CHAPTER 8

The School Experience

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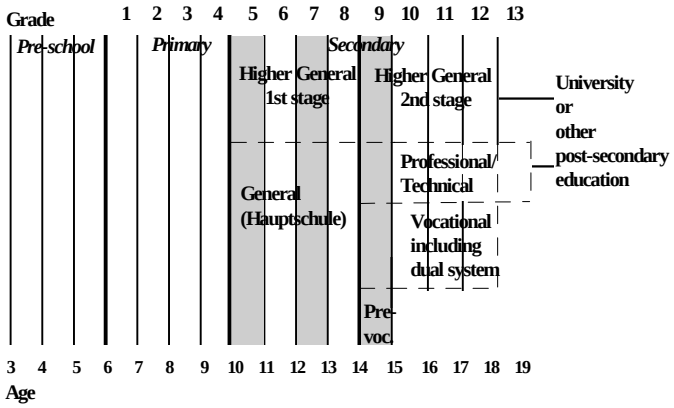
A. Introduction

Children spend much of their lives in activities associated with school, and school experiences exert a powerful impact on their emotional and social development. In this survey the factors that influence the health of youth are broadened to include not only the role of home and peers but also the shaping role of schools. While in the past few years there has been substantial research on what constitutes the good school, there has been virtually no work done on the relationship between the school experience and the physical and mental health of youth. This survey represents an initial effort to fill that gap.

Recognition of the importance school plays in the social, mental and physical health of youth can be seen in the rapidly expanding Network of Health Promoting Schools sponsored by the WHO Regional Office for Europe, the Commission of the European Communities and the Council of Europe. The project varies from school to school in form and purpose because priorities with regard to school health initiatives are defined at the school level. Programs typically involve parents and program goals range from improving cardiovascular fitness to developing positive self-esteem to reducing smoking and alcohol use. The project has expanded to include 24 countries and it is particularly prominent in eastern European countries such as the Czech Republic, Hungary, Poland and Slovakia.

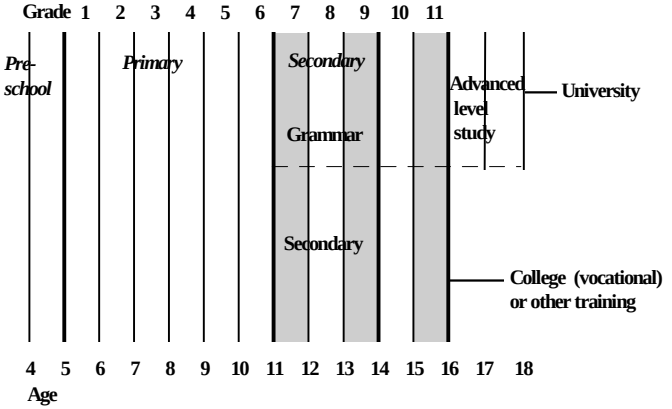
One aim of this survey analysis is to identify the factors that make school more satisfying. In order to do this, how students relate to their teachers and their school peers as well as the degree of involvement of their parents are considered. The relationship between school achievement and overall school satisfaction is examined with a view to determining whether or not there is a relationship between these factors and health. In the final section the influence of school on the social and emotional adjustment and the general health of young people is considered.

Figure 8.1 Austria's educational system



Shaded bars indicate the population from which the sample was drawn.

Figure 8.2 Northern Ireland's educational system



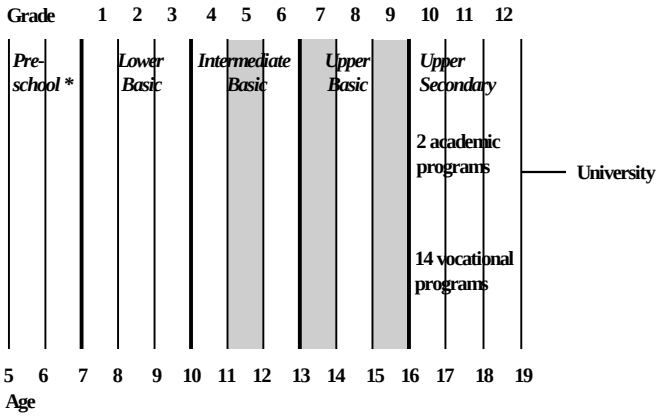
Shaded bars indicate the population from which the sample was drawn.

Although there are many similarities in the structure of the educational systems in the countries participating in the survey, there are some substantial differences in general organization, programs and orientation to students. (Appendix A presents an outline of the educational system of each country.) First, there are critical differences in the ages at which decisions are made regarding the program students take or the type of school they attend. Second, external standardized tests are used differently across systems; for example, some school systems rely much more heavily than others on the results of such tests to guide school or program decisions for students, or to determine which students are eligible to enter post-secondary educational institutions. Third, there are differences across countries in the teaching and learning methods favoured: generally the range is from teacher-centred approaches, which give students little opportunity to make decisions or engage in experiential learning, to less didactic approaches in which students are given varying degrees of responsibility for their own learning.

The need for special education programs for low ability students is recognized in most countries. The three to six percent of students so identified are commonly provided with special programs in the early years of elementary school and then tend to move into vocational programs that typically terminate at age 16. For the most part these students are not included in our surveys because they have difficulty answering the questionnaires.

Some countries require children to make decisions regarding program and course choice very early. In Austria and Germany, for example, students, with parental help, make important program decisions when they are only 10 years of age. The Austrian public education system, outlined in Figure 8.1, is characterized not only by early formal sorting, but also by strong vocationally oriented programs offered in secondary school. These early decisions, which have career implications, involve teachers as well as parents. Students required to make decisions early with such long-term consequences are usually required to make another decision, which further differentiates them by program and/or school, three or four years later. In Northern Ireland and Scotland an external examination given at age 11 is used to guide program selection. At age 11, in the Northern Ireland public education system, all students write an examination to determine whether they attend a grammar (academic) or a secondary school (Figure 8.2).

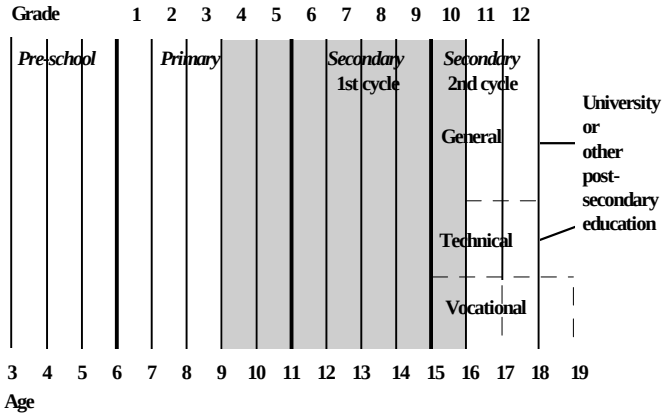
Figure 8.3 Sweden's educational system



Shaded bars indicate the population from which the sample was drawn.

* Six year olds attend a common pre-school year.

Figure 8.4 France's educational system



Shaded bars indicate the population from which the sample was drawn.

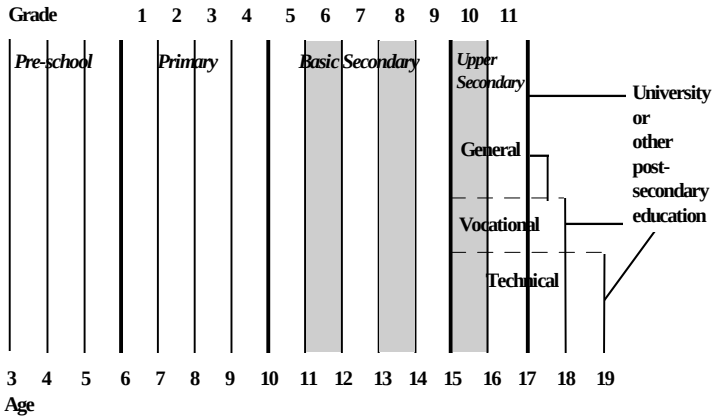
Most countries require students to make program- or school-related decisions in their ninth or tenth year of school. Often the year these decisions are made corresponds to the last required year of school attendance. In most Canadian provinces, students are given opportunities to select courses at different levels of difficulty in grade 10, but it is not always clear how their course-selection decisions relate to various career paths.

The flexibility to change courses or programs allowed students also varies across countries. For example, in Sweden each student selects a specialized program of study after grade 9, but there are substantial opportunities to change programs (Figure 8.3). In other countries, such as France, once the decision is made to enter a particular program at age 15, it is more difficult to change, certainly to change back to a more prestigious program (Figure 8.4).

Some countries delay sorting decisions for most students until the end of secondary school by enabling most students to take essentially the same core courses. Russia is the best example of this approach (Figure 8.5), although their schools allow some specialization in the senior grades of secondary school.

It is important to understand the school structure differences across the countries participating in this study because of their potential impact on the responses of students. The student sample in some countries may be drawn from a school year characterized by external examinations used to guide critical program/school decisions. These circumstances may increase the level of stress experienced by students. On the other hand, in other countries the same age sample may be drawn from a school year where there is little pressure placed on students to make decisions about courses, programs or schools. Each organizational framework has its own influence on how students feel about school, teachers and themselves.

Figure 8.5 Russia's educational system



Shaded bars indicate the population from which the sample was drawn.

Some educational systems are more student centred than others. Under these conditions students are typically given opportunities to make decisions about how and what they learn and are more likely to engage in hands-on learning experiences. The educational system in Denmark is more inclined to take this approach than is the case in some other countries. All 7 to 16 year olds take a common program and both class and special teachers remain with the same group of students. Students at each grade level engage in a weekly period of free discussion to encourage the growth of personal perspectives. Schools in countries such as Finland and Russia tend to be more authoritarian, employing teacher-centred, rote-learning methods which allow students little opportunity to interact with each other. Research on teaching suggests that students tend to be more satisfied with school when they are given some responsibility for decision making and when their classroom experiences are student centred (Tye, 1985; Lightfoot, 1983). According to these studies, students' satisfaction in school is enhanced by the degree to which positive student-teacher relationships and a sense of belonging can be cultivated. Teachers play a critical role in nurturing student self-esteem. If students perceive that they do not belong in the school or feel excluded in any way from school-related activities, they are more likely to disengage themselves from all aspects of school life (King & Peart, 1990). Consistent with these findings, some researchers have indicated that the relationship between self-esteem and school achievement is both mutually reinforcing and teacher mediated (Wiggins et al., 1994). Positive student-teacher interaction on a daily basis seems to benefit students with moderately low self-esteem and may better enable students to develop their individual interests and skills by engendering an atmosphere of belonging and independence. Therefore, we would expect that students from countries with a student-centred approach to teaching and learning, similar to that used in Denmark, would have a more satisfying school experience.

There are important differences from country to country in the use of failing grades. Some (e.g., Norway and Sweden) allow all students to move on with their age group while others (e.g., Belgium and France) hold back students judged to have been unsuccessful in completing the work of a grade. These differences profoundly affect social interaction in a class as well as student motivation and satisfaction with school.

B. Achievement

Is there any relationship between student perceptions of their school achievement and other health and school-related factors? Figure 8.6 lists factors associated with school achievement using aggregated data. It is not surprising to find that school achievement is related to other aspects of satisfaction with school, such as good relationships with teachers and liking school. Since above-average achievement in school is not accessible to all students, the general feeling of well-being that appears to be associated with school success is not available to all students. There are many positive attributes associated with good school achievement, such as confidence, general good health and an absence of stress, that are particularly prominent for the 11 year olds. Note that high achievers are less likely to smoke; reasons for this are suggested in Chapter 9.

Grading schemes differ from country to country, and it is virtually impossible to make letter grades and percentages compatible. To achieve some level of standardization, a simple measure of achievement was used in this study: the students were asked what their teachers think of their work in school. They were given four response alternatives: very good, good, average and below average. The proportion of respondents who answered very good and good is shown in Figure 8.7.

The range of students who indicated their school work was good or very good was quite wide, from a low of 24 percent for Latvian 13-year-old boys to a high of 85 percent for 11-year-old Polish girls. Polish and Canadian students were most positive about their school work among the 11 and 13 year olds and Canada retained its highest ranking among the 15 year olds. Interestingly, Germany, with its early sorting of students into distinct programs, produced low rankings of good and very good work for the 13 and 15 year olds, and Russia, which encourages all students to take the same course program, produced the lowest ranking for the 11 year olds and a ranking closer to mid-range for 15 year olds.

Figure 8.6 Factors associated with achieving well in school

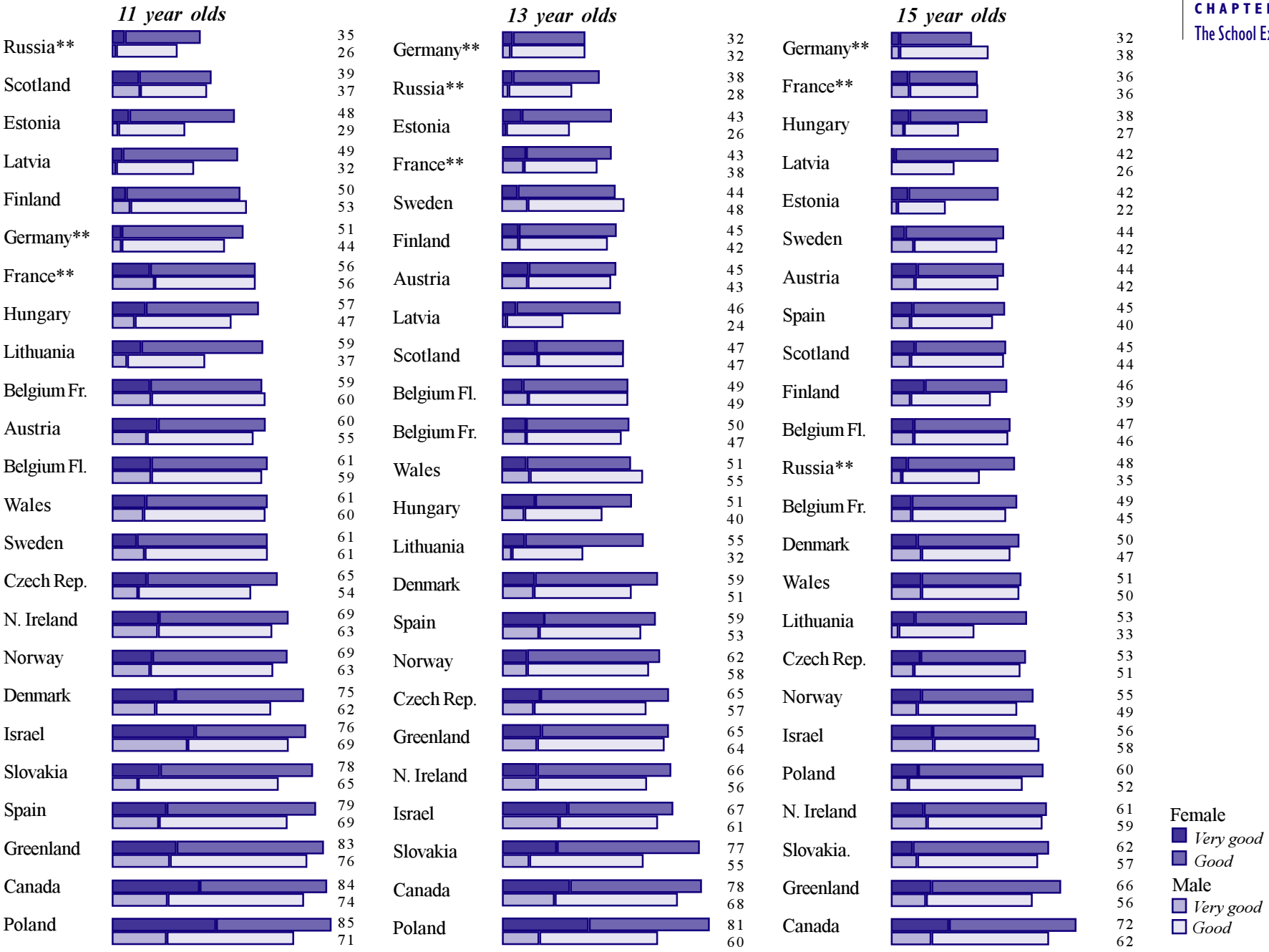
Students who achieve well in school are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Like school	●	●	●	●	●	●
Feel teachers show personal interest in them	○	●	○	○	○	○
Feel happy	●	●	●	○	○	—
Be satisfied with their appearance	○	●	○	○	—	—
Not smoke cigarettes	—	—	○	○	○	○
Say teachers encourage them to express their own views	—	—	○	○	○	○
Feel confident	○	●	—	○	—	—
Feel healthy	○	○	○	—	—	—
Not feel stressed at school	○	○	—	—	—	—
Say teachers treat them fairly	—	—	—	—	○	○
Be well integrated socially	○	○	—	—	—	—
Say parents are willing to come to school to talk with teachers	○	○	—	—	—	—

Correlation coefficient: ○ .15 to .19 ● .20 to .29

In most countries where gender differences were evident, more of the girls than the boys viewed their work as good or very good. The exceptions were Swedish and Welsh 13-year-old boys and German 15-year-old boys. However, gender differences tended to be quite small in France, Belgium (Fl. and Fr.) and Scotland. Although gender differences on standardized subject aptitude tests tend to be relatively small, in the past 15 years the school achievement of girls in western countries has been consistently higher than that of boys (Randhawa, 1991; Eccles, 1987).

It is not surprising to find that as the need to differentiate among students through the use of examinations increased through the grades, the proportion of students who see themselves achieving at a good or very good level declined. The drop is most pronounced in Spain and least pronounced in Latvia and Lithuania. Russia is the

Figure 8.7 Students' perceptions of their school achievement* (%)



* *Switzerland did not include this item.*

** *France, Germany and Russia are represented only by regions: see Chapter 1 for details.*

only country where students' perceptions of their school work improved over the three age groups. Countries such as Canada and Slovakia, where students take common programs, tended to have more students who reported themselves to be in the high achievement categories.

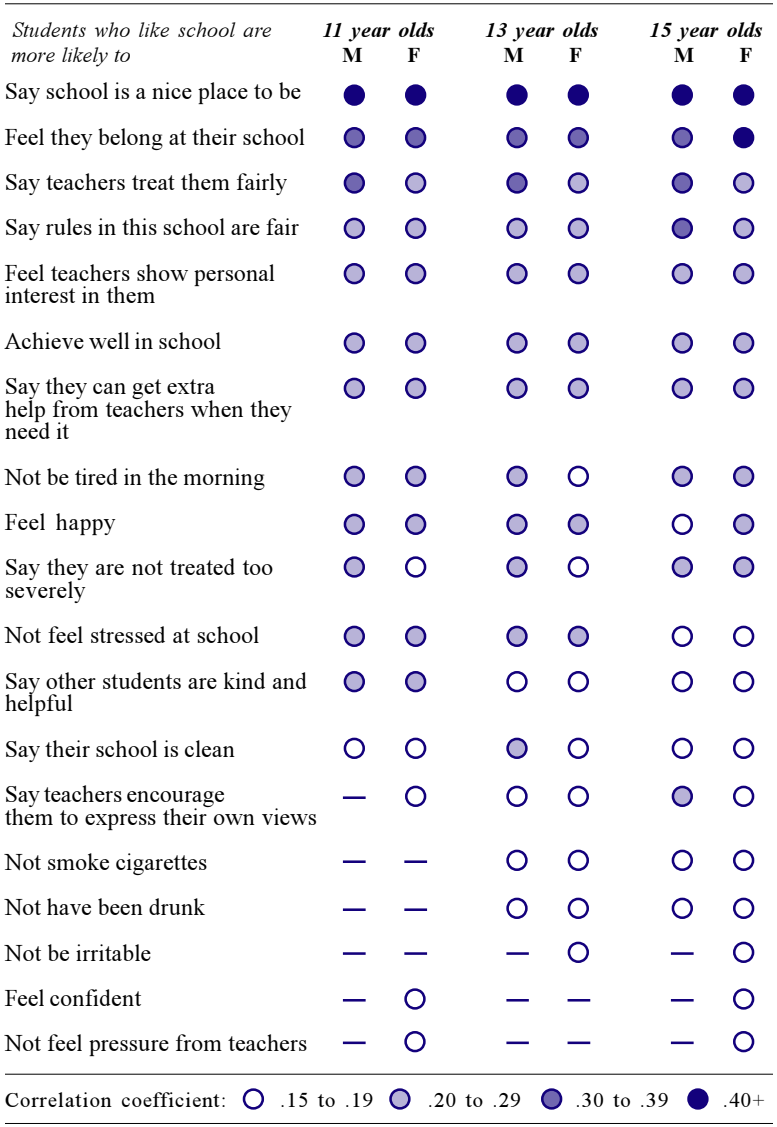
C. Satisfaction with school

Figure 8.8 lists the factors most strongly correlated with liking school using data from all countries in aggregated form. Not surprisingly, the other school-related items such as "Our school is a nice place to be" and "I feel I belong in this school" are most strongly correlated with liking school. How students relate to their teachers is also an important component of liking school. When the health behaviour items, such as smoking and alcohol abuse are examined it becomes clear that the students who engage in these activities are less likely to enjoy school. It is particularly important to restate that a student's satisfaction with school is linked to his/her general sense of well-being.

The purpose of three of the school-related questions is to produce information about students' general attitude toward their school. "Our school is a nice place to be" is concerned with how comfortable and secure students feel in school. "I feel I belong at this school" is designed to measure how well students are accepted by teachers and peers, no matter what their level of achievement or background. Responses to "How do you feel about school at present?" (like it a lot/a little; I don't like it very much/at all) should indicate whether or not the students believe their school is meeting their needs. In other words, it is intended to assess the functional role of schools. This item was only moderately successful in assessing this dimension of school life.

