evaluation of youth health interventions in different contexts. Four categories, as described in the scientific literature,¹ can be used to describe actions that could be taken:

- strengthening youth and peer groups
- strengthening families
- improving school and neighbourhood conditions
- promoting social policy improvements.

Priority setting and planning are key elements of interventions and should take into account current knowledge about the health status of Canadian young people, their health problems, and trends over time. As well, further insights into the health contexts in which action occurs are essential. We hope that this fifth Canadian HBSC report adds concrete evidence to be applied in such planning.

Reference

- 1 Whitehead, Margaret (2007). A typology of actions to tackle social inequalities in health. *Journal of Epidemiology and Community Health*, 61:473-478. doi 10.1136/jech.2005.037242

APPENDIX: Methodology

The sample

The international HBSC data file requires samples of young people aged 11, 13, and 15 years. In order to achieve these age groups, the Canadian research team samples students in Grades 6 through 10. A systematic, single-stage cluster sample approach is used to select whole classes of students from across Canada to participate in the study. As a requirement of the international protocol, the sample is drawn to be self-weighting. Classes are identified using school directories and lists. The number of classes in specific schools is estimated based on the grades in the school, the numbers of teachers, the total enrollment, and enrollment by grade depending on the province. Classes are given an approximately equal chance of being selected and are ordered on the sample lists according to school jurisdiction, province, language of instruction, public/Roman Catholic designation, community size, and community location within a province. Classes are therefore proportionally distributed according to these characteristics. Private and special schools are not included in the sample. School boards are then approached for permission.

Participation in the survey is voluntary. Parental consents, approved by Queen's University's General Research Ethics Board, are required for students to participate in the survey. At the student level, 74% of the estimated students in the sample participated in 2005-06. Fewer than 10% of students declined to participate or spoiled their questionnaires intentionally. For the remainder, the most common reasons for student non-participation are attributed to: failure to return consent forms; failure to receive parental consent; or absence on the day of survey administration.

Data collection

The student questionnaires are administered to school classes by teachers and are designed to be filled out during one 40-minute class. While there are one or two open-ended questions, almost all of the questions can be answered by checking off a response option. Students are guaranteed anonymity by sealing their unsigned survey in an envelope and teachers are asked to closely follow a specific set of instructions regarding active consent and survey administration.

Data management

Completed questionnaires are returned to Queen's University. Data are entered manually by data entry clerks into simple text files for incorporation into the statistics software package SPSS. Sample batches of questionnaires from each clerk are tested for accuracy, problem areas are addressed, and if errors are identified they are corrected. The data cleaning includes an analysis of out-of-range values and inconsistencies across related questions. Individual questionnaires with suspicious response patterns or that are clearly not filled out in a serious manner are considered for exclusion from the data set.

Sampling limitations and sources of bias

Despite the comprehensiveness of the HBSC survey and the use of a representative sample, there are some important limitations in relation to the sampling methodologies and to reliance on self-administered questionnaires.

Since the school class is the unit/cluster employed in the sampling procedure, it is possible that those who make up a cluster may have a lot in common in terms of behaviours and/or attitudes. For example, they may have access to the same cafeteria food or share similar views about a teacher or their school. On the other hand, relationships with parents or student patterns of headaches are less likely to be shared by classmates. This is called the sample design effect. The effect on the interpretation of results is that the design factor increases the size of confidence intervals for some items on the survey, relative to what it would be for a random sample of students. For most items on the survey, the design factor increases the confidence interval by less than 1% in either direction.

The most likely source of bias in the HBSC survey is due to the fact that participating students are required to provide parental consent, as well as giving consent themselves, in order to participate. It is reasonable to expect that those who do not return parental consent forms and those who decline may not share the characteristics that are prevalent among the participating students. For example, students who do not return parental consents may be less likely to have positive communication with their parents.

Survey administration limitations and sources of bias

Some students' responses to survey questions may be influenced by the following factors:

- Communication between students during survey administration or lack of privacy with students sitting too close to each other.
- Student interpretation of the survey questions (i.e., how they understand the question when they read it; some of the questions are long and if read quickly might be misinterpreted).
- Student characteristics such as their cultural and religious beliefs that might influence how they respond to some sensitive questions.
- Limitations in students' memory in recalling behaviours and events that happened in the past year.
- A desire to present oneself in a positive way, especially if students do not trust that their responses will be treated confidentially.
- A desire to promote a certain image that is acceptable to peers, since students may discuss the way they responded to some of the items.
- Teacher and student level of interest in completing the survey.

- Time of day when students in schools complete the survey (e.g., they could be tired and unable to concentrate at the end of day).

Reliability/validity

A survey is considered to have high reliability when students give the same responses to the survey questions on two separate occasions during a short time frame. It is not possible to assess reliability by having students complete the HBSC survey on two different occasions, because of the complicated logistics of repeating survey administration in schools across Canada. Reliability of the questions is verified by testing the relationships in a subset of questions after the surveys have been completed, to see how the responses to similar questions are answered and if they actually measure the same thing (see Composite scale measures later in this Appendix). Reliability is necessary, but not sufficient, to establish validity.