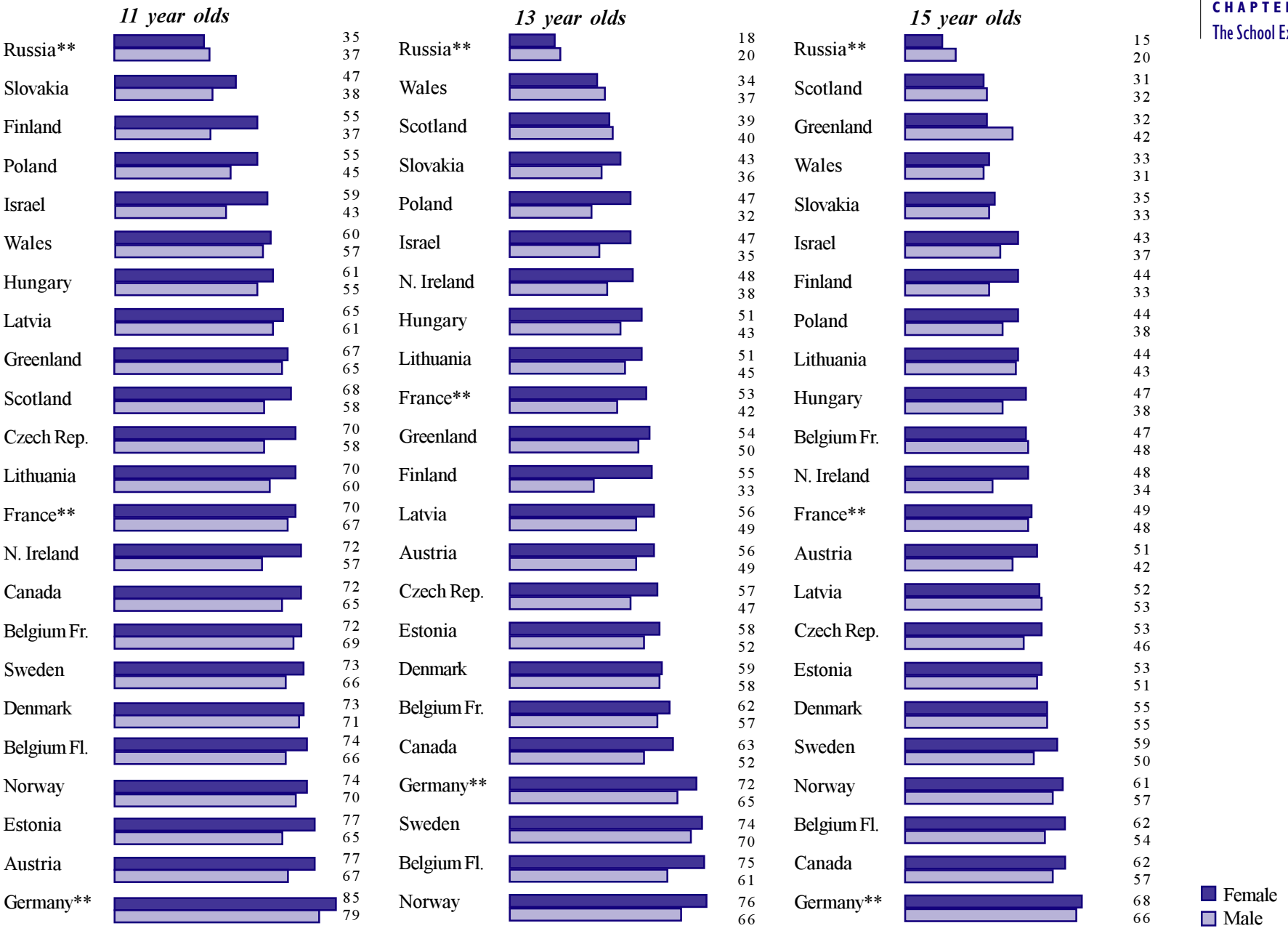
Responses to the school is a nice place item showed that students did not favour any particular pattern of school organization, that is, the timing of major decisions about the selection of programs or courses was not clearly linked to how comfortable or secure students felt in school (Figure 8.9). There were, however, significant

Figure 8.8 Factors associated with liking school



differences by country associated with the approach taken to teaching/learning. Overall, German students were most likely to say that their school is a nice place to be, although 13-year-old students from Belgium (Fl.), Norway and Sweden were equally

Figure 8.9 Students who agreed that their school is a nice place to be* (%)



* *Spain and Switzerland did not include this item.*

** *France, Germany and Russia are represented only by regions: see Chapter 1 for details.*

positive. The Russian system produced schools that were least satisfying for students at all grade levels. Countries characterized by a more student-centred approach to learning such as Canada, Denmark and Sweden did not achieve conspicuously high scores on this measure although all were above the average. Interestingly, the United Kingdom countries, Scotland, Wales and to a lesser extent Northern Ireland, tended to score below the average on this measure.

On all three measures, and at all three grade levels, girls were more likely than boys to feel positive about school. In a very few countries slightly more boys than girls indicated that school is a nice place: Russia (11, 13 and 15 year olds), Wales (13 year olds) and Greenland (15 year olds).

Responses to the I like school and school is a nice place items were strongly correlated, although there were some differences in the countries' rankings on the two measures.

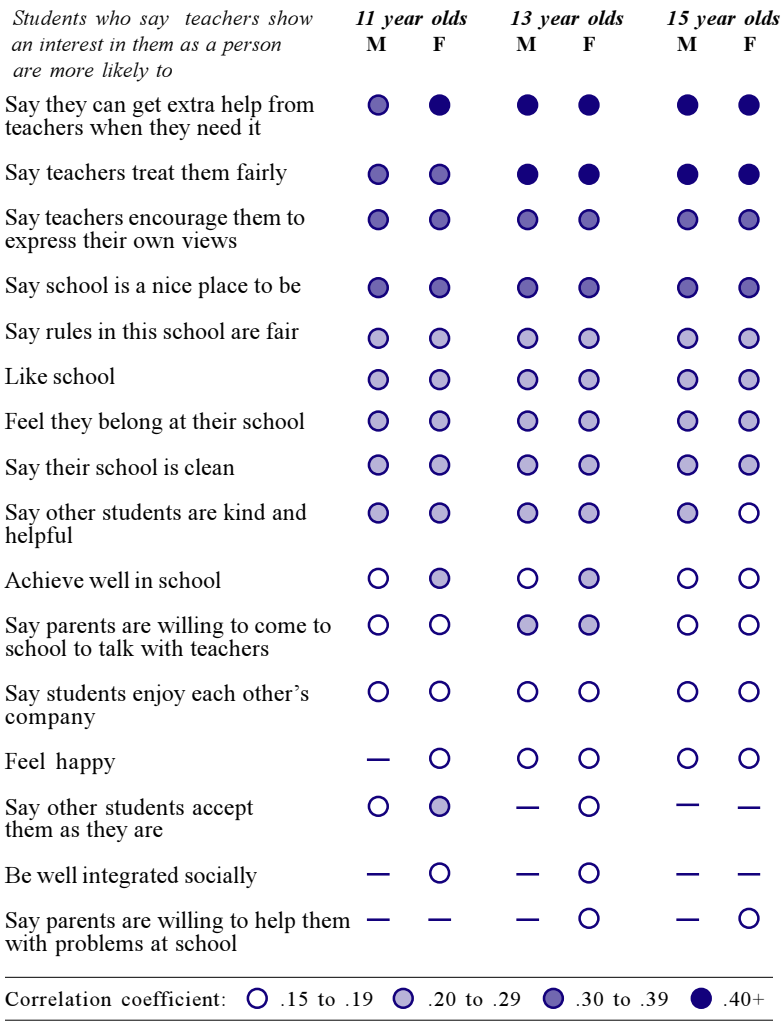
Eleven-year-old boys were most likely to say they feel they belong at their school in Germany (77%), Fr. Belgium (76%), Norway (76%), Austria (73%), Greenland, Hungary and Sweden (all at 72%). Germany was highest for 11-year-old girls (81%), followed by Belgium (Fr.) and Austria (79%), Sweden (77%), Hungary and Norway (75%) and Israel (74%). Russia was among the lowest at all grade levels for both genders. Perhaps surprisingly, in view of its student-centred perspective, Denmark was also relatively low at all three grade levels for both genders. At the 13-year-old level Sweden was highest for both boys and girls (74 and 77%), followed by Germany (67 and 75%), Norway (67 and 69%) and Fr. Belgium (63 and 69%). Among 15 year olds, Swedish girls (69%) were more likely to feel they belong at school followed by German boys and Hungarian girls (63%), Swedish boys and Canadian and Estonian girls (62%).

The decline in the proportion of students who liked school a lot from the 11 year olds to the 15 year olds was quite pronounced. For example, among German girls the proportion dropped from 64 to 21 percent and among Lithuanian girls from 58 to 16 percent. For a few countries there was little change: for example, in Poland the proportion of boys dropped by only one percent. In the countries at the bottom of the rankings the proportion dropped less. There were similar declines across the three age groups on the measures "Our school is a nice place to be" and "I feel I belong at this school".

D. Teachers

Figure 8.10 lists the factors correlated with the item, "Teachers show an interest in me as a person". The other three teacher-relationship items are strongly correlated and together make up an important dimension of school life for students. This point is reinforced by the link to the items school is a nice place, I like school and school rules are fair. These relationships emphasize the importance of the atmosphere established by teachers in the classroom. The moderately strong relationship with the item "My parents are willing to come to school to talk to teachers" is an indication of the importance of developing a good relationship between home and school.

Figure 8.10 Factors associated with feeling teachers show an interest in students as individuals



Young people are strongly influenced by their perceptions of how their teachers view them and the form of their interaction with their teachers. There are differences, noted above, in the approach to teaching from country to country and within countries. It is to be expected that students in countries with more student-centred approaches to the learning process would be more inclined to say their teachers encourage them to express their own views in class. Generally speaking, as can be seen in Figure 8.11, this is the case. The Czech Republic, Finland, Russia and Slovakia were consistently the lowest on this measure while Canada, Israel, Northern Ireland and Scotland tended to be among the highest. However, Belgium (Fr.) was the highest for 11 year olds. Opportunities provided in the Danish educational system for students to discuss issues freely did not appear to give this country a special advantage in positive student-teacher relationships.

The proportion of students who said their teachers encourage them to express their own views declined slightly in most countries as the students progressed through school. However, there was little change across the grade groups in Denmark, Hungary, Norway, Northern Ireland, Scotland and Wales. Gender differences across countries were quite small on this item, although in Northern Ireland at least nine percent more females than males in each age group agreed.

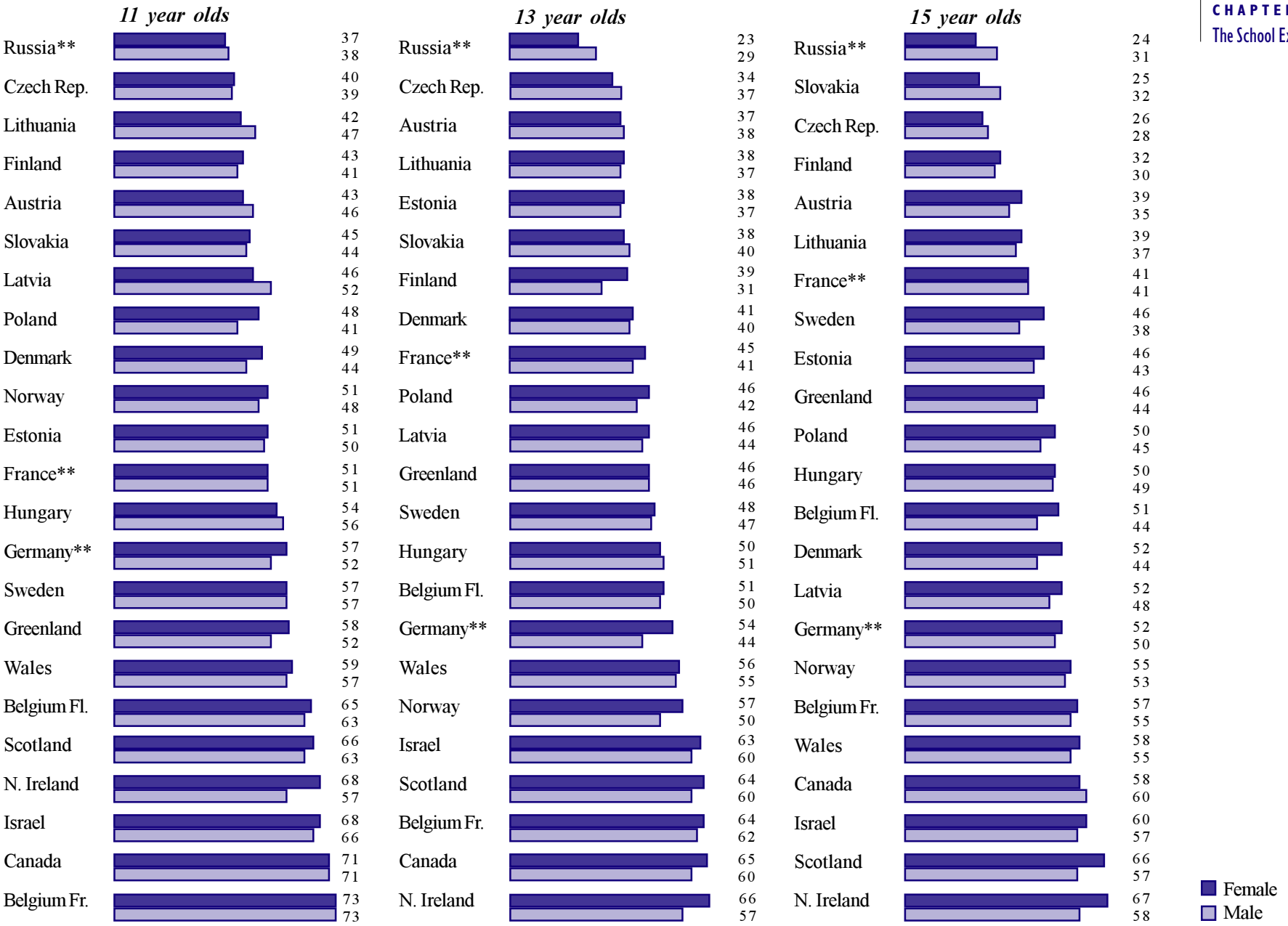
Perhaps the most notable difference across countries in students' attitudes toward their school emerged in response to the question "My teachers show an interest in me as a person". The proportion who agreed with the statement ranged from a low of 14 percent of Finnish 13-year-old girls and 15-year-old boys to a high of 83 percent of 11-year-old Greenlandic girls. Students in Greenland ranked highest on this measure for all three age groups, followed by Canada for the 11 and 13 year olds and Austria for the 15 year olds. It is interesting to note that Austria is consistently high on this item, but low on the express my own views item, which suggests that these items need not be highly correlated. Countries with more formal educational systems and didactic teaching such as Finland and Lithuania, tended to rank lowest on this item, but there were exceptions. Northern Ireland dropped from its high ranking on the previous item to the middle of the group while Canada retained its high ranking.

In most countries, the proportion of students who agreed with the statement "My teachers show an interest in me as a person" was sharply lower among 15 year olds than among 13 year olds. In many cases, this decline corresponds to the time when students begin to have many subject teachers rather than one main teacher. The largest declines were for Belgian (Fl.), Czech, Israeli and Slovakian girls and Canadian boys. Gender differences were quite small, although in the top-ranked countries on this item, girls were more likely to think their teachers showed a personal interest in them.

Differences from country to country were not as great on the item "I can get extra help from my teacher(s) when I need it". In 11 countries 80 percent or more of the 11-year-old girls agreed with the statement and 74 percent or more of the 11-year-old boys. Russian students were least likely to agree followed by 11 and 13 year olds from Finland and 15 year olds from the Czech Republic and Slovakia. Generally speaking, the countries that were lowest ranked on this item were also lowest on the other relationship with teacher measures.

In Canada the proportion of students who agreed with the statement "I can get extra help from my teachers when I need it" remained about the same for all three age groups, but for the other countries it decreased with age. Gender differences were small.

Figure 8.II Students who responded that their teachers encourage them to express their own views in class* (%)



* *Spain and Switzerland did not include this item.*

** *France, Germany and Russia are represented only by regions: see Chapter 1 for details.*

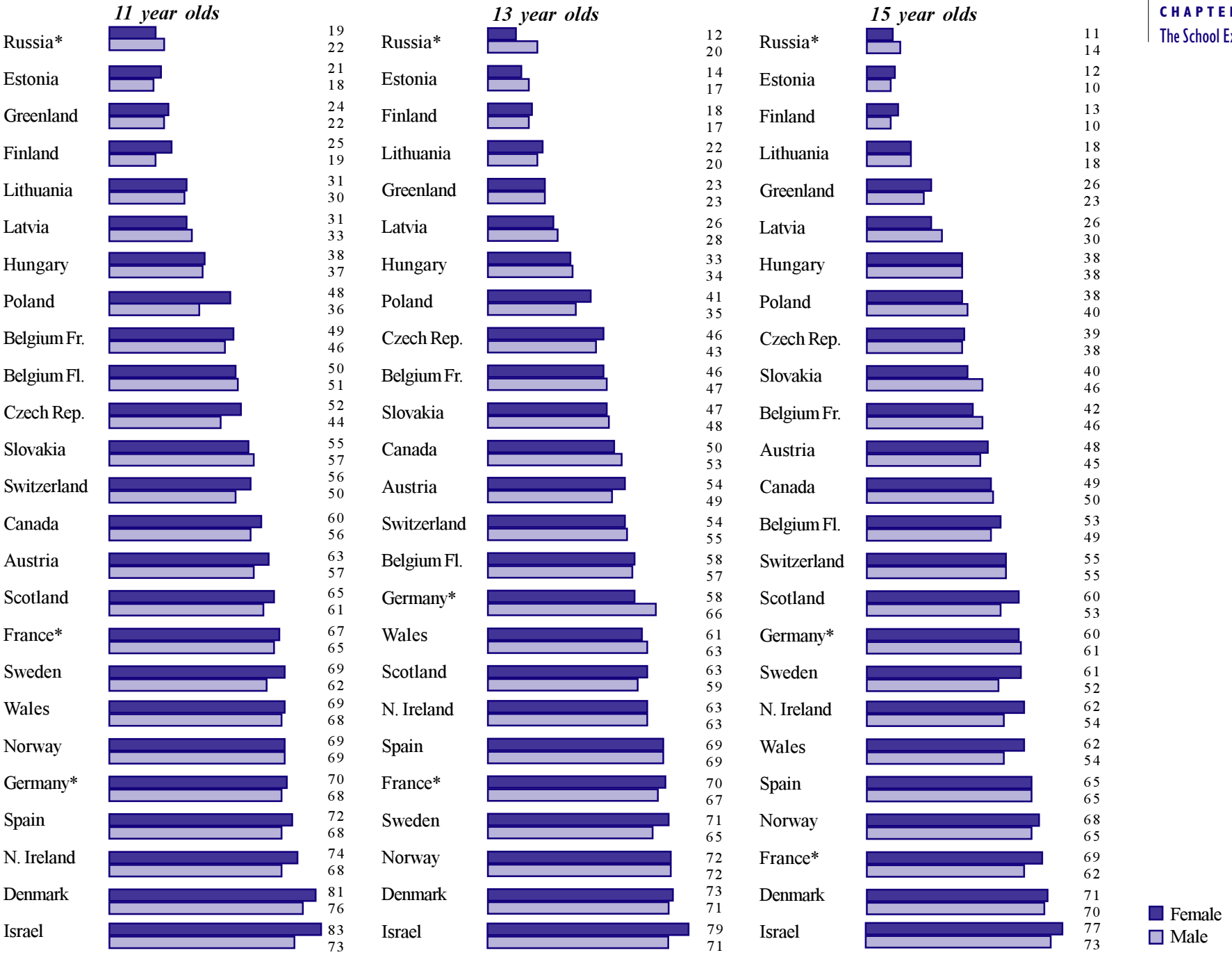
E. Parents

The survey item "My parents are willing to come to the school to talk to teachers" is a useful indicator of parents' involvement with their child's school. There were dramatic differences in the proportion of students who answered always to this item from country to country (Figure 8.12). Denmark and Israel ranked highest for all three age groups and Estonia, Finland, Greenland, Latvia, Lithuania and Russia lowest. The responses ranged from a low of 10 percent for Estonian and Finnish 15-year-old boys to a high of 83 percent for 11-year-old Israeli girls. This pattern appears to reflect different expectations across countries regarding parent involvement in the life of the school rather than the level of parental concern about the school progress of children.

Overall, there was a slight tendency for fewer older students to say their parents were always willing to come to the school to talk with teachers. Gender differences were not pronounced although 12 percent more 11-year-old Polish girls than boys responded always, a difference not evident in the responses of Polish 15 year olds.

When the always and often responses to the question "If I have problems at school, my parents are ready to help me", were combined over 80 percent of the 11 year olds in every country except Greenland (boys, 53%; girls, 54%) and Lithuanian and Switzerland (boys, 78%) were included in this category. Although not quite as high, the same pattern was true for 13 and 15 year olds. Greenland was substantially below the average for both 13 and 15 year olds, with Lithuania and Switzerland a little below the average at all three levels. There was a slight decline in the proportion of students who said their parents were always or often ready to help them as they progress through school; gender differences were small.

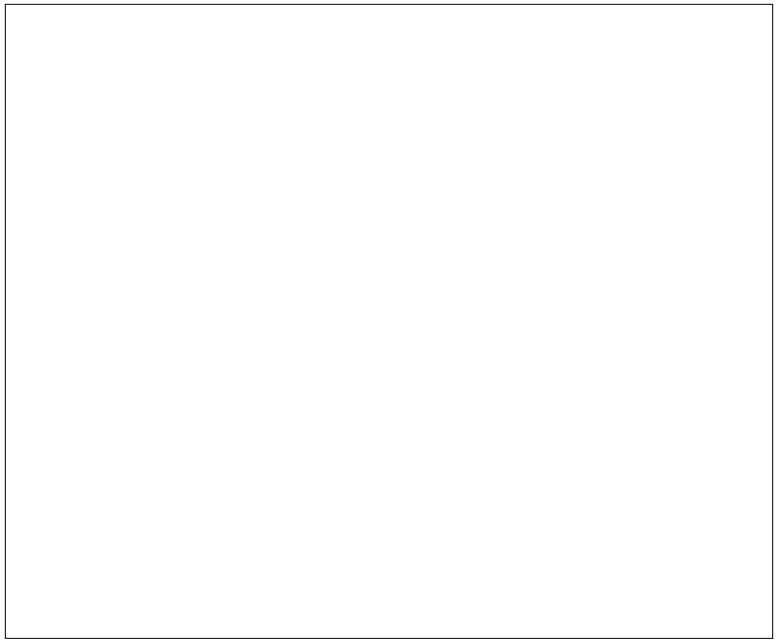
Figure 8.12 Students who responded that their parents are always willing to come to the school to talk to teachers (%)



* *France, Germany and Russia are represented only by regions: see Chapter 1 for details.*

Success in school for students is typically equated with strong academic performance. It is a social reality that future career opportunities are defined and may even be limited by the grades students attain in school. Academic achievement is important to parents because it effectively determines whether or not their children will have access to university. Therefore, students who do not meet parents' and teachers' expectations by attaining high marks are apt to experience considerable psychological and emotional stress. The strain in the parent-child relationship brought about by marginal academic performance often results in diminished communication between the parent and child. Studies have demonstrated that children who can talk openly with their parents are better socially adjusted and more likely to experience good physical and mental health than children who have difficulty communicating with their parents (King & Peart, 1994). Some young people perceive their parents' expectations to be unrealistically high and this added stress has a negative effect on the parent-child relationship during adolescence. Students' responses to high parent expectations are likely to be particularly intense if they are in a grade/year where critical program decisions must be made.

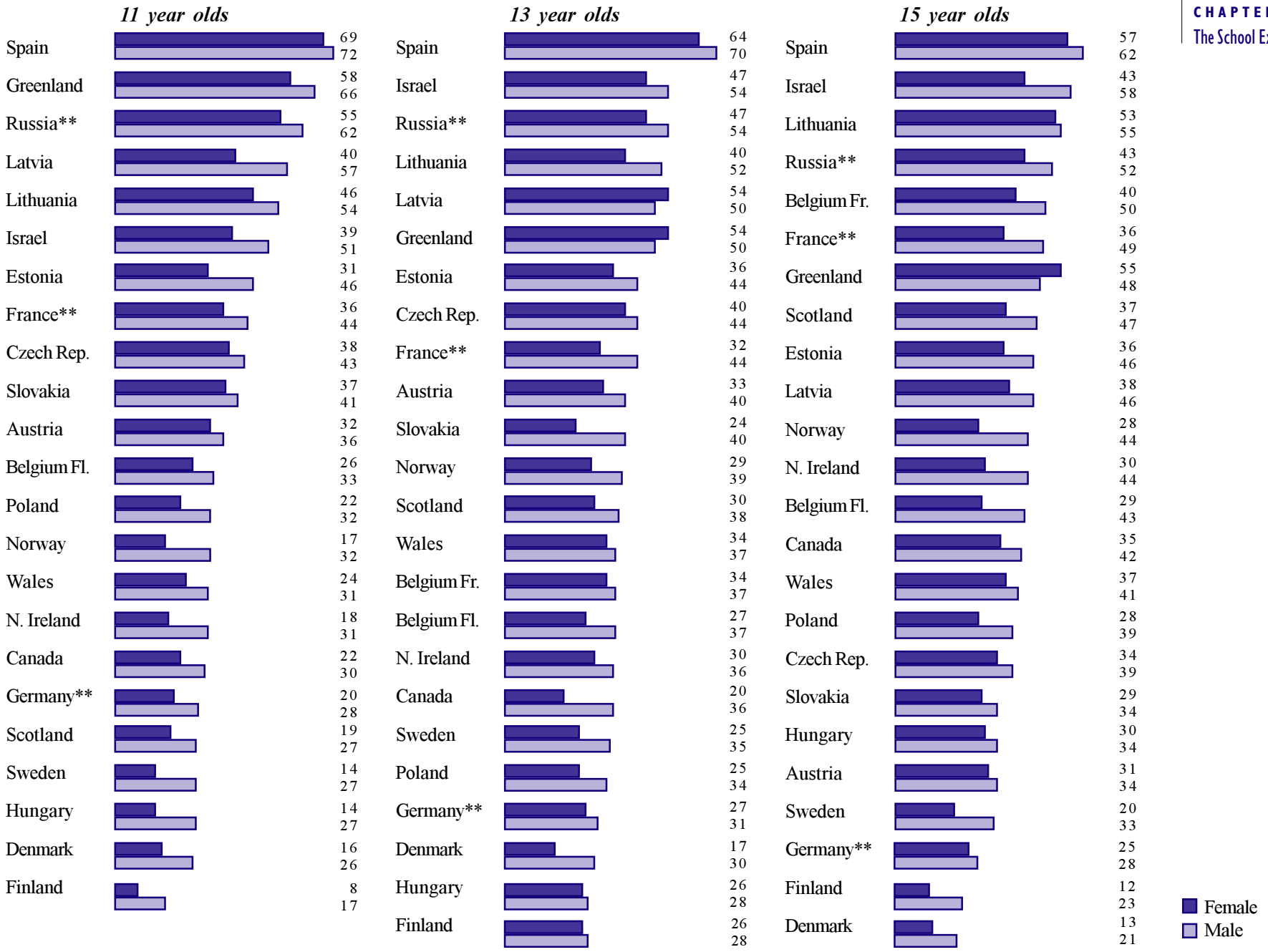
Students in Spain were the most likely in all groups to feel their parents expect too much of them at school (Figure 8.13). Russian, Lithuanian and Israeli students were also more likely than most others to feel high expectations from their parents. Eleven and 13 year olds in Greenland and Latvia ranked high on this measure. Students were far less likely to feel that parents' expectations were too high in Denmark, Finland, Germany, Hungary and Sweden.



Latvia

More boys than girls tended to feel parents' expectations were too high. This is true for all groups except 13 and 15 year olds in Greenland and 13 year olds in Latvia. In over half of the countries, 15 year olds were more likely than 11 year olds to feel that parents expected too much of them at school, but in seven countries there were decreases with age in the proportion of both boys and girls who felt this way.

Figure 8.13 Students who responded that their parents expect too much of them at school* (%)



* *Switzerland did not include this item and 11 year olds in Belgium Fr. were not asked this question.*

** *France, Germany and Russia are represented only by regions: see Chapter 1 for details.*

F. Peers

It is difficult to separate students' relationship with their peers in school from their overall social development. The problem of loneliness among young people is discussed in Chapter 6. In this chapter peer relationships in the school classroom as well as bullying behaviour in the broader school context are considered. The acceptance of young people by their peers is a fundamental component of their social development, and it also has far-reaching consequences for many areas of their life. For example, poor peer relationships can contribute to a negative school experience that can lead to alienation from school.

I. Classroom atmosphere

The general atmosphere of a classroom influences how well young people work together and how they feel about themselves in other school settings. Teachers can establish a climate of collaboration and mutual support, but students must also contribute. Figure 8.14 indicates that there were wide differences across countries in the extent to which students felt that their classmates were kind and helpful. Students in Denmark and Sweden at all age levels were most inclined to feel this way. Belgium (Fl.) also ranked high on this measure especially among females. Czech, Latvian and Russian 11 and 13 year olds were most critical of their peers with Czech, Israeli and Scottish students in the lowest ranking for the 15 year olds.

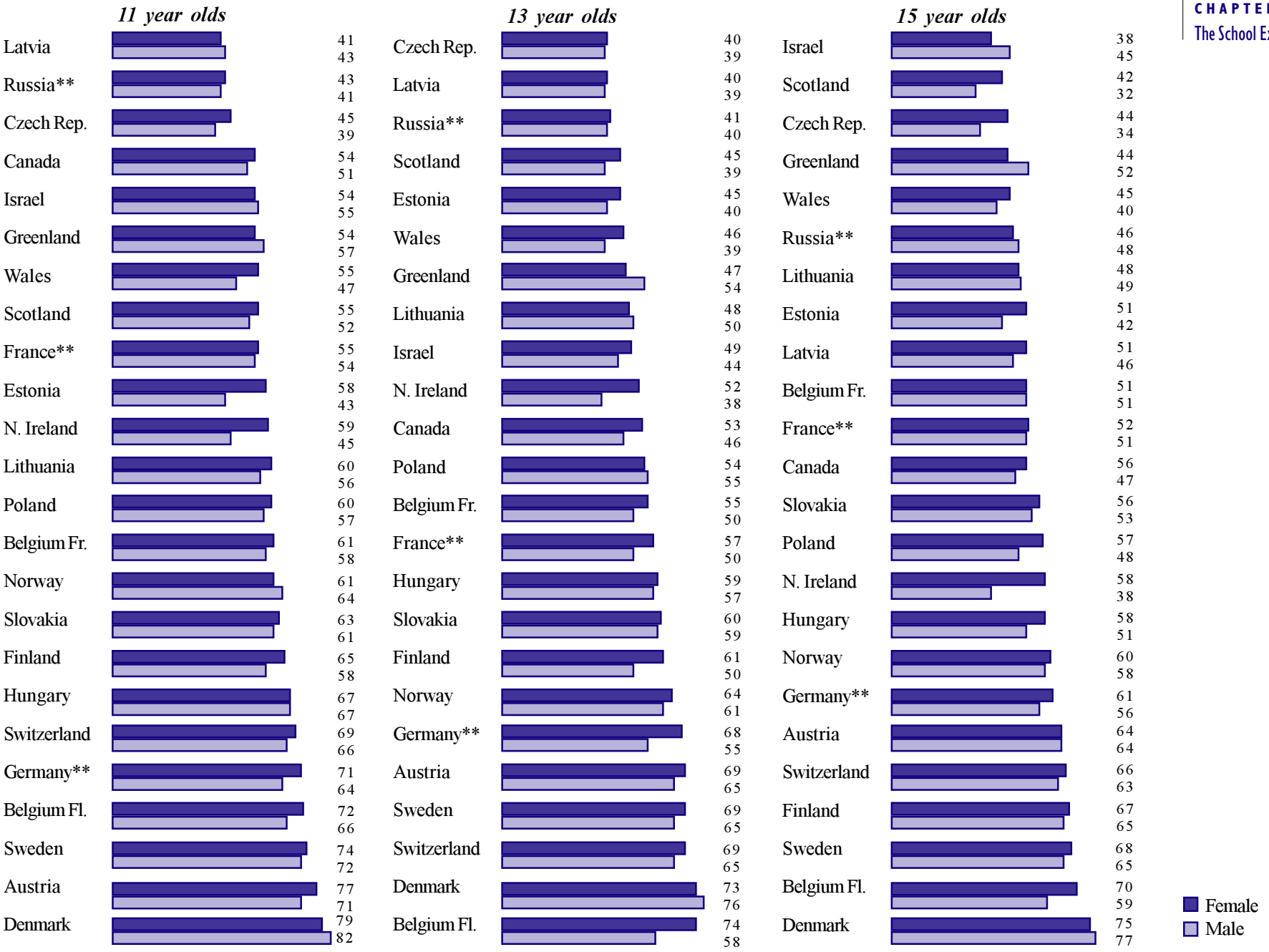
In most countries at all three age groups, boys were slightly less likely than girls to say that their classmates are kind and helpful. This pattern was most notably reversed for all three age groups in Greenland and for 15 year olds in Israel. Overall, 15 year olds were less likely to say that their classmates are kind and helpful.

The proportion of respondents who agreed the students in their classes enjoyed being together always or often was highest for Danish 11-year-old boys (86%) followed by Polish 13-year-old boys (83%), Danish 15-year-old boys (81%), Fr. Belgian (80%) and Polish (79%) 11-year-old boys and Danish 11-year-old girls (79%). Other countries with relatively high proportions responding always or often on this measure included Hungary, Israel and Sweden. The Czechs, Latvians and Greenlandics tended to be relatively low on this indicator. Eleven-year-old students were a little more likely to say the students enjoyed being together in comparison with their 13- and 15-year-old school mates. Gender differences were small.

School is the main place where young people socialize and being excluded from the peer group in this environment – even occasionally – is distressing for them. Across age groups, students in Austria, Belgium (Fr.), the Czech Republic, Denmark, Greenland and Lithuania were more likely than most others to report being left alone at least once or twice during the school term. Least likely to feel they had been excluded by friends at school were students in Finland, Spain, and Sweden. Norwegian 13 and 15 year olds were also among those less likely to report being left alone.

Overall, females were more likely than boys to have felt left alone at school, but this pattern changed slightly with age. In about half of the countries, 11-year-old females were more likely than their male peers to have felt left alone. By age 15, girls in only one-third of the countries were more likely than boys to have felt that other students did not want to be with them. Younger students were the most likely in all countries to feel that they had been left by themselves; there was a steady decrease in the proportion who felt alone from age 11 to 15.

Figure 8.14 Students who agreed that the students in their class(es) are kind and helpful* (%)



* *Spain did not include this item.*

** *France, Germany and Russia are represented only by regions: see Chapter 1 for details.*

2. Bullying behaviour

Being the object of bullying is an extreme example of exclusion from a peer group. Studies have shown that aggressive behaviour in the form of bullying is a worldwide phenomenon among young people. It can be some sort of physical contact or verbal abuse that takes place usually over a period of time. Most bullying takes place on school playgrounds and it is frequently linked, in the case of both bully and victim, to level of self-esteem or confidence. (Olweus, 1994; Smith & Sharp, 1994; Oliver, 1994; Neary, 1994; Stein, 1992; Wilson, 1992; Ziegler & Rosenstein-Manner, 1991).

Figure 8.15 indicates that the students in this study who had been bullied tended to have few friends with whom they could easily communicate and often felt left alone at school. Perhaps ironically, they were more inclined to bully others. They were also more likely to feel unhappy, helpless, depressed, nervous and view themselves as outsiders.

In some countries, high proportions of students reported having been bullied during the school term. Across age groups, students in Belgium (Fr.), Germany, Israel, Lithuania and Russia were more likely to have been bullied; far fewer students in Canada, Northern Ireland, Norway, Scotland, Slovakia, Sweden and Wales had been bullied (Figure 8.16).

Boys were much more likely to have been bullied than girls, with rather large gender differences in more than half of the countries. The proportion of students who had been bullied dropped substantially by age 15. For example, 25 percent fewer Danish 15 than 11 year olds had been bullied and, in Belgium (Fl.), the decrease between age groups was 30 percent.

Figure 8.15 Factors associated with being bullied

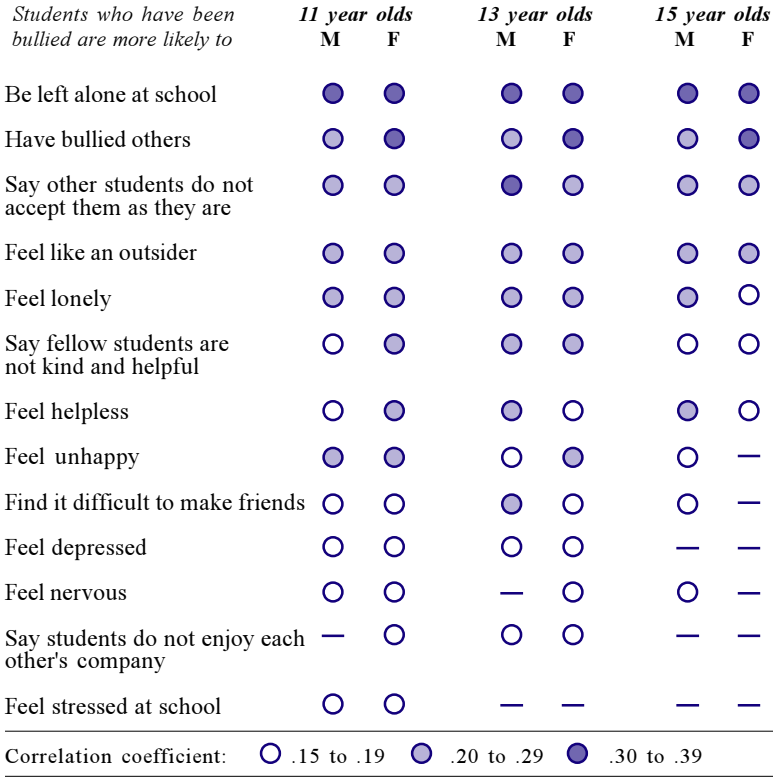
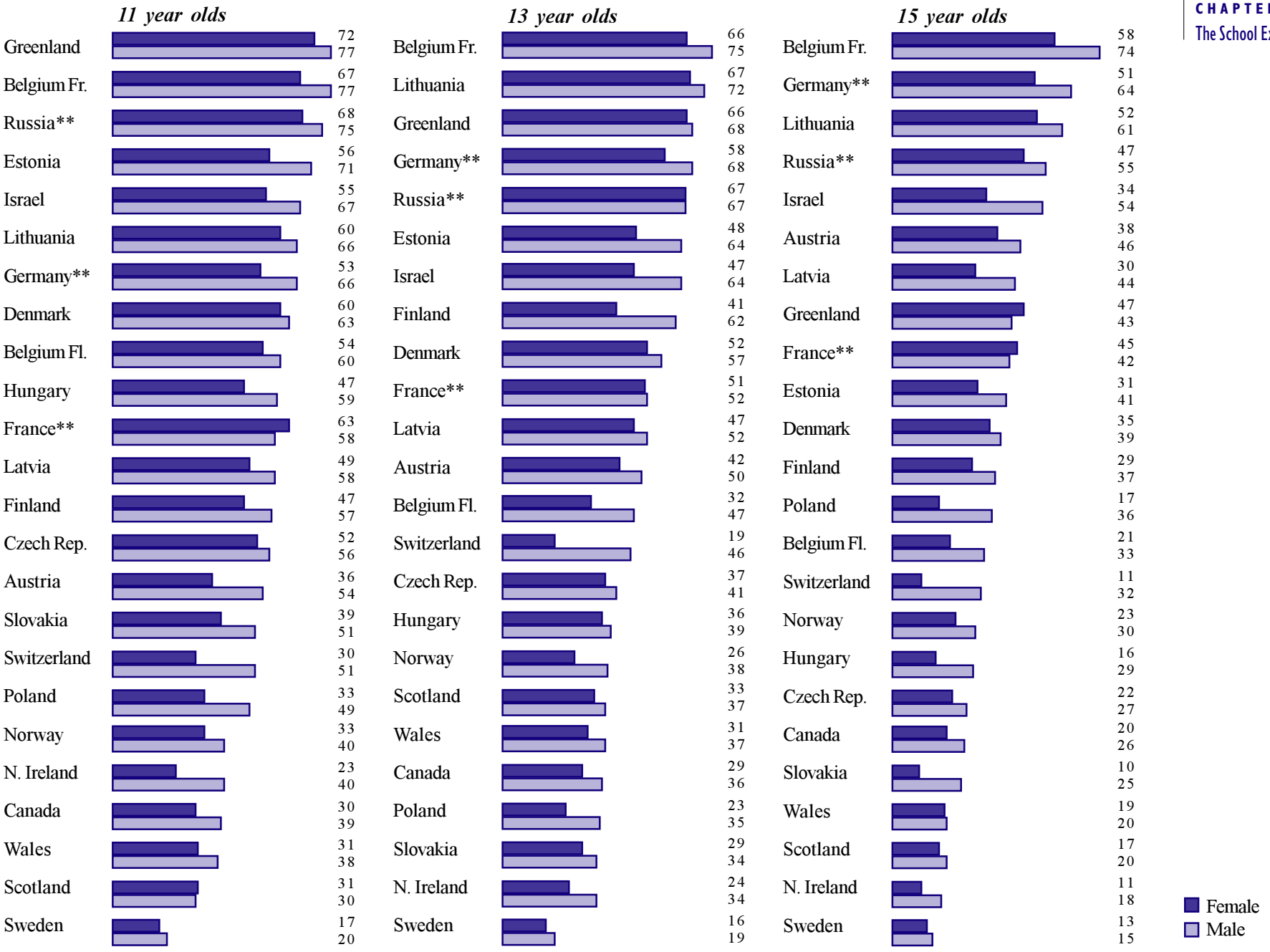


Figure 8.16 Students who were bullied at least once this school term* (%)



* *Spain did not include this item.*

** *France, Germany and Russia are represented only by regions: see Chapter 1 for details.*

It is remarkable that so many students indicated that they participated in the negative behaviour of bullying others. Figure 8.17 shows that those who bully others tend to dislike school and engage in the health-risk behaviours of smoking and drinking to excess.

The extent of bullying varied dramatically from country to country (Figure 8.18). In some countries, Austria, Belgium (Fr.), Denmark and Germany, the majority of students had taken part in bullying others during the school term. In others, far fewer students reported bullying behaviour, for example, Northern Ireland, Scotland, Sweden and Wales.