A survey is considered to have high validity when it accurately measures what it is supposed to measure. Validity is sometimes estimated by comparing survey results to another measure (e.g., comparing smoking self-reports to saliva nicotine levels; comparing self-reports of academic achievement to actual school grades). Validity can also be estimated by determining whether certain questions assessed by the survey relate to other questions in predictable ways (e.g., testing whether a question about intelligence is related to grades in school, because intelligence is expected to relate to progress in school). Estimating the validity of some of the HBSC questions is possible by comparing our findings to other surveys in Canada. For example, in the 2001-02 survey, we found that there was a significant decline in the proportion of girls in Grade 10 who were smoking. Other studies in Canada found similar results, which gave more credibility to our findings.

Composite scale measures

A **parent trust and communication scale** was developed based on the following six survey items: How easy is it for you to talk to Father about things that really bother you?; How easy is it for you to talk to Mother about things that really bother you?; My parents understand me; I have a happy home life; My parents trust me; and What my parents think of me is important. For the first two items, the response options in the 2006 survey were: very easy=5, easy=4, difficult=3, very difficult=2, and don't have or see this person=1. For the last four items, the response scale was: strongly agree=5, agree=4, neither agree nor disagree=3, disagree=2, and strongly disagree=1. Only those students with complete data for the six items were included in this measure. The responses across the six items were summed and the resulting score was recoded into thirds (low, middle, and high) for presentation. The reliability of the scale as measured by Cronbach's alpha is .80.

An **attitude towards school scale** was developed based on the following nine survey items: The rules in this school are fair; Our school is a nice place to be; I feel I belong at this school; I am encouraged to express my own views in my class(es); Our teachers treat us fairly; When I need extra help, I can get it; My teachers are interested in me as a person; Most of my teachers are friendly; and How do you feel about school at present? For the first eight items, the response scale was: strongly agree=1, agree=2, neither agree nor disagree=3, disagree=4, and strongly disagree=5. For the ninth item, the response scale was: I like it a lot=1, I like it a bit=2, I don't like it very much=4, and I don't like it at all=5 (note: although originally on a scale of 1 to 4, this item was converted to a 1 to 5 scale with no middle category to give it the approximate weight of the other variables). The responses were reversed for positively worded items. Only those students with complete data for the nine items were included for this measure. The responses across the nine items were then summed and the resulting score was recoded into thirds (low, middle, and high) for presentation. The reliability of the scale as measured by Cronbach's alpha is .87.

A **communication with friends scale** was developed based on the following three items: How easy is it for you to talk to friends of the same sex about things that really bother you?; How easy is it for you to talk to friends of the opposite sex about things that really bother you?; and How easy is it for you to talk to your best friend about things that really bother you? The response options for the three items were: very easy=5, easy=4, difficult=3, very difficult=2, and don't have or see this person=1. Only those students with complete data for these three items were included in the measure. The responses across the three items were summed and the resulting score was recoded into thirds (low, middle, and high) for presentation. The reliability of the scale as measured by Cronbach's alpha is .74.

A **pro-social attitudes of friends scale** was developed for Grade 9 and 10 students only, based on three survey questions: My friends like school; My friends think good marks are important; and My friends get along with their parents. The response options for the three items were: none=1, a few=2, some=3, most=4, and all=5. Only those students with complete data for the three items were included in the measure. The responses across the three items were summed and the resulting score was recoded into thirds (low, middle, and high) for presentation. The reliability of the scale as measured by Cronbach's alpha is .68.

Four measures were used in the development of a **family affluence scale**: Does your family own a car, van or truck?; Do you have your own bedroom for yourself?; During the past 12 months, how many times did you travel away on holiday (vacation) with your family?; and How many computers does your family own? The items were recoded as follows: having one's own bedroom – no=0 and yes=1; family ownership of a car – zero=0, one=1, and two or more=2; going on holiday/vacation (in the past 12 months) – not at all=0, once=1, twice or more=2; and family ownership of a computer – none=0, one=1, and two or more=2. Only those students with complete data for the four items were included in the measure. The responses across the four items were summed and the resulting score was recoded into low, moderate, and high. The three groups are calculated according to the HBSC international protocol and are not thirds.

A **psychosomatic symptoms scale** was developed based on the following eight survey items: In the last 6 months, how often have you had the following: headache, stomach ache, backache, feeling low (depressed), irritability or bad temper, feeling nervous, difficulties in getting to sleep, and feeling dizzy. The response scale for each item was: about every day=1, more than once a week=2, about every week=3, about every month=4, and rarely or never=5. Only those students with complete data for the eight items were included for this measure. The psychosomatic symptoms scale is a count of the number out of the eight items on which a student responded about every day, more than once a week, or about every week.

An **emotional well-being scale** was developed based on the following nine survey items: I have trouble making decisions; I am often sorry for the things I do; I have confidence in myself; I often wish I were someone else; I often feel helpless; I would change how I look if I could; I often feel left out of things; I often feel lonely; and I often have a hard time saying no. For each of the items, the response scale was: strongly agree=1, agree=2, neither agree nor disagree=3, disagree=4, and strongly disagree=5. The responses were reversed for the one positively worded item. Only those students with complete data for the nine items were included for this measure. The responses across the nine items were then summed and the resulting score was recoded into thirds (low, middle, and high) for presentation. The reliability of the scale as measured by Cronbach's alpha is .82.

For additional information

The web site for the international HBSC study may be found at <http://www.hbsc.org/>.

Information on the Canadian team may be found at <http://educ.queensu.ca/~speg/>.

HBSC publications may be found through the national funder, the Public Health Agency of Canada, at www.phac-aspc.gc.ca/.