Boys were more likely than girls, in every country and age group, to bully others. In some countries (e.g., Northern Ireland, Poland and Switzerland) they were at least twice as likely to engage in bullying behaviour.

The proportion of boys who had bullied others was similar in each age group. Among the girls, 13 year olds were more likely to have acted as bullies than 11 and 15 year olds.

Figure 8.17 Factors associated with bullying others

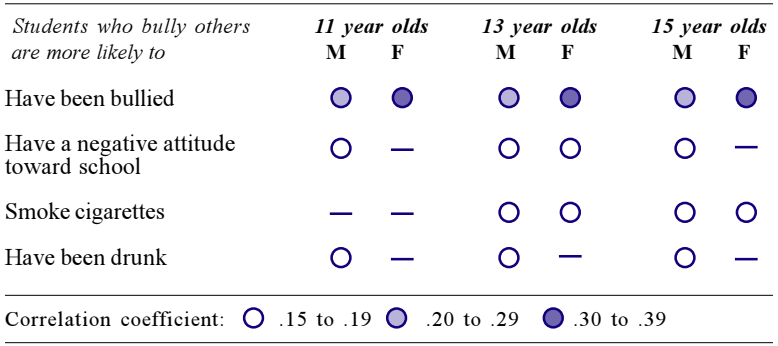
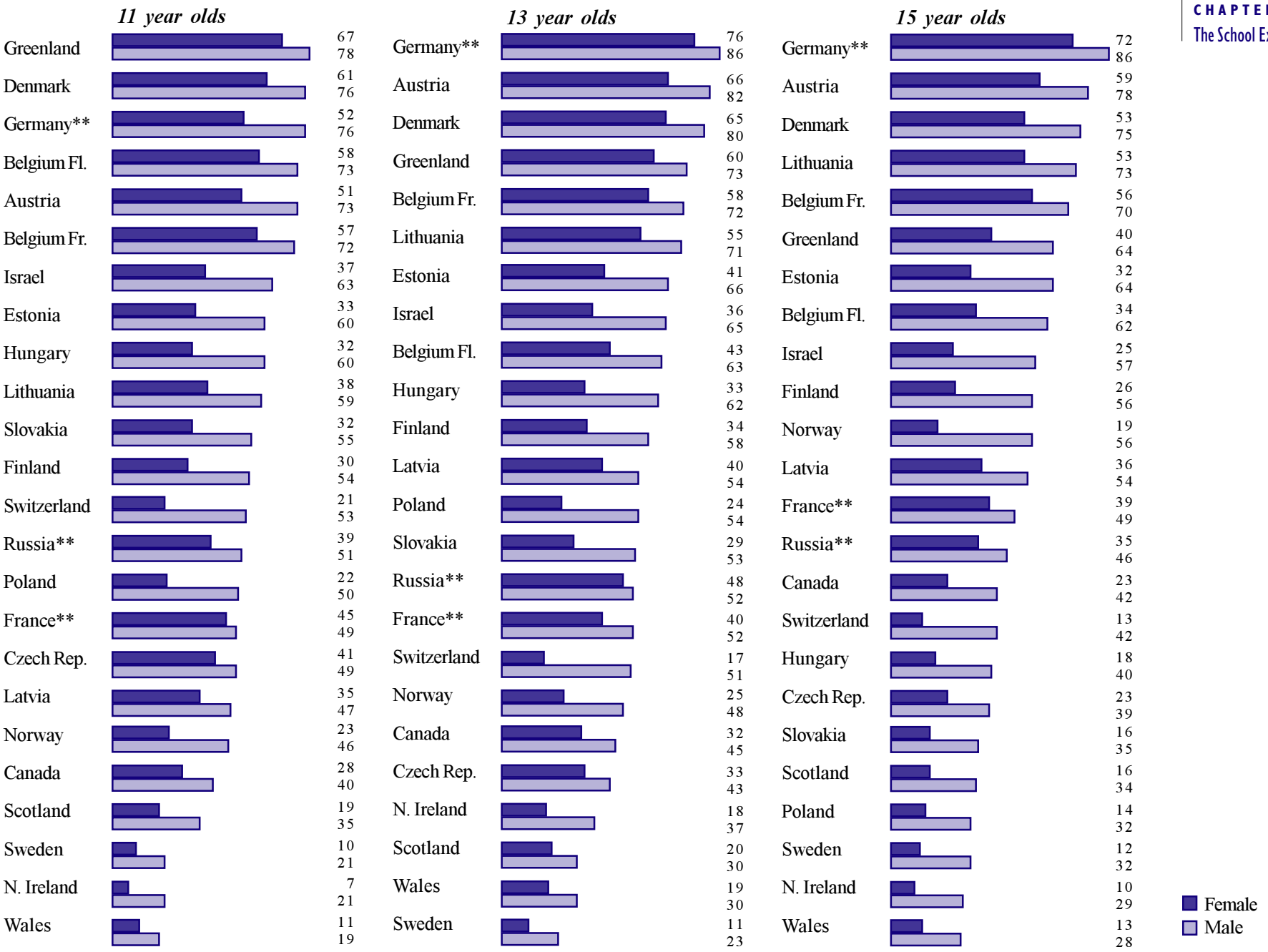


Figure 8.18 Students who took part in bullying others at least once this school term* (%)



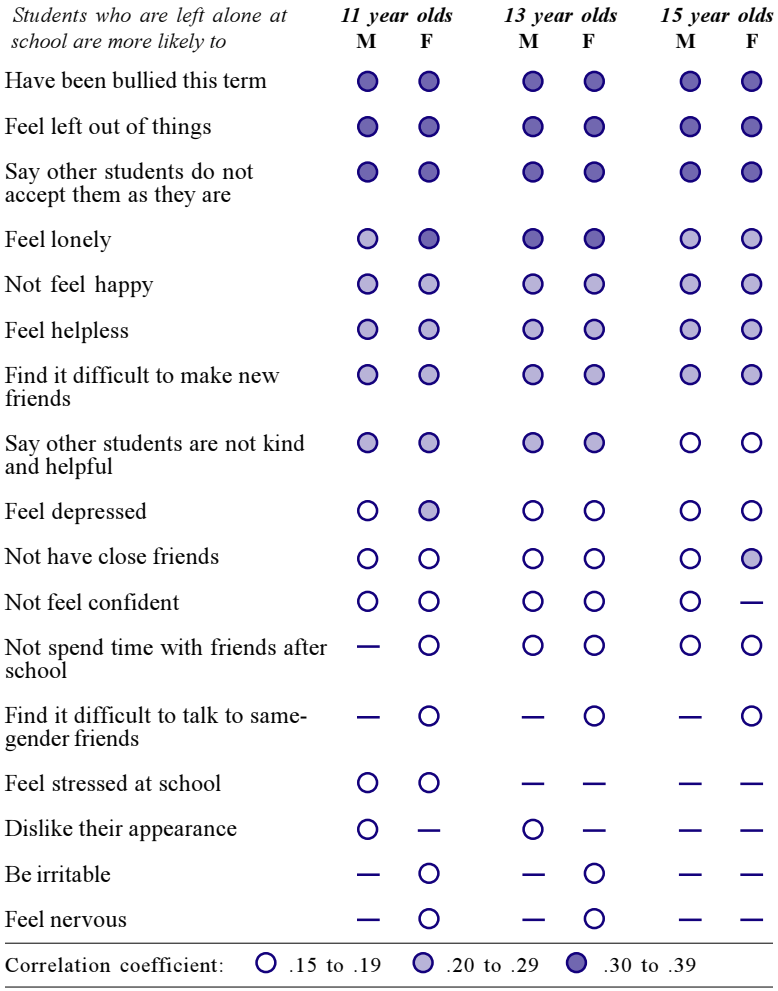
* *Spain did not include this item.*

** *France, Germany and Russia are represented only by regions: see Chapter 1 for details.*

The data from the two bullying items tend to corroborate each other. The group of countries where students were less likely to have been bullied was similar to the group where there were not as many bullies – Canada, Northern Ireland, Scotland, Slovakia, Sweden and Wales. In Belgium (Fr.), Germany and Greenland, students were more likely to be bullied by others and to take part in bullying others.

The mental health of students who have few friends at school and often feel alone is a serious concern as can be deduced from Figure 8.19. Such students are often the easy target of bullies. They tend to have difficulty making friends, feel helpless in dealing with most of the problems they face and lack confidence. Obviously they feel left out of things, and do not feel accepted by other students. They are far less likely to be happy and often feel depressed.

Figure 8.19 Factors associated with being left alone at school



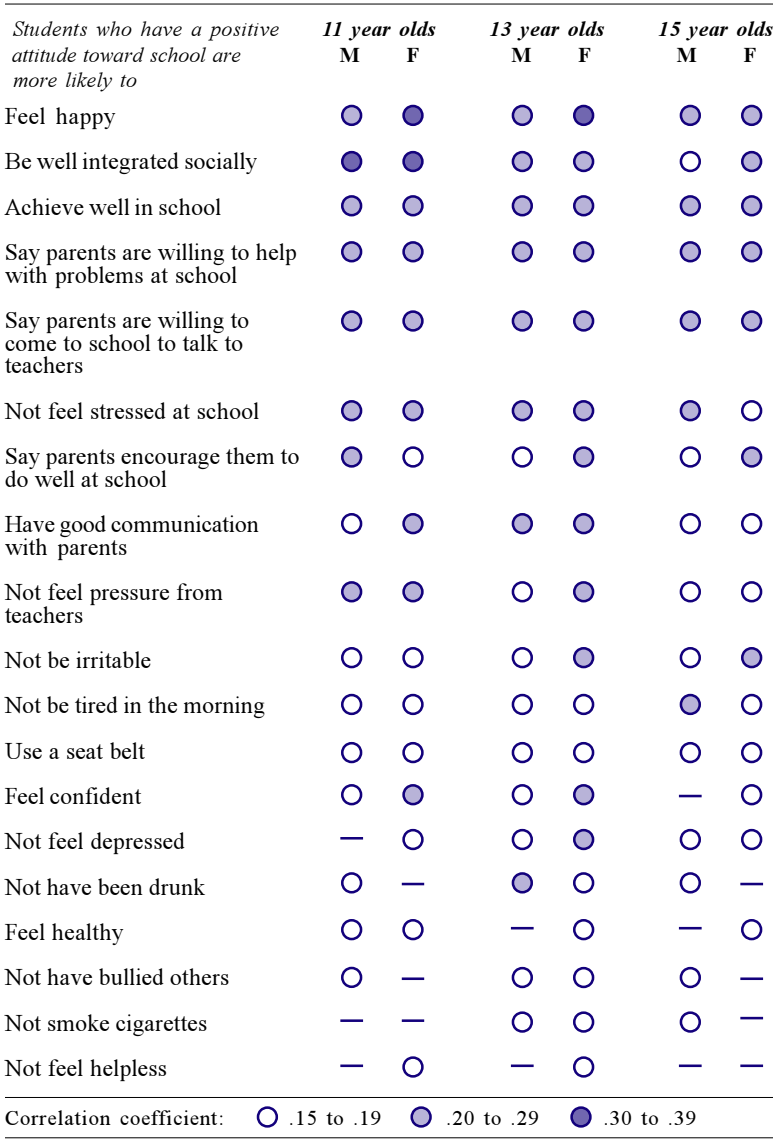
G. Schools and health

Does the school experience actually contribute to the health and happiness of young people? In order to begin finding an answer to this question a school satisfaction scale based on 12 questionnaire items was developed. The scale is described in more detail in Chapter 1. Simple scale scores were correlated with other items from the questionnaire and the findings are summarized in Figure 8.20.

A general feeling of well-being or happiness is correlated with school satisfaction for all gender and age groups. Students who are satisfied with school are also more likely to be socially integrated, that is, to have friends with whom they can communicate effectively. They are also more likely to be communicating positively with their parents and getting support from them regarding school. They do not feel particularly stressed at school nor do they feel pressure from their teachers. The students who are satisfied with school are less likely to feel depressed, irritable, or tired in the morning and they are less likely to bully other students. They are more likely to use seat belts, to feel confident and to feel healthy. And, as expected, they are less likely to smoke and drink to excess.

While it is difficult to know the specific dynamics in the establishment of good health patterns, it is probably true to say that a supporting and accepting school atmosphere can contribute to the health and happiness of young people.

Figure 8.20 Factors associated with a positive attitude toward school



H. Summary

There are notable differences in the structure, content and teaching/learning methodologies across the school systems of the countries participating in the survey. Each approach to education has its own characteristic impact on the satisfaction of students in the school and on their psychological adjustment. General satisfaction with school was highest in Belgium (Fl.), Canada, Germany, Norway and Sweden. Satisfaction with teachers was lowest in Austria, the Czech Republic, Finland, Lithuania, Russia and Slovakia. Students from Northern Ireland were most inclined to say their teachers encouraged them to express their own views.

The expectation that parents will go to school and talk to teachers was lowest in eastern European countries and highest in Denmark and Israel. Spanish students were most likely to say that their parents expect too much of them at school and Danish and Finnish students the least.

Interesting differences surfaced across countries in the description of relationships with peers in school. Students from Austria, Belgium (Fl.), Denmark, Sweden and Switzerland were most likely to say their classmates were kind and helpful and students from the Czech Republic, Israel, Latvia, Russia and Scotland least likely.

Substantial numbers of students indicated that they had bullied others and this is of special concern because both those who bullied and those who were bullied tended to have health problems. Bullying was most pronounced among boys in Austria, Belgium (Fr.), Denmark, Germany and Greenland and least in Northern Ireland, Scotland, Sweden and Wales. Lonely students were found to be particularly vulnerable to being bullied.

School atmosphere appears to contribute significantly to the overall happiness and health of youth.

CHAPTER

9

Interrelationships

Greenland

CHAPTER 9

Interrelationships

A. Introduction

While the main purpose of this report is to present the health-related attitudes and behaviours of youth, it is also important to understand the relationships among these behaviours and attitudes, the context in which they develop, and the evolution of risk behaviour over the three age cohorts in the survey. In this chapter, data regarding selected items are integrated in order to illustrate how the findings might be used to guide policy and program development.

Previous research, conducted to ascertain the relationship between particular behaviours and good or poor health practices, strongly indicates that smoking tobacco, drinking alcohol, using illegal drugs, exercise and nutrition have a significant impact on both the physical and mental health of youth. The findings in this survey not only verify these relationships but also reveal a strong correlation between young people's participation in health-risk behaviours and the nature of their social relationships. It is clear that the health behaviours of youth are directly influenced by relationships with parents and peers and by in-school experiences. The particular strength of this survey is that the data are more comprehensive and include more information on family, friends and school as well as a broader range of health measures, than is the case in similar research studies.

Three items, each broadly dealing with an important aspect of health – smoking, feeling happy and perceived health status – were selected to demonstrate how the information collected can be used to predict behaviours and health status. Smoking was chosen to represent health-risk behaviours as it has been proven to be a strong predictor of participation in other types of health-risk behaviours. Happiness, thought to represent the most positive aspect of mental well-being, was chosen as an indicator of mental health, and health status was chosen to represent physical health because it is believed to represent most reliably perceptions of physical well-being. Multiple linear regression techniques were used to determine the relative importance of factors predicting the criterion measures of smoking, happiness and health.

Predictors include activities, predispositions and relationships that may precede, be coincident, or even follow the manifestation of a behaviour or an attitude. They are not necessarily causal.

Not all significant predictors for each country are presented in the figures; only those predictors were included where significant prediction weights were found for six or more countries for male and female students combined. Two countries are not included in these analyses: the data file for Switzerland was not in an appropriate format and the small number of cases for Greenland make the analyses invalid for that country. It is important to note that the power of regression equations to predict the criterion variables varies substantially from country to country. Also, the strength of the relationships may not be as pronounced in younger as in older children since many attitude and behavioural patterns are usually not as well formed in younger children.

Analyses of the evolution of risk behaviour across the three age cohorts in the study are based on data aggregated from all participating countries. Simple line graphs are used to illustrate selected developmental trends.

This discussion and analysis is designed to introduce the relationships that must be explored if effective health programs and social policies are to be developed. Factors that might explain similarities and differences across participating countries are not fully developed and the findings must be viewed in terms of the linguistic, cultural and economic characteristics of each country. Members of the HBSC research team are preparing more comprehensive analyses of the data.

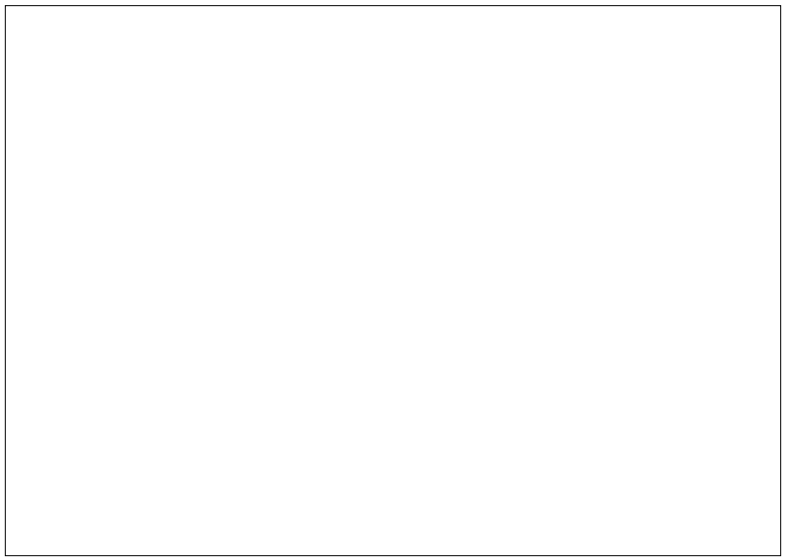
B. Health-risk behaviour

I. Factors influencing health-risk behaviour

Perhaps the best example of a health-risk factor that may be difficult to influence by using the typical educational strategies is smoking behaviour. Many studies have found that peers are extremely important in influencing others to take part in health-risk behaviours such as smoking cigarettes, drinking alcohol and taking drugs. If, for example, some young people in a closely knit group smoke, there is implicit peer approval for that behaviour among members of the group. Rather than being isolated by their high-risk health behaviour, young people can find support and encouragement in a group where their friends are taking similar risks in an atmosphere where the values support such behaviours. Family relationships also play a strong role in health-risk behaviour. A lack of open communication with parents, as well as a lack of support and low expectations regarding academic achievement, have been found to be related to health-risk behaviour. Students who do not achieve well academically and have a negative attitude toward school are also more likely to smoke cigarettes and drink alcohol. These relationships do not appear to differ dramatically from culture to culture and have been found in a number of studies around the world. (Dinges & Oetting, 1993; McDonald & Towberman, 1993; Thorlindsson & Vilhjalmsson, 1991; Clayton, 1991; Krohn et al., 1986; Chassin et al., 1986; Nutbeam et al., 1993).

2. Predictors of smoking

All participating countries have introduced education programs designed to demonstrate the health problems associated with smoking. Nevertheless, as was shown in Chapter 2, a substantial number of youth are smoking regularly by the age of 15. Figures 9.1 and 9.2 summarize the findings from the multiple linear regression analysis predicting smoking among 15-year-old males and females in 22 countries. Smoking was found to be associated with alcohol abuse in all countries. In countries where research teams included questionnaire items on drug use, findings indicated smoking is also part of the lifestyle of the drug users.



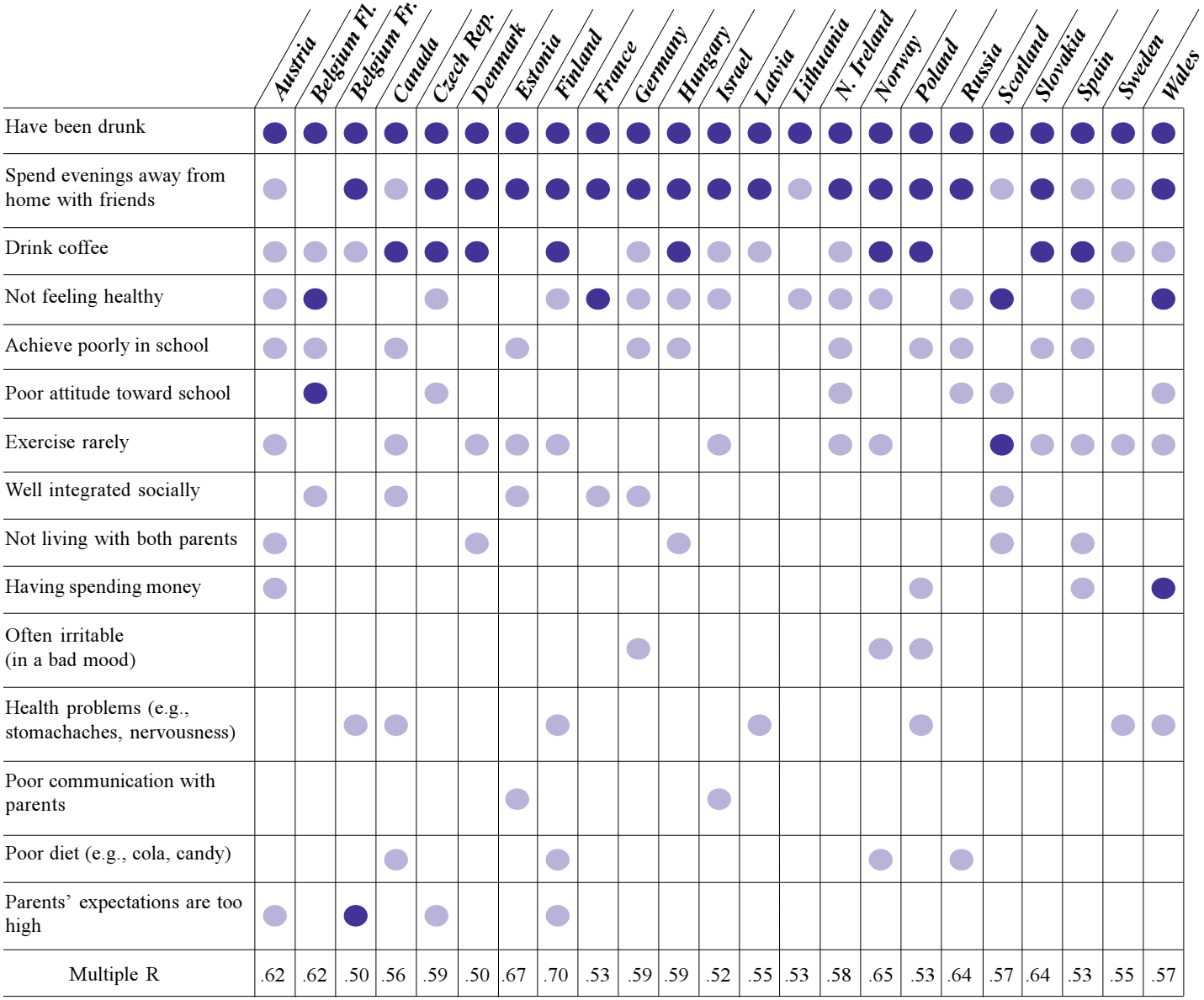
Canada

Typically, in most countries, smokers spent an inordinate amount of time with their friends, not only after school, but in the evenings, away from home and away from the influence of their parents. Some of this time was spent in restaurants, cafés and coffee shops and, as a result, drinking coffee and soft drinks becomes part of the lifestyle of the adolescent cigarette smoker. In most countries, although young people recognize that smoking is not a healthy behaviour, a substantial number smoke with friends in social settings that also promote other health-risk behaviours.

In many countries, youth who smoked tended to have a poor attitude toward school. Smokers were also less likely to obtain good marks in school.

In a number of countries, evidence of strain at home and living with only one biological parent was linked to smoking. Smoking was also linked to nervousness and irritability and to a lack of exercise in some of the participating countries. In some countries, cigarette smoking was associated with the availability of spending money to purchase cigarettes (for example, Czech Republic, Northern Ireland and Wales).

Figure 9.1 Predictors of smoking, 15-year-old males

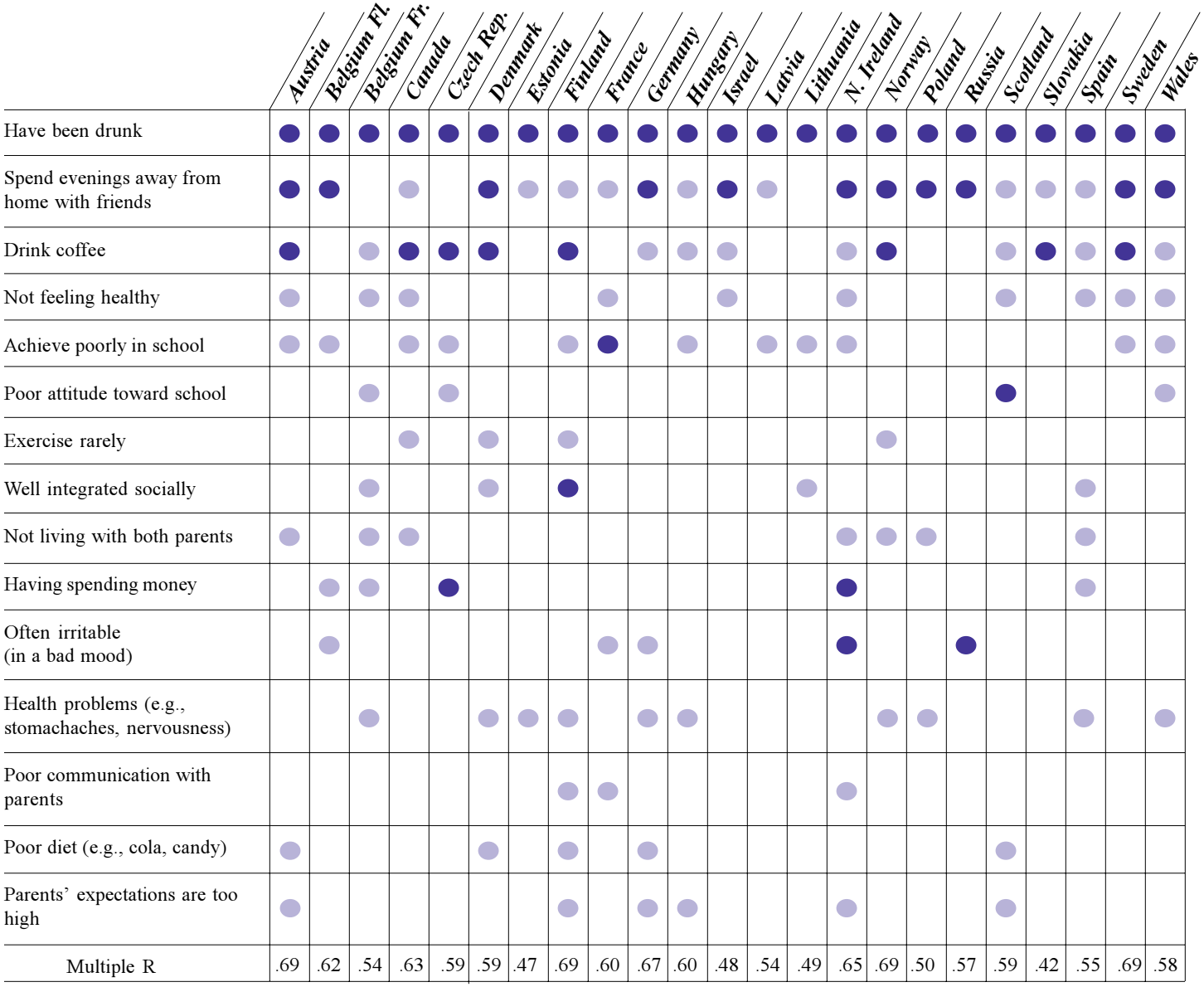


Boys were very similar to girls on most of the predictors of smoking, but there are some exceptions. Not feeling healthy and/or various health problems were related to smoking in more than half of the countries for both boys and girls. Overall, females with physical problems, such as nervousness and irritability, and males who rarely exercise are more likely to smoke. The influence of single-parent families predicted smoking in more countries for girls than for boys.

Not doing well in school predicts smoking in five countries for both boys and girls, and in six additional countries for boys and seven additional countries for girls.

The survey items are quite powerful in predicting smoking behaviour as can be seen from the multiple correlations (Multiple R) shown as the last line in each figure, but there are differences from country to country. For girls, more smoking behaviour is explained by the analysis for Austria, Canada, Finland, Germany, Northern Ireland, Norway and Sweden and less for Estonia, Israel, Lithuania, Poland and Slovakia. In the case of the boys, the figures are highest for Estonia, Finland, Norway, Russia and Slovakia, and lowest for Belgium (Fr.) and Denmark.

Figure 9.2 Predictors of smoking, 15-year-old females



C. Mental health

1. Factors influencing mental health

Young people who are experiencing poor mental health are frequently depressed and tend to view themselves and their surroundings negatively. The characteristics of depression include loneliness, feeling unloved, helplessness and a sense of failure. There are various levels of childhood and adolescent depression and, similar to the condition among adults, not all are severe. Nevertheless, depression that is frequent and long term should be addressed.

The day-to-day lives of adolescents are made up of a series of events that could cause them to feel low or depressed. Some are major, for example, parental divorce or the death of an immediate family member. Others are minor: pressure from friends, embarrassment, disappointments, disagreements with brothers or sisters, feeling unattractive, difficulty with school work. These are frequently categorized as internal and external factors. Of course, it is important to bear in mind that no two adolescents react the same way to the same set of circumstances. (Ramsey, 1994; Connelly et al., 1993; Asarnow et al., 1987; Compas et al., 1987; Dixon, 1987; McGuire & Mitic, 1987)

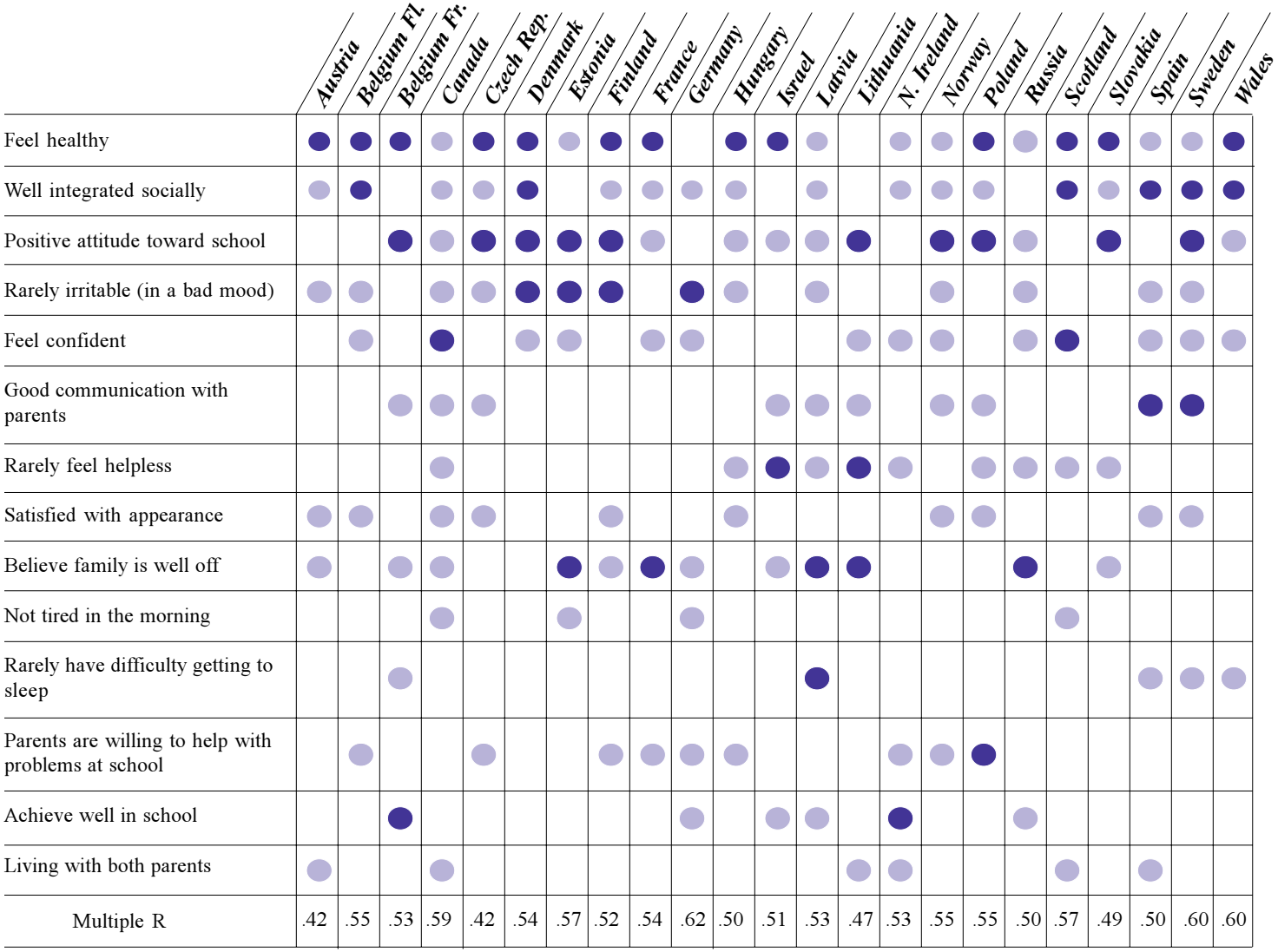
A summary measure of positive mental health was chosen for this sample analysis in order to determine the role played by home, school and peers in contributing to youths' sense of well-being.

2. Predictors of being happy

The subjects of the study were not asked what makes them feel happy, but they were asked if they were generally happy about their life. Figures 9.3 and 9.4 indicate how their responses on other health-related items were associated with their happiness.

Good health is an important component of the sense of well-being of 13 year olds in most countries. In almost all countries, the happiest girls were the best integrated socially, that is, they had friends they spent time with and communicated with effectively. This was true of boys in slightly fewer countries. In 17 countries, a positive attitude toward school was an important dimension of happiness for boys. This was the case for girls in 14 countries.

Figure 9.3 Predictors of happiness, 13-year-old males

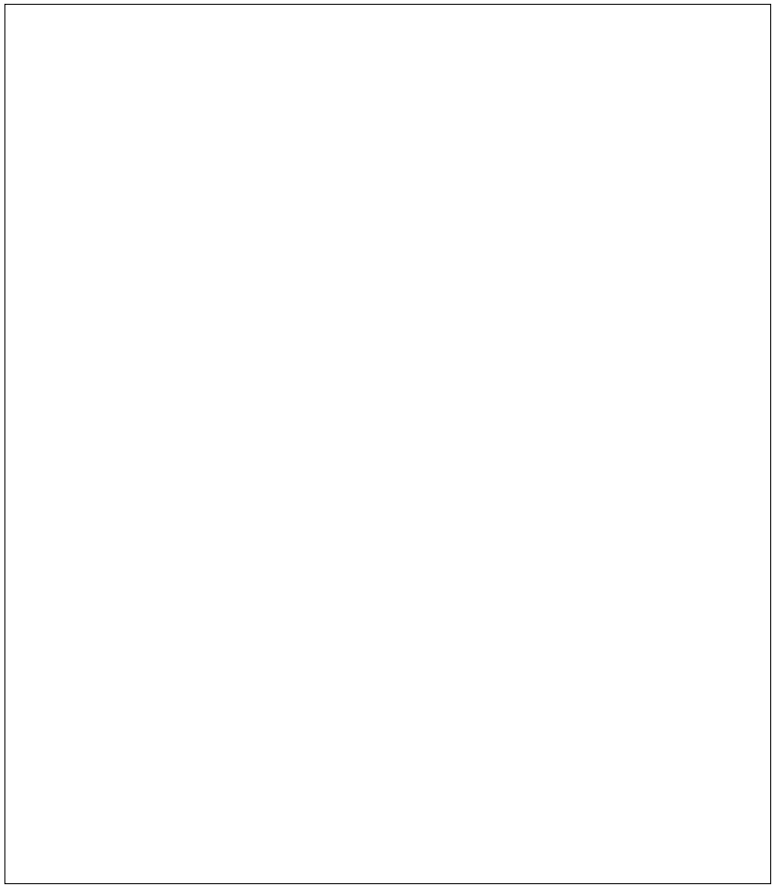


A happy home life, characterized by effective communication with parents, is one of the predictors of happiness in most countries for girls and in slightly less than one-half of the countries for boys.

In a number of countries, the financial status of the family was an indicator of happiness, particularly for boys. Typically, some aspect of physical health is linked to happiness in each country, whether it is feeling healthy, having no difficulty getting to sleep or not being tired in the morning. Being satisfied with their appearance and rarely being in a bad mood are also prominent indicators of happiness for boys and girls in about half of the countries. The happy student tends to be confident and rarely feels helpless.

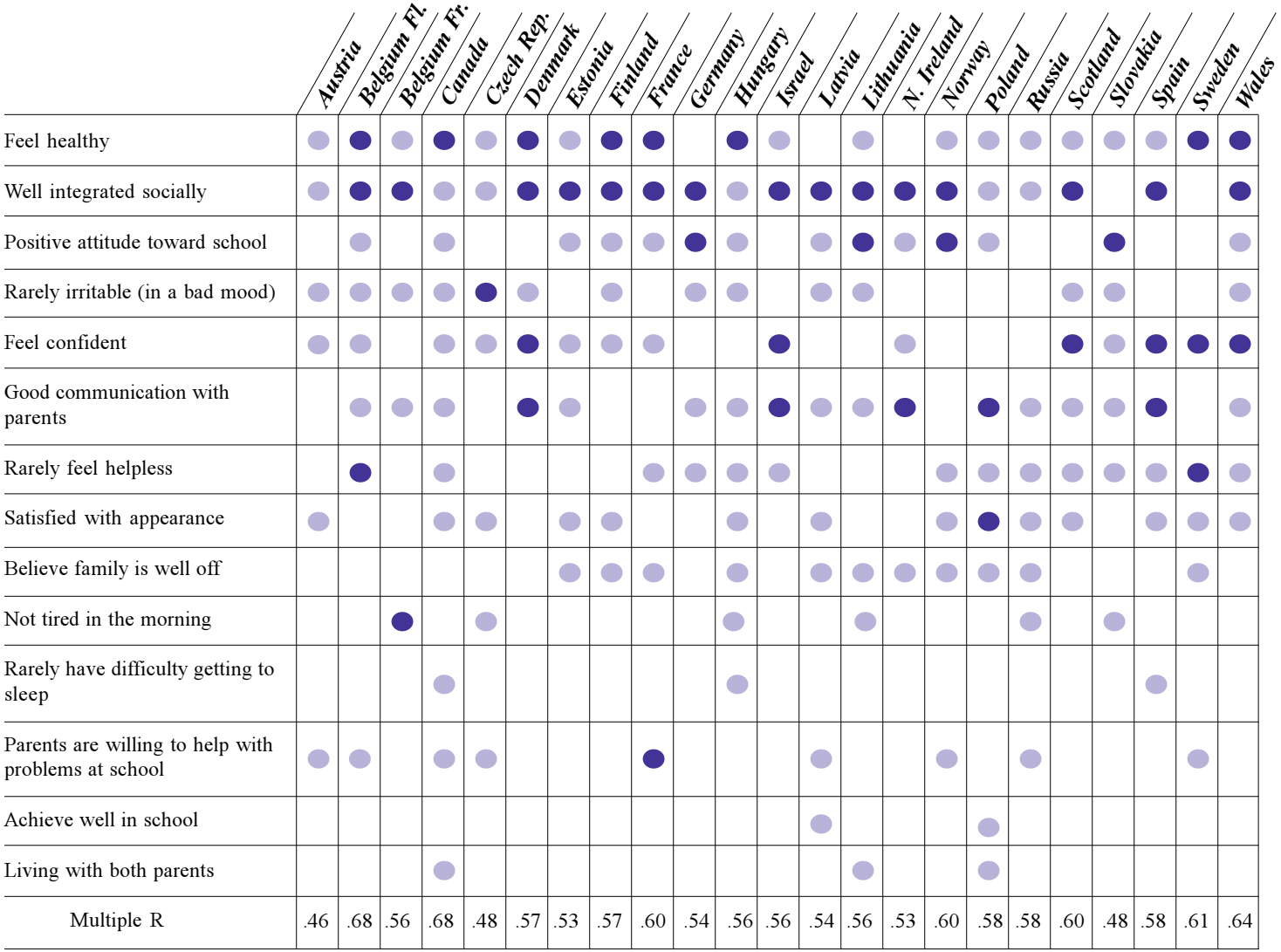
In summary, in most countries, happy 13 year olds tend to feel they are healthy, have good friends, are successful in and have a positive attitude toward school, communicate effectively with their parents and are satisfied with their appearance.

The multiple correlations for happiness indicate that the items in the analysis are not as powerful predictors as was the case for smoking. For girls, the predictive power was highest for Belgium (Fl.) and Canada, and lowest for Austria, the Czech Republic and Slovakia. For the boys, it is slightly less overall; and, Canada, Germany, Sweden and Wales are highest and Austria and the Czech Republic the lowest.



Scotland

Figure 9.4 Predictors of happiness, 13-year-old females



D. Physical health

1. Factors associated with feeling healthy

A great number of studies have shown that the physical aches and pains of young people are frequently related to stress. Young people who have frequent headaches, for example, are often found to suffer from depression to some degree. This stress is typically related to school difficulties, family problems or peer relationships (McGuire & Mitic, 1987; Sharrer & Ryan-Wenger, 1991; Hallam, 1991; Offord, 1989; Smith, 1987; Aro, 1987). There is less research identifying the specific factors that contribute to young people having a strong sense of being healthy.

2. Predictors of feeling healthy

The general concept of feeling healthy was chosen to illustrate the elements that young people associate with good health. The regression equations were prepared for the 11-year-old group using responses to the item, "How healthy do you feel?" (Figures 9.5 and 9.6). Clearly students' views of their health are not related exclusively to their physical state of health but also to how they perceive their experiences at school and relationships with parents and peers.

Feeling healthy goes hand in hand with a general sense of well-being. The strongest predictor of feeling healthy is feeling happy; in almost all countries, students' perception that they are in very good health reflects a state of happiness. In about half the countries, those surveyed who exercised regularly were more inclined to feel healthy.

Two measures of self-concept are also strongly associated with the feeling of being healthy. First, students who felt confident in themselves were more likely to feel healthy than those whose level of self-confidence was low. Second, there is an association for young people, especially boys, between being satisfied with their looks and feeling healthy.

It is not surprising that the absence of physical health problems contributes to young people's feeling that they are healthy. The ailment most commonly linked to poor health was headache although in a number of countries, young people who frequently experienced stomachache were less likely to feel healthy. Other physical symptoms such as dizziness, backache and nervousness were also associated with the health of students.

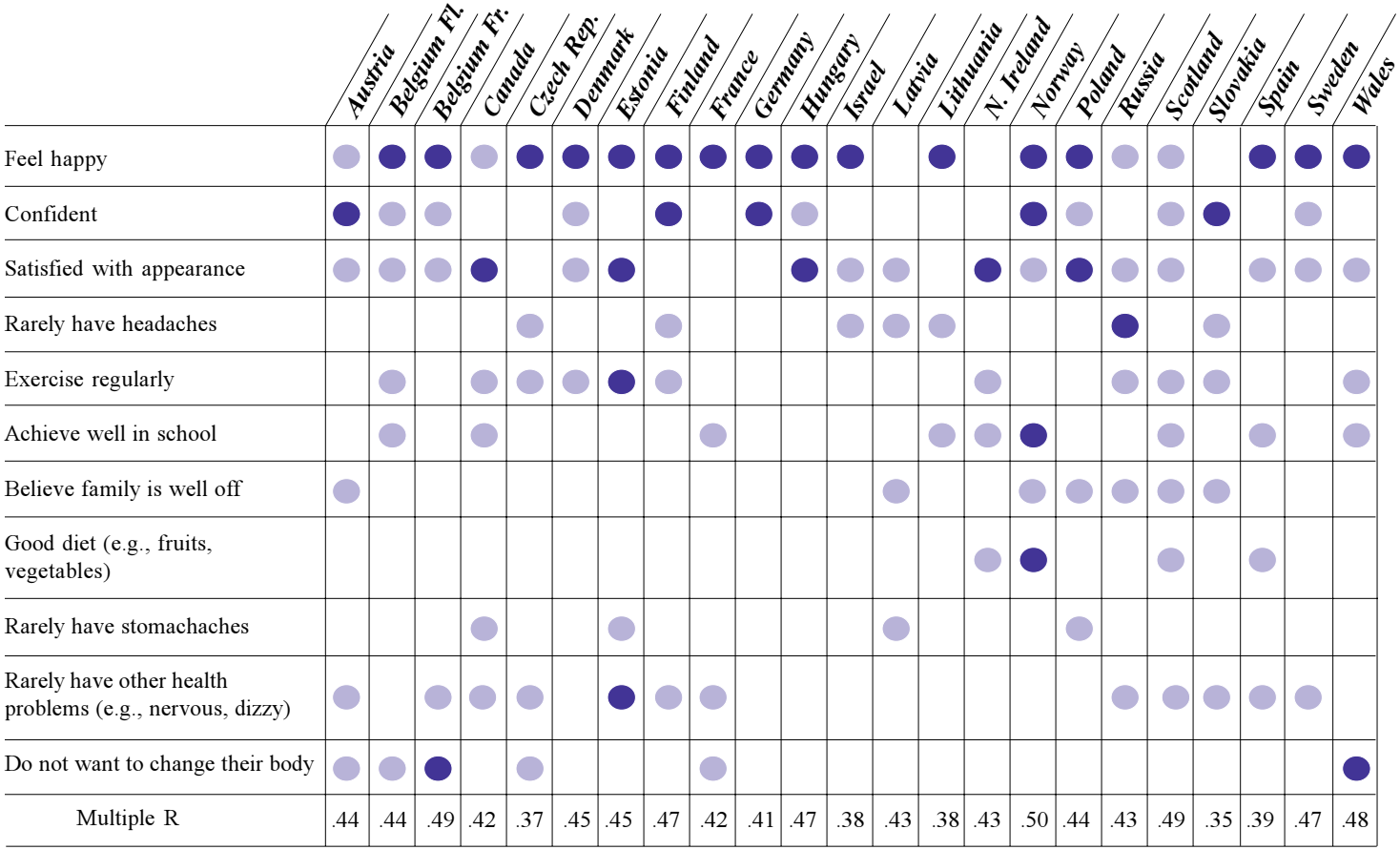
To examine the relationship between feeling healthy and diet, a simple scale was employed to assess the quality of the students' diets. A diet that emphasized fruit and vegetables was considered to indicate a healthy diet, and one that involved excess amounts of colas and candy, a poor one. As can be seen in the two figures, in 10 countries a good diet was an important predictor of feeling healthy for either boys or girls.

Another indication that, in students' minds, health is not strictly a level of physical well-being is the relationship to academic achievement. In a number of countries (nine for boys and five for girls), doing well in school is positively linked to feeling healthy.

Research has shown that the socioeconomic status of the family influences the level of health of the child, but in this survey a relationship between how well off young people perceived their family to be and their own health status was found in some countries but not all. For example, this is the case in seven countries for boys and in half of the participating countries for girls.

It was not anticipated that being satisfied with their appearance would be a more important factor in their health for boys than for girls as was the case in a number of countries. As was shown in Chapter 6, girls were more likely than boys to experience physical health problems such as headaches and stomachaches, and it follows that the presence of these symptoms was more influential for females' perceived level of health. On the other hand, boys were influenced by the absence of other health problems such as dizziness, nervousness and sleeping difficulties in more countries than were girls. Exercising regularly was associated with health in more countries for boys than it was for girls. How well off their family is has a stronger influence on girls.

Figure 9.5 Predictors of feeling healthy, 11-year-old males



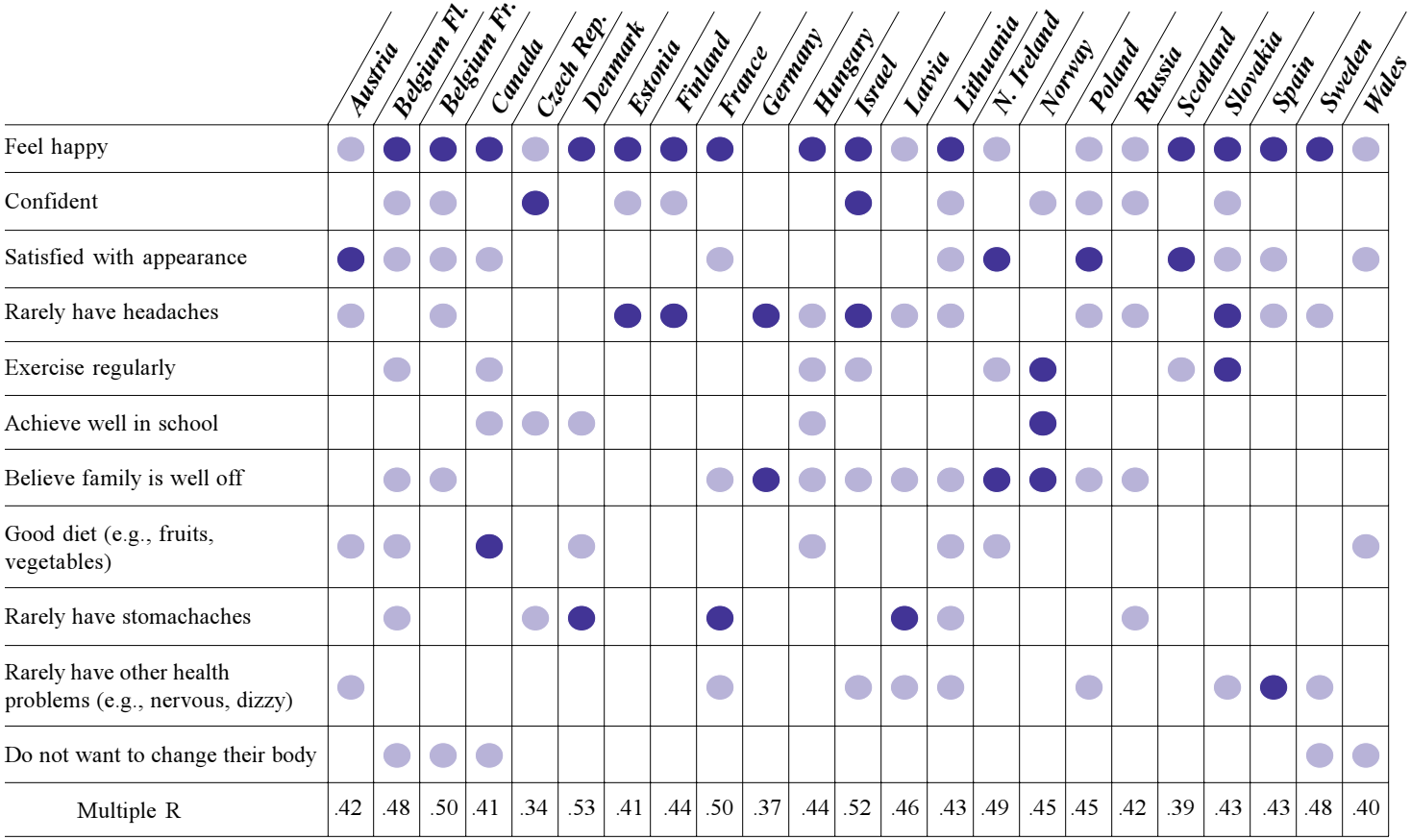
The measures used to predict health were not as strong as for smoking and happiness. As can be seen from the multiple correlations, the relationships were strongest among boys for Belgium (Fr.), Norway and Scotland and weakest for the Czech Republic, Israel, Lithuania and Slovakia. Among girls, the predictive power of the measures is greatest for Belgium (Fr.), Denmark, France and Israel; and weakest for the Czech Republic, Germany and Scotland.

E. Developmental patterns of behaviours and attitudes

The data reported here indicate that many aspects of the behaviour and attitudes of young people surveyed change significantly between the ages of 11 and 15. As well, the degree of change with age can differ by gender. Adolescence is a period of dramatic physical and emotional change when young people experience growth spurts and hormonal changes which profoundly affect their relationships with those around them. The onset of puberty does not occur at the same time for all youth and this exacerbates the uncertainty and tension between the sexes during the early teenage years. For young women, the emotional strains associated with becoming sexually mature may be accompanied by physical problems associated with menstruation. Adolescents often come to resent their dependence on adults, which in many cultures continues for a prolonged period. The increased tension between children and adults causes some adolescents to demonstrate their independence and maturity by experimentation in health-risk behaviours, such as smoking and drinking alcohol. As well, adolescents are an important target of advertising which promotes unrealistically uniform concepts of body image and behaviour. The emotional and physical turmoil characteristic of the adolescent years makes young people particularly vulnerable to such pressure.

To compile Figures 9.7 to 9.30, the data from the participating countries have been aggregated to illustrate the changes that take place from age 11 to 15 in specific aspects of physical and mental health, in relationships with parents, peers and teachers, and in the incidence of injury.

Figure 9.6 Predictors of feeling healthy, 11-year-old females



I. Physical health

The proportion of students who indicated they were very healthy decreased with age (Figure 9.7). Less than half of 11-year-old males (44%) and females (38%) considered themselves to be very healthy. By age 15 only 37 percent of males and 23 percent of females perceived themselves as having a high level of physical health. It is useful, at this point, to look at the survey results regarding factors shown to be associated with the health status of respondents when the data were analyzed by country – diet, daily exercise, frequency of physical ailments and use of tobacco and alcohol.

The data reveal that the percentage of respondents eating more than one serving per day of fruits and raw vegetables moderately decreased over time (Figure 9.8). The percentage of students who participated in sports activities every day dropped steadily (Figure 9.9). Specially noteworthy, however, are the comparatively lower rates of exercise among female students in general. While 28 percent of 11-year-old boys took part in sports activities every day, only 17 percent of girls did. By age 15, the percentages are 21 percent for boys and only 8 percent for girls.

Figure 9.7 Students who indicated they are very healthy (%)

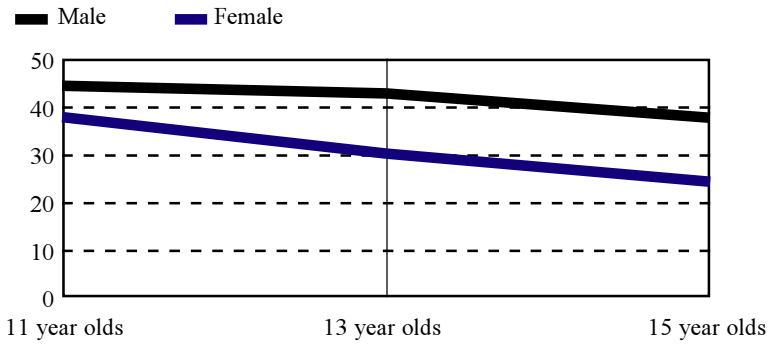


Figure 9.8 Students who ate fruit at least once a day (%)

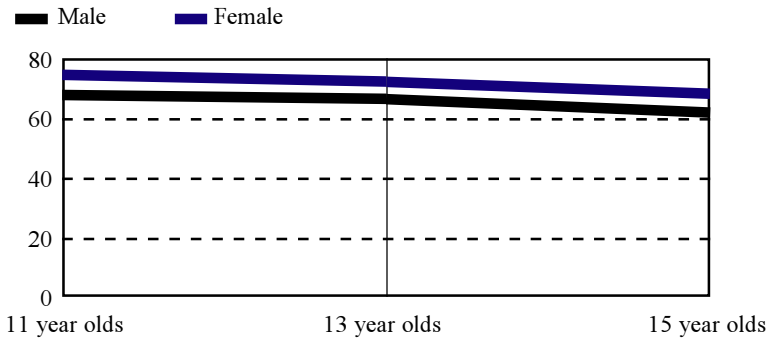
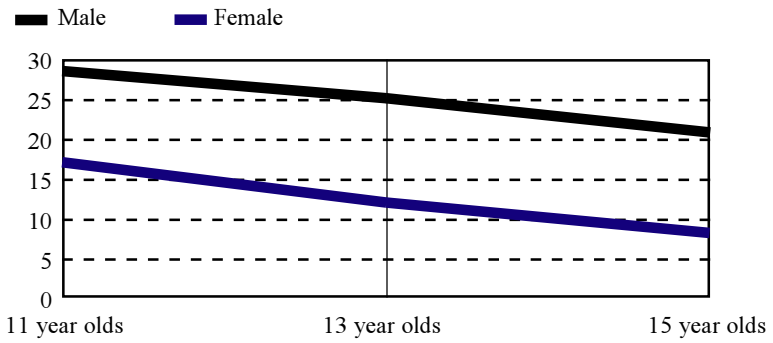


Figure 9.9 Students who participated in sports every day (%)



Girls were much more likely than boys to experience headaches on a weekly basis at all three ages and the percentages of girls who had headaches weekly increased with age. Boys' responses were essentially the same over all three age groups (Figure 9.10). Both boys and girls were less likely to experience stomachaches weekly as age increased and more likely to experience backaches. Consistent with these findings is the increase in consumption of medication for headaches by girls as age increases. However, girls also increased their consumption of medication for stomachaches as they grew older, although the proportion reporting at least weekly stomachaches decreased.

There was a sharp increase in students' use of tobacco and alcohol between the ages of 13 and 15 years. Weekly smoking in males rose from 8 percent to 22 percent between the ages of 13 and 15 and from 7 to 19 percent for females (Figure 9.11). The finding regarding youths who said they have been really drunk on four or more occasions showed a pronounced elevation in this health-risk behaviour from almost no 11 year olds to almost 17 percent of 15 year olds. Boys were more likely than girls to report weekly alcohol consumption or frequent misuse of alcohol (Figure 9.12).

Figure 9.10 Students who had headaches once a week or more (%)

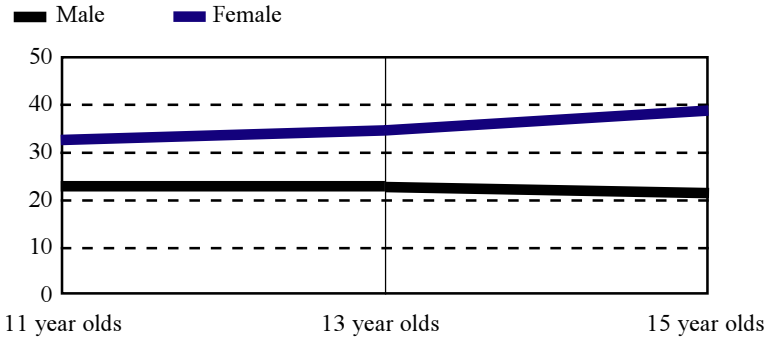


Figure 9.11 Students who smoked at least weekly (%)

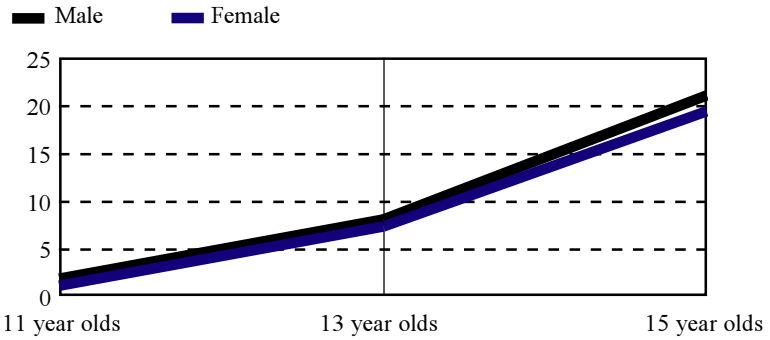
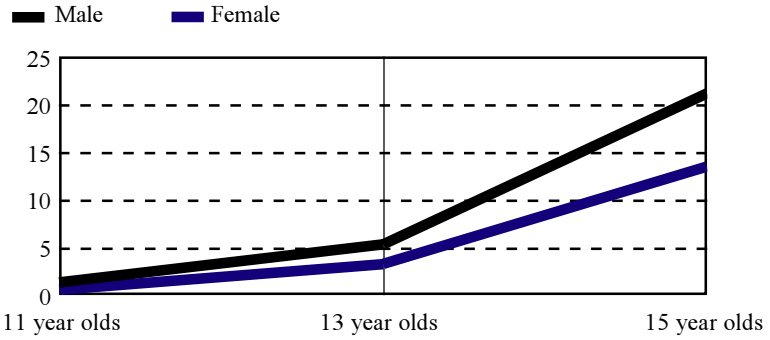


Figure 9.12 Students who had been really drunk four or more times (%)



2. Mental health

It was anticipated that the rapid and intense physical and emotional changes experienced by young adolescents would result in increased evidence of mental and emotional strain across the three age groups. This was found to be the case. Although nearly 40 percent of both the 11-year-old male and female students rated themselves as being very happy, this figure dropped significantly with only 26 percent of males and 22 percent of females experiencing the same degree of happiness among the 15 year olds (Figure 9.13).

The questions that were designed to measure such areas as self-confidence, loneliness, helplessness and body image as well as the extent of students' assimilation in their families, their peer group and their schools provided a summary of the changes that can take place across the three age groups. For adolescents the development of a strong self-concept may be one of the most critical aspects of growth and undoubtedly it contributes to their ability to make healthy lifestyle choices. Thus, measures of self-confidence are important indicators of students' adjustment to the continuously shifting demands of their social environment. Generally, students rated their feelings of self-confidence more highly at 11 than at 15 years of age. Although this substantial decrease is apparent for both boys and girls, a higher proportion of boys than girls in all age groups rated themselves as always feeling confident (Figure 9.14). On a positive note, feelings of helplessness, being left alone at school, and being bullied decreased or remained the same with age. However, girls demonstrated an increase in feelings of loneliness (14 to 20%). Students were also more likely to be in a bad mood (irritable) and to feel nervous as they grew older (see Figures 9.15 to 9.21).

Figure 9.13 Students who indicated they are very happy (%)

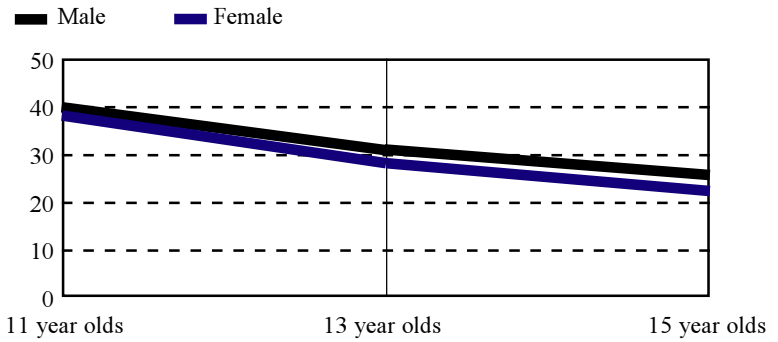


Figure 9.14 Students who indicated they always feel confident (%)

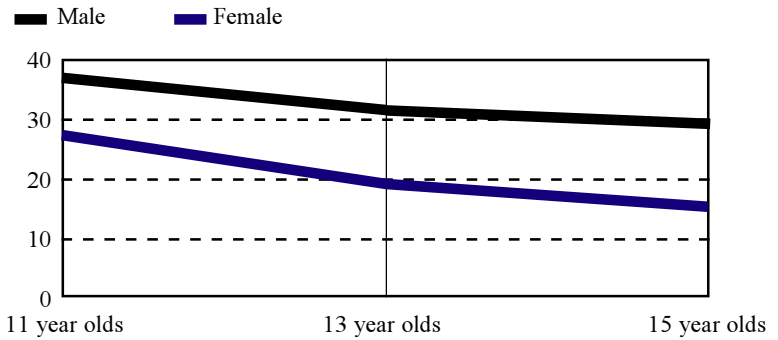


Figure 9.15 Students who indicated they always or often feel helpless (%)

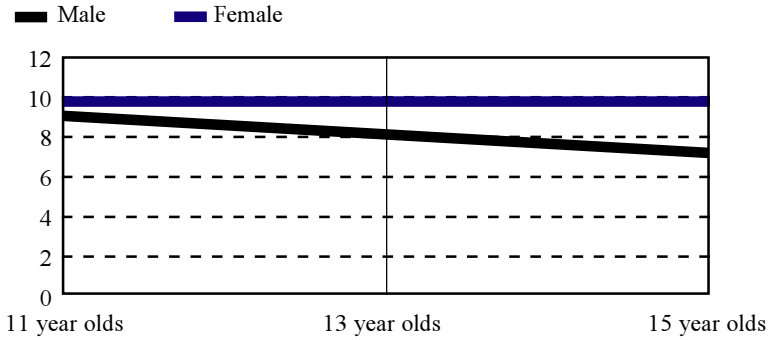


Figure 9.16 Students who have felt alone at school (%)

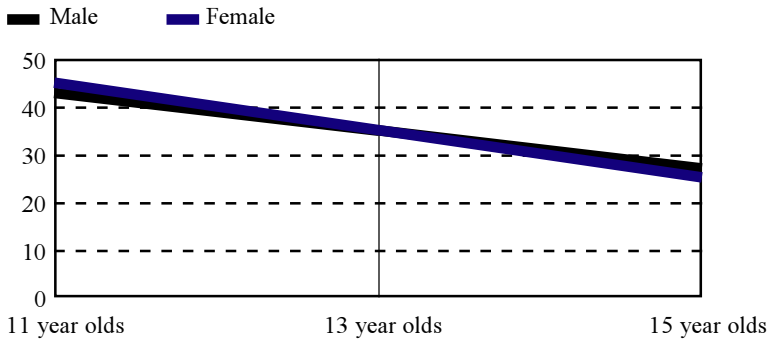


Figure 9.17 Students who felt left out of things often (%)

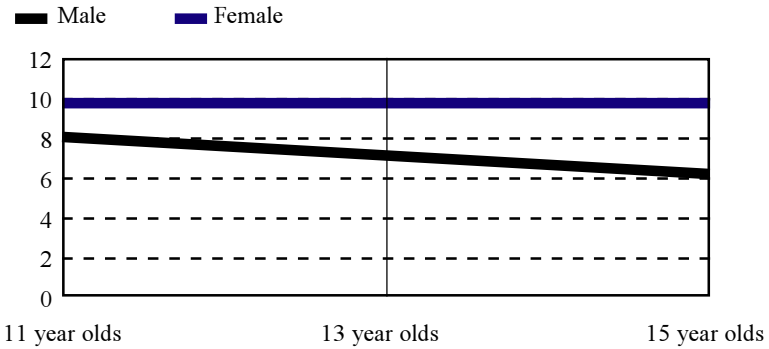


Figure 9.18 Students who have been bullied at school this term (%)

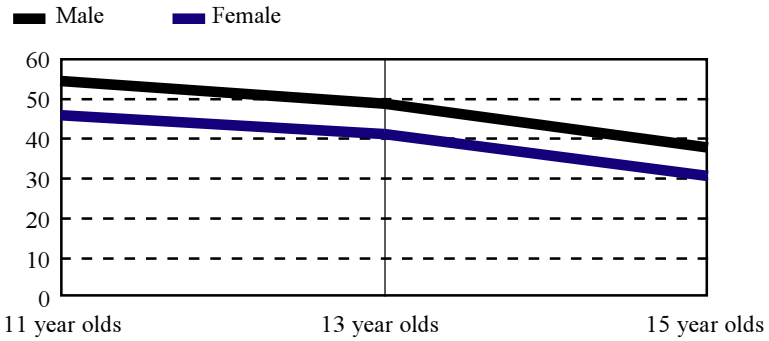


Figure 9.19 Students who were very often or rather often lonely (%)

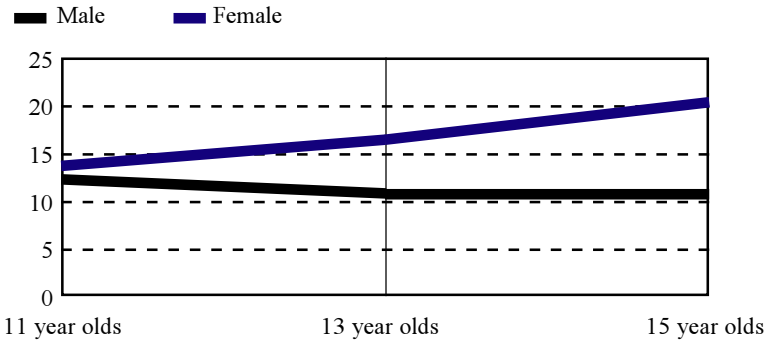


Figure 9.20 Students who were in a bad mood or irritable once a week or more (%)

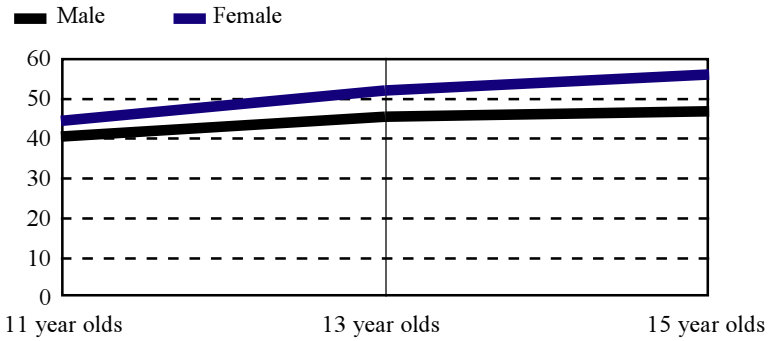
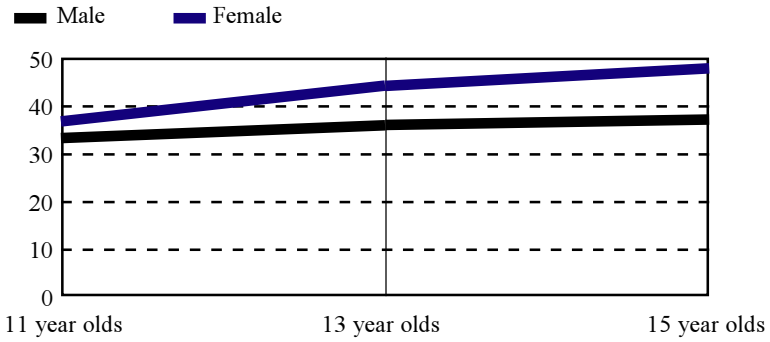


Figure 9.21 Students who experienced nervousness once a week or more (%)



The broad concept of self-esteem can be seen to include students' feelings about their appearance and body image. When asked whether they would like to change their body, almost half of all 11-year-old students responded "yes". While the proportion increased steadily for boys over time (from 40 to 53%), it surged dramatically from 51 to 75 percent for girls (Figure 9.22). Concern about weight also steadily increased for girls over time while it gradually declined for boys. Accordingly, only four percent of 15-year-old males indicated that they were on a diet. By contrast, 16 percent of 15-year-old females controlled their weight by dieting. The percentage of those students who felt their bodies are about right dropped from 51 to 46 percent for boys and from 45 to 35 percent for girls.

3. Relationships

Relationships with parents, peers and teachers, and the school environment contribute significantly to an adolescent's psychosocial development. The importance of supportive and affirming relationships in shaping the emotional maturation of youth cannot be underestimated.

Items in the survey which questioned students about their relationships with either their mother or their father demonstrated that easy, meaningful communication with parents steadily decreased with age (Figures 9.23 and 9.24). In conjunction with these changes in the parent-child relationship, students also perceived an increase in parent expectations. The figures indicating that parents expect too much show an average overall increase of 5 percent across the three age groups.

Figure 9.22 Students who indicated they would like to change something about their body (%)

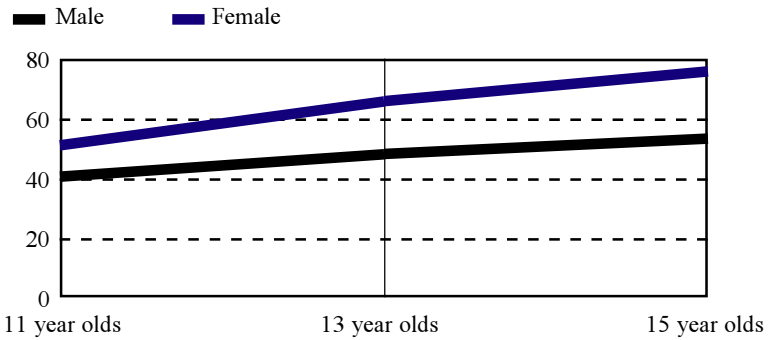


Figure 9.23 Students who found it easy to talk to their mother about things that really bother them (%)

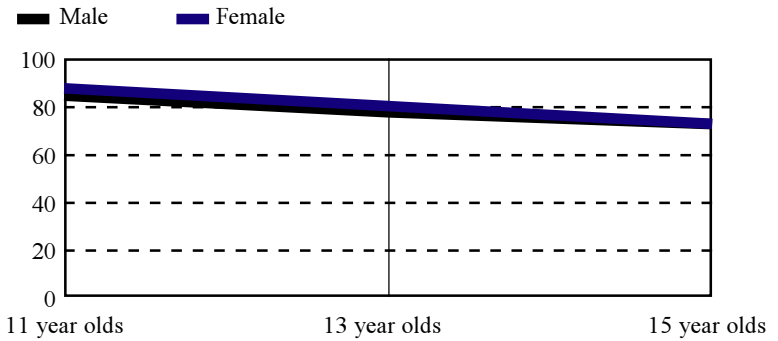
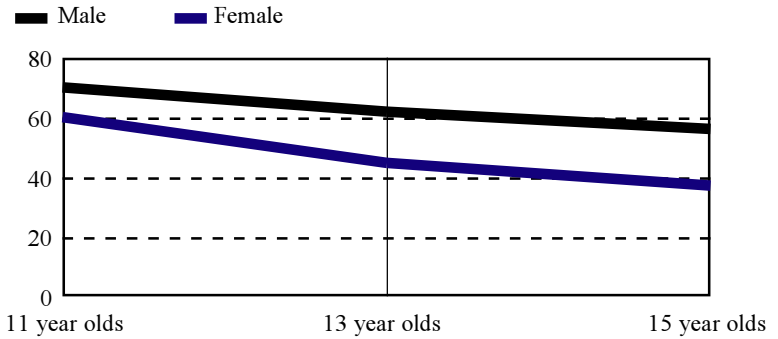


Figure 9.24 Students who found it easy to talk to their father about things that really bother them (%)



Older students spent more time away from home with friends than younger students. Survey data reveal the same steady incline in percentages for male and female students who spent five to seven evenings per week with their friends (Figure 9.25). This pattern is congruent with the finding that students' ability to communicate with same- and opposite-gender friends steadily increased across these age groups (Figures 9.26 and 9.27). The consistent shift in emphasis from secure familial relationships towards peer group affiliation may indicate the increasing importance of peer affirmation and connectedness as the parent-child relationship evolves.

As previously noted, this is a time when students are apt to participate in health-risk behaviours such as smoking, drinking alcohol and taking drugs. Youth tend to engage in these behaviours as members of groups and, therefore, an association between increased peer-group affiliation and higher rates of substance use seems to exist during this transitional period.

Another significant variable to be considered involves the relationship between students and their school environment. Students' experiences of success and achievement at school are correlated with their level of confidence, motivation and self-efficacy. Thus, classroom environments which provide positive reinforcement and facilitate the development of student autonomy and of mutually respectful student-teacher relationships are most likely to realize positive outcomes for students.

Figure 9.25 Students who spent five or more evenings a week with their friends (%)

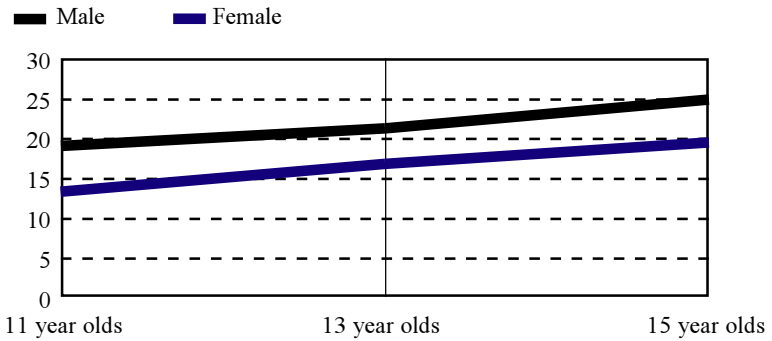


Figure 9.26 Students who found it easy or very easy to talk with same-gender friends about things that really bother them (%)

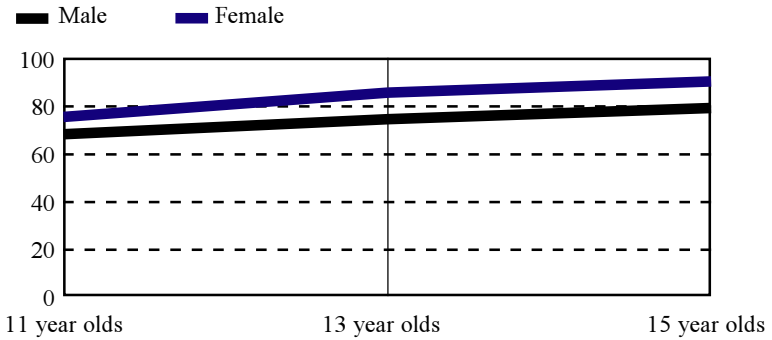
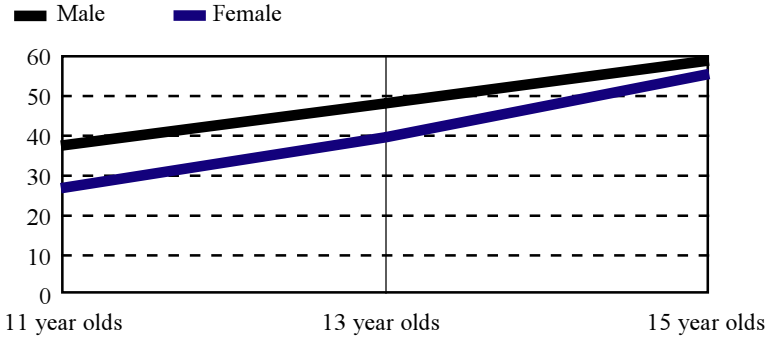


Figure 9.27 Students who found it easy or very easy to talk with opposite-gender friends about things that really bother them (%)



Survey items which examined the relationship between students and their school environment demonstrate a striking decline in the proportion of students who reported enjoying their school experience. At age 11, 26 percent of boys and 36 percent of girls said they liked school a lot. However, by age 15, only 14 percent of boys and 17 percent of girls agreed with the statement (Figure 9.28). Furthermore, students' responses to questions which pertained to the student-teacher relationship also conform to this general pattern. Figure 9.29 reveals that older students were less likely to feel that they are treated fairly by teachers. They were also less likely to feel they could express their own views and would receive help when they needed it. Overall, the proportion of students who felt that their teachers were interested in them dropped from 51 to 38 percent of boys and from 54 to 38 percent of girls.

4. Injuries

Figure 9.30 shows that the proportion of young people who indicated that they suffered at least one significant injury over the past year remained about the same for each age group. Boys were more likely to be injured than girls.

Figure 9.28 Students who liked school a lot (%)

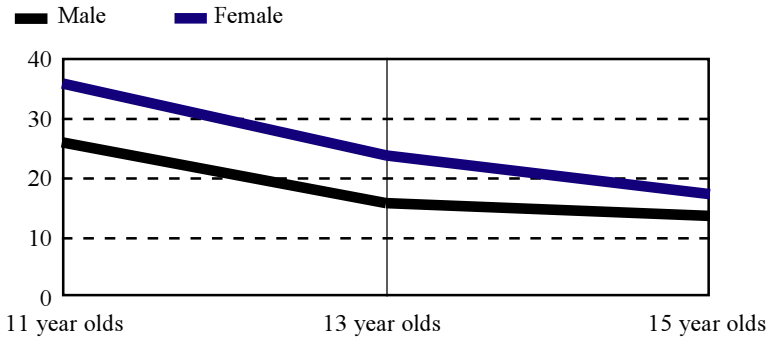


Figure 9.29 Students who agreed their teachers treat them fairly (%)

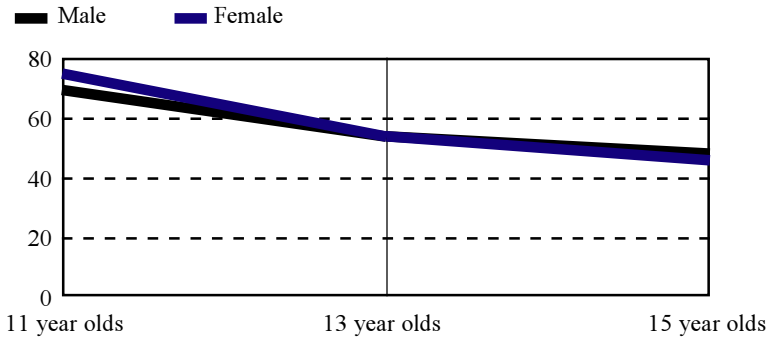
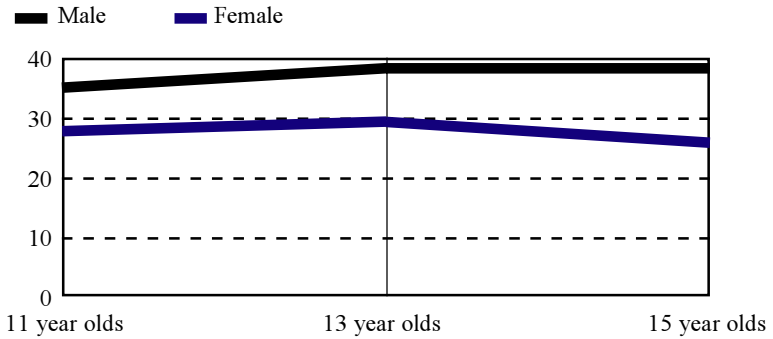


Figure 9.30 Students who had an injury treated by a doctor or nurse in the past 12 months (%)



F. Summary

Despite underlying cross-cultural differences, a number of common themes related to health-risk behaviours can be identified for youth. One of the most critical findings in this study is the verification that youth who engage in risky behaviours such as smoking and drinking are less likely to experience high levels of achievement in school or to have positive and supportive relationships with their parents. More important, this finding further suggests that health-risk behaviours are connected to the need for social integration among youth and to the development of self-esteem and self-efficacy. Young people who experience major stress in their home environment as a result of substandard academic performance are more inclined to seek satisfying relationships within their peer group. In the pursuit of affirmation and acceptance, they typically gravitate towards other young people who have had similar experiences of social alienation and disaffection.

The policy implications of these findings are quite clear: education programs designed to discourage such health-risk behaviours as smoking among young people are likely to be ineffective. Programs that prevent alienation and disaffection among youth are more likely to contribute to a reduction in health-risk behaviour.

Concepts such as health and happiness were found to be broadly defined by young people. Positive relationships at home and school and with peers are fundamental to the development of a good sense of well-being and self-esteem in young people. Programs designed to make school more accepting and supportive, to encourage parents to communicate effectively with their children and to facilitate the social development of youth would appear to follow from such findings.

There were differences in the proportion of younger and older youth surveyed who manifested social and emotional problems that should be of concern to health professionals. Declines in confidence, happiness and positive relationships with parents, and increases in nervousness, irritability and helplessness with age are particularly disconcerting. The increase in concern about body image, especially among girls, must be viewed as a problem, especially as it may lead to dietary disorders. In fact, overall, the greater vulnerability of girls to problems associated with emotional and mental health warrants special attention.

CHAPTER

10

Summary and Policy Implications

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Summary and Policy Implications

A. Introduction

This report presents the preliminary findings from WHO's fourth Health Behaviour in School-Aged Children (HBSC) Study. It provides a wealth of information about the health and lifestyles of over 100 000 children living in 24 countries who participated in the survey conducted during the 1993-94 school year. The survey was undertaken by research teams in each of the participating countries who were instructed to follow a rigorous study protocol. Any survey carried out by more than one research team will have problems in ensuring consistency in data collection. In this survey, as outlined in Chapter 1, such problems are further compounded by the questionnaire being administered in a variety of educational systems, languages and cultures. Given such reservations about the likely comparability of data from different countries, cross-country comparisons of the prevalence of individual health behaviours based on the HBSC survey should be treated with caution. On the other hand, the data presented in this report do reveal considerable variations and common patterns in the prevalence of individual health behaviours among young people from different countries. It has been argued elsewhere that such large differences are unlikely to be fully accounted for by the above methodological problems, and may therefore reflect reality. Strong similarities in the interrelationships between variables in different countries are also good evidence that there is validity in comparing the data from these different countries.

Notwithstanding these methodological considerations, the results presented here have a number of important implications for promoting public health. Thus in the following sections the main findings are summarized and strategies are suggested that might be used in the development of policies and programs to improve the health of young people in Europe and North America.

B. Summary of findings

1. Tobacco and alcohol

In every country the use of tobacco and alcohol increased with age. By the age of 15, the majority of young people (with the principal exception of those in Israel) had experimented with the two substances and a hard core of respondents had gone on to be regular smokers and drinkers, with about one in four reporting two or more episodes of drunkenness. While alcohol use was more common among boys than girls in nearly all countries, there were cross-national gender variations in tobacco use; in most western European countries, Canada and Greenland more girls than boys smoked, but in eastern Europe this situation was generally reversed.

2. Exercise and leisure-time activities

Examination of the data on exercise patterns outside school hours suggests that in most countries, as young people progress from 11 to 15 years old, they exercise less frequently. The downward trend in frequency of activity was generally more marked for girls than boys, such that by the age of 15 at least three-fifths of boys in all countries exercised two or more times a week outside school hours, whereas among girls this level of exercise participation was achieved in only five countries (Austria, Denmark, Finland, Germany and Norway). Overall, exercise participation rates were lowest among girls in the eastern European countries and Spain. Girls were also less likely to participate in the less active leisure pursuits surveyed, namely watching television and videos and playing computer games.

3. Dietary habits, body image and dental care

Although there are difficulties in interpreting the data about the young people's dietary habits, four areas of concern are highlighted by this survey. First, there is evidence to suggest that the diet of a significant number of young people in all countries does not conform to current nutritional advice. For example, over two-fifths of French, Greenlandic and Welsh 11 year olds do not eat fruit once a day, while over two-thirds of 13 year olds in Israel, Northern Ireland and Scotland consume sweets at least once a day. Second, as young people mature and gain control over their food consumption patterns they seem less likely to choose healthy foods, such as fruit. Boys generally appear more likely to eat less nutritious foods and less likely to eat nutritious foods than girls; this is indicated, for example, by the consumption of hamburgers, hot dogs and soft drinks. Third, dieting or feeling a need to lose weight appears to be a widespread phenomenon among girls. Fourth, boys are also less likely than girls to brush their teeth twice daily. In fact in the majority of countries fewer than half of the 15-year-old boys brushed their teeth twice daily, whereas among 15-year-old girls this was the case only in Latvia and Lithuania.

4. General health, physical ailments and medication use

In only one country, Sweden, did the majority of 11, 13 and 15 year olds rate themselves as very healthy. This proportion was generally lowest, at below a third in each age group, in eastern European and the United Kingdom countries. Overall, students seemed more bothered by frequent headaches than by frequent stomachaches or backaches, and more likely to resort to medication when they had headaches than when they had the other ailments asked about. The data also indicated that in most countries girls were much more likely than boys to suffer from a range of ailments (for example, headaches, stomachaches and irritability), to take medication to ease the symptoms of these ailments and to rate themselves as less than very healthy. The gender differences associated with these ailments are, in part, related to the onset of menstruation at this stage in the lives of young women. These negative health indicators were also generally more common among older than younger students, though 15 year olds tended to be least likely to frequently suffer from stomachaches and to take medication for sleeping difficulties and coughs.

5. Psychosocial adjustment

Although there were substantial differences between countries in responses to questions about mental health and relationships with peers and family, in nearly all countries only a small minority of students regularly felt lonely, helpless or left out of things, while the majority felt they made friends easily, had at least two close friends and found it easy to talk to their mother. Less positively, the majority of students did not describe themselves as very happy, with the 15-year-old and east European students generally the least likely to describe themselves in these terms. There was also further evidence to suggest that girls found their teenage years more difficult to cope with than boys. For example, in most countries fewer girls than boys described themselves as very happy and as being highly confident, and more of them described themselves as feeling frequently lonely and as being regularly depressed and feeling left out of things. Moreover, with several of the mental health indicators (such as loneliness, confidence and depression) the gender differences widened as age increased.

6. Injuries

This study reaffirmed other research findings that unintentional injuries may be the most serious health problem to face school children in western societies. Nearly 30 percent of the respondents reported an injury requiring medical attention during the previous year: two-thirds of these injuries resulted in at least one missed day of school or required medical procedures such as the placement of a cast, surgery or hospitalization. Boys were consistently more likely to report injuries in all countries in all age groups.

For younger students injuries were more likely to occur in the home, but among 15 year olds sport facilities were the most common injury sites. Over 40 percent of reported injuries occurred at home or at school. Sprains and strains were the most common injuries followed by broken or dislocated bones.

Since most injuries occur around schools and sport facilities, injury prevention programs can be targeted to these settings. Seatbelt use, a form of injury prevention that has been demonstrated to be effective, varied widely across the countries. Over 60 percent of students always wore seat belts in Austria, Canada, France, Finland, Northern Ireland, Norway and Sweden; the figure was much lower for Greenland and most eastern European countries.

7. The school experience

Schools with a hospitable environment and caring teachers appear to contribute positively to students' emotional well-being and social development. Students who indicated they are satisfied with school tended to show positive attitudes in several areas: they were less likely to be smokers or to drink excessively; relationships with teachers, parents and peers tended to be positive; and they were more likely to feel healthy.

Satisfaction with school varied widely across countries, but there were some commonalities. Boys, for the most part, did not like school as much as girls and fewer indicated that they thought school was a nice place to be. Generally students in Belgium (Fl.), Canada, Germany, Norway and Sweden were most satisfied with school.

Bullying behaviour at school was found to be quite common. Those who bully and those who are bullied both reported physical and mental health problems as well, especially loneliness. Far more boys than girls indicated they bullied or were bullied with the largest proportions reporting this view in Austria, Denmark, Germany and Greenland.

8. Interrelationships

The interrelationships between and the determinants of various health behaviours have been widely studied (e.g., Glendinning et al., 1994; Lader & Matheson, 1991; Resnick et al., 1993). The HBSC Study makes it possible to examine these interrelationships across countries. Only illustrative analyses of interrelationships are presented in this report; researchers in many of the participating countries will be preparing more extensive analyses of HBSC data over the next two or three years. The analyses undertaken for this report concerned smoking among 15 year olds, happiness among 13 year olds and feelings of health among 11 year olds. The key findings were

- in most countries, smoking by 15 year olds is associated with feeling unhealthy, spending a lot of time with friends outside school and away from home and other health-risk behaviours, such as alcohol misuse and a lack of exercise. These relationships were particularly strong among boys;
- happy 13 year olds in the majority of countries are characterized by feelings of being healthy, good friendships, success in and a positive attitude toward school, satisfaction with their appearance and little evidence of physical and emotional problems;
- 11 year olds' perception that they are in good health tends to reflect their state of happiness, level of confidence in themselves, satisfaction with their appearance and a lack of physical problems.

C. Policy implications

As previously mentioned, the findings presented here are based on preliminary analyses of the data from the 1993-94 HBSC survey. Nevertheless, these analyses have identified a number of themes which have implications for those planning action to promote the health of adolescents in Europe and North America.

First, considerable variations in adolescent health and health behaviours were found between countries; for example, the proportion of 15-year-old boys who brushed their teeth at least twice daily was around four times as great in Sweden as it was in Lithuania, and 15-year-old girls in Hungary were almost three times as likely as their counterparts in Austria to feel depressed. Nevertheless, in nearly all countries a significant proportion of the young people had experimented with smoking, regularly used alcohol, ate an unbalanced diet, were inactive in their leisure time, suffered from a range of ailments and were in poor mental health. Furthermore, analyses conducted by some of the countries who have carried out earlier HBSC surveys have indicated that there has been little improvement over the past decade in the level of regular smoking, illicit drug taking and alcohol misuse among young people (Health Promotion Agency for Northern Ireland, 1995; Roberts et al., 1995). Such findings suggest that health promotion initiatives targeted at young people will need to be a priority for the upcoming period if the goals of the Health for All movement are to be achieved.

Second, the data demonstrate that despite laws in many countries restricting the availability of tobacco and alcohol to minors, a significant proportion of youth as young as 13 have sufficient access to tobacco and alcohol to regularly engage in their consumption. More active enforcement and strengthening of sales legislation relating to these substances would therefore seem advisable. In Illinois, for example, measures undertaken to enforce the legislation on sales of tobacco to underage consumers, which included introducing a tobacco retailer's licence and small fines for minors caught in illegal possession of cigarettes, resulted in a decrease in illegal sales from 70 percent to under five percent in 18 months (Davis, 1991).

Third, the data indicate the need to carefully consider the timing of health promotion programs. For example, the findings in Chapter 2 showing the extent of regular smoking and the misuse of alcohol among 13 year olds highlight the importance of early intervention among elementary school students to reduce future substance use. Developing, field testing and disseminating project materials targeted at the elementary and nursery school child may be an important future priority.

Fourth, the data indicate that the individual health choices of adolescent girls may require much closer attention in the next few years. The data show that adolescent girls were more likely than their male counterparts to experience poor physical and mental health, and were less likely to engage in regular leisure-time exercise. In addition, in many countries, and particularly in western Europe and North America, smoking was more common among girls than boys. It has been argued elsewhere that during the 1970s and 1980s much of the attention given to adolescent smoking, for example, was subtly directed towards boys and failed to adequately address the motivations of their female counterparts to smoke (Smith et al., 1994). These motivations have much to do with self-image, particularly the desire to be slim; as was shown in Chapter 4, dieting or feeling a need to lose weight is widespread among girls. Although continued efforts are required to learn more about adolescent girls' motivations in adopting unhealthy behaviours, making current initiatives more relevant to females is a matter of some urgency.

Fifth, although in the past practitioners and researchers have tended to consider each health behaviour separately, the results presented here provide support for a lifestyle approach to health promotion with young people. For example, in all countries smoking behaviour was associated with alcohol misuse. While it has been argued that the contribution made by interventions which address only one health behaviour should not be underestimated (Nutbeam et al., 1989), developing initiatives which consider health-enhancing or health-damaging lifestyles as a whole may be a more effective way to organize health promotion for young people.

Sixth, despite the differing social and cultural conditions prevailing in different parts of Europe and North America, HBSC Study data indicate some striking similarities between countries regarding interrelationships between and determinants of health behaviours. This is illustrated by one of the examples presented in Chapter 9 of this report which shows a consistent association between the amount of time spent with friends, both after school and in the evenings, and smoking. This association was strong in virtually all countries despite the previously mentioned variability between countries in methodology and in the prevalence of the health behaviour.

On a practical level, such cross-country homogeneity in interrelationships among determinants of health behaviours could result in youth health programs which have been successfully piloted in one country being disseminated for use across Europe and North America, though some previous cross-national adaptions of school based programs have had disappointing results (Nutbeam et al, 1993). It may also allow the development of common agendas for youth health promotion programs across several countries, such as the European Network of Health Promoting Schools (ENHPS) which is a joint project of the WHO Regional Office for Europe, the Commission of the European Communities and the Council of Europe. This project aims to create health promoting schools, a health promoting school being one which balances the effort and attention given to the health education curriculum with action directed towards improving the school environment and links with parents and the wider community (Young & Williams, 1989). It is intended that in each of some 30 European countries ten pilot schools will test the concept in practice prior to a training and dissemination program at both the international and national levels (WHO et al., 1993).

Seventh, the data clearly identify a challenge to most educational systems to create a positive school environment and provide a more positive experience for young people. Evidence from the survey shows that, in general, as young people progress through school they become more alienated from their schools and that students who have a negative school experience are particularly likely to engage in health damaging behaviours. A consensus on how schools should adapt in order to provide a more positive experience for students is provided by the wider literature on alienation and includes, for example, providing students with opportunities to make a meaningful contribution to school and/or community life, re-orientating traditional didactic/autocratic teaching methods towards participative approaches, and examining and reinforcing notions of

personal social responsibility through teaching and through the organization of the school (Calabrese, 1987).

Eighth, the findings indicate that unintentional injuries in youth represent a serious health problem in all countries. The number of injuries that occur at home, at school and in sport facilities and playgrounds can be reduced with effective prevention programs. Further analysis of the data designed to understand the psychosocial and contextual factors that contribute to injuries may provide direction to those responsible for the development of prevention programs.

Finally, it is clear from the data presented here, and from other research done around the world, that health promotion interventions carried out in only one setting, such as the school or with families or peer groups, are unlikely to be sufficient to promote healthy living among young people. For example, the data discussed in Chapter 9 indicate that young people's perceptions of feeling healthy are associated with both their feeling about school and their family's social status, while young people's decision to smoke is associated with both parental and peer relationships. Maximizing the health potential of young people is therefore likely to require a sustained and coordinated program of action which includes school health education, health promotion programs targeted at parents, and work with youth organizations, along with a range of environmental measures such as restrictions on advertising and sport sponsorship by tobacco companies and improvement in youth-oriented leisure facilities.

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Appendix A: Characteristics of Countries

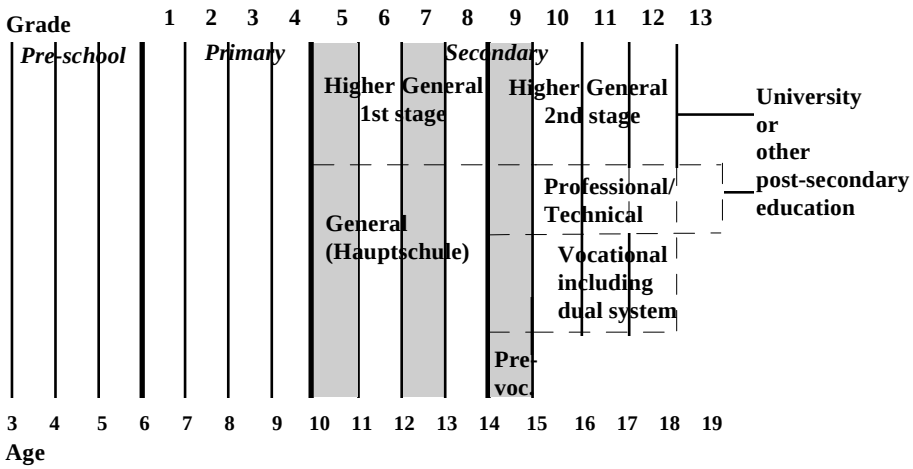
The ethnocultural makeup and economy of the participating countries are briefly described and figures outlining the educational system of each country are presented. As much as possible, the figures employ the same format for each country to allow for comparisons of those aspects of each system that might affect the responses of the young people surveyed. The shaded areas indicate the grades, forms or school years from which the student samples were drawn. Although various terms are used in the 24 participating countries to denote each year of schooling, here and in the main body of the report, the term "grade" is used and each is numbered sequentially from the first compulsory year of education. Preschool education is included only if enrolment is 50 percent or more of the eligible age group.

Austria

Austria is a relatively small country (83,853 square kilometres) in central Europe with a population of about 7.6 million. It is primarily a Germanic country (German is the official language), but there are significant minorities of Croats, Magyars and Slovenes and smaller groups of Romanians, Serbs and Italians. The economy is based on agriculture, manufacturing and mining, and there are large commercial banks and river/air transport companies. About a quarter of the labour force is involved in manufacturing wood, glass, textile and ceramic handicrafts.

Most schools are nationally administered; a few are either regional or private institutions. The curriculum is developed nationally, but schools have some autonomy in designing curriculum and school organization. School attendance is compulsory for nine years, from age 6 to 15. The most common pattern of schooling is four years in primary school (*Volksschule*), then four years in middle school (*Hauptschule*) which is organized into two streams differentiated by curricula and academic requirements. This means that at age 10, students face their first crucial transition decision. After completing the first stage of secondary school, students have several choices in the ninth year: they may take one year of pre-vocational training, leading to an apprenticeship program, or an academic program and then enter a training college for up to four years for teacher training, vocational or technical programs. Therefore, there are three additional options upon entering the second stage of secondary school: general education, university preparation or work-oriented programs. All secondary school programs and training college programs culminate in a

Austria's educational system



matriculation examination which qualifies a student for entrance to post-secondary education.

For the HBSC survey, students in the fifth and seventh years of the first stage and year 1of the second stage of secondary school were surveyed. The proportion of students who repeat a school year ranges from 2.5 percent in the lower grades to 8 percent in the higher grades. Physical education classes are compulsory throughout school for between two and four hours a week. Health education is optional with content determined mainly by classroom and/or subject teachers.

Belgium

Belgium is a small country on the North Sea bordering the Netherlands, France and Germany. It has a population of about 10 million in its 30,519 square kilometres. There are three official languages; Flemish (60%) and French (40%) predominate, with less than one percent speaking German. The presence of the two language groups has created a profound duality in modern Belgium affecting every facet of national life. The leading industries include steel, coal, chemical and petroleum firms, and a large textile industry. Belgium leads the world in the production of cobalt and radium salts, and is a major producer of coal tar, fertilizers and plastics.

The education system is "communauterized" (federalized) with three education ministries to administer schools for each of the three language groups. There are official schools and free schools, most of which are religious; all are funded by the state, province and municipality.

The Flemish school system

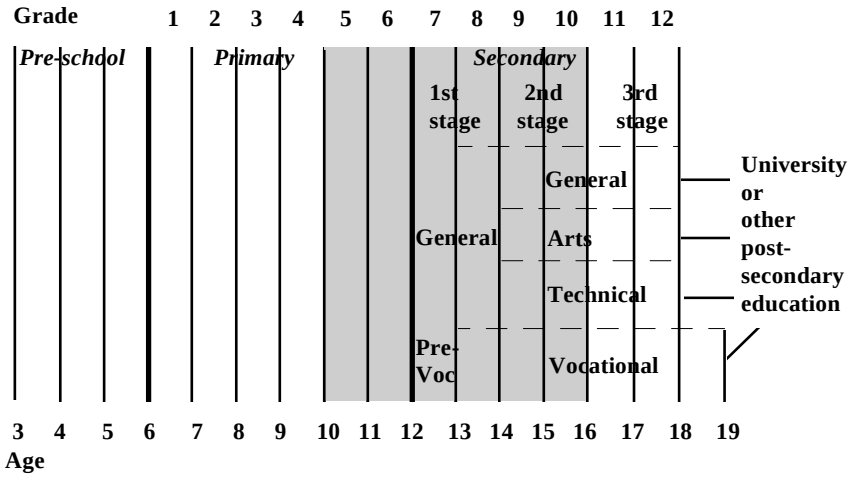
In Flanders there are four school networks: state, provincial, municipal and Catholic. School is compulsory for 12 years or from age 6 to 18; however, at 15, students may continue in part-time education until age 18. General education offers four types of education: general, technical, arts and vocational. Primary and secondary school each last six years, the latter with three two-year cycles. Upon completion of secondary school, students are eligible for university entrance or short (3–4 years) or long (4–5 years) tertiary programs outside universities. Students who complete secondary school in a vocational education program must take a seventh year to qualify for entrance to higher education. There are two ages at which students make a crucial transitional choice: at age 12, they select a general education or a pre-vocational program and at age 14, they choose arts, technical, or vocational education or to continue in the general education path.

The survey was administered to students in grades 5 to 10 in order to select a sample of 11, 13 and 15 year olds. Ministry of education data indicate that four percent of primary students repeat at least one year of school and by secondary school one-third of the students have repeated at least one grade. Physical education is compulsory for each age group and is taught for between one and two hours a week. Health education is optional.

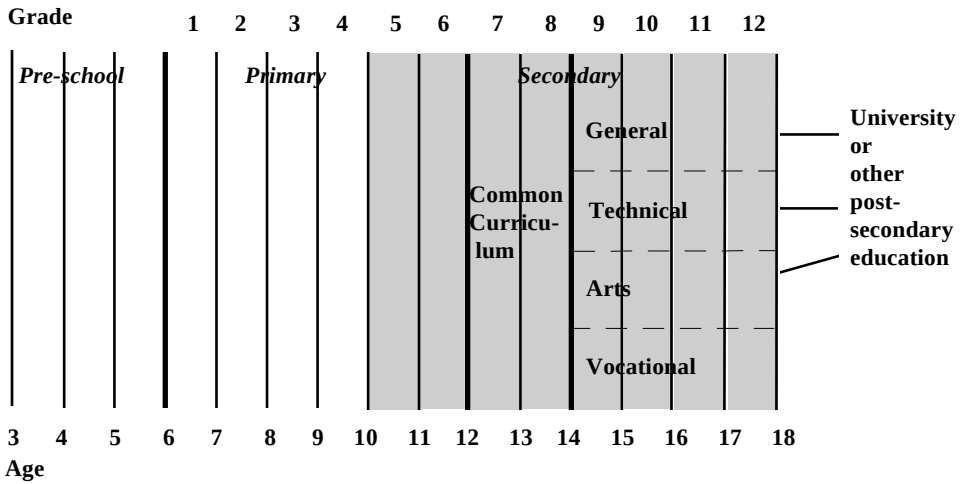
The French school system

There are many similarities between the Flemish and French systems. The three two-year cycles system has been adopted by the Belgian French, but for the first two years a common curriculum is offered. At age 14, students must choose general, technical, artistic or vocational education. The traditional two three-year cycles option is now available to very few students in

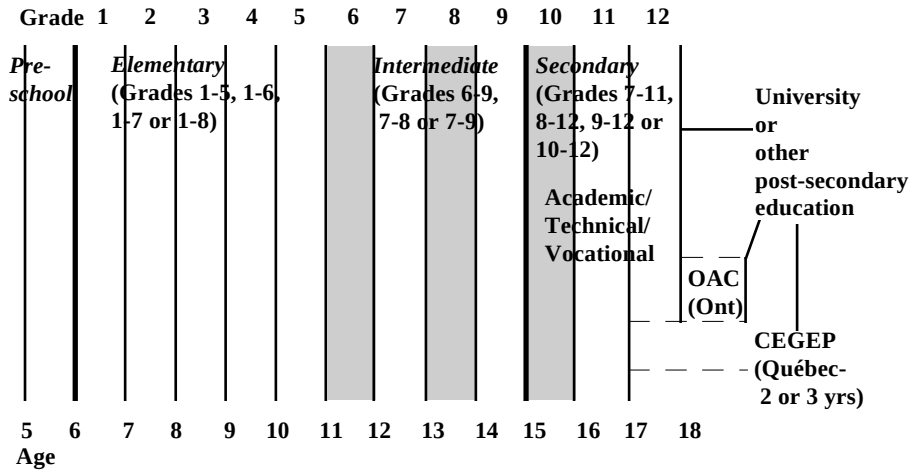
Belgium's (Flemish) educational system



Belgium's (French) educational system



Canada's educational system



the French system.

Students aged 11, 13 and 15 should normally be in the sixth grade of primary school and the second and fourth levels of secondary school respectively, but a high rate of students repeat a grade. By the first year of secondary school an average of 24 percent of the students have repeated a year of school; by the fourth year of secondary school this figure has increased to 54 percent. The survey was administered to students from the fifth grade of primary school to the sixth level of secondary school (normally ages 10–19) and the international sample with the targeted ages was then extracted from the total sample. Physical education is compulsory for all grades and is taught for between two and three hours a week. Health education is optional or unavailable.

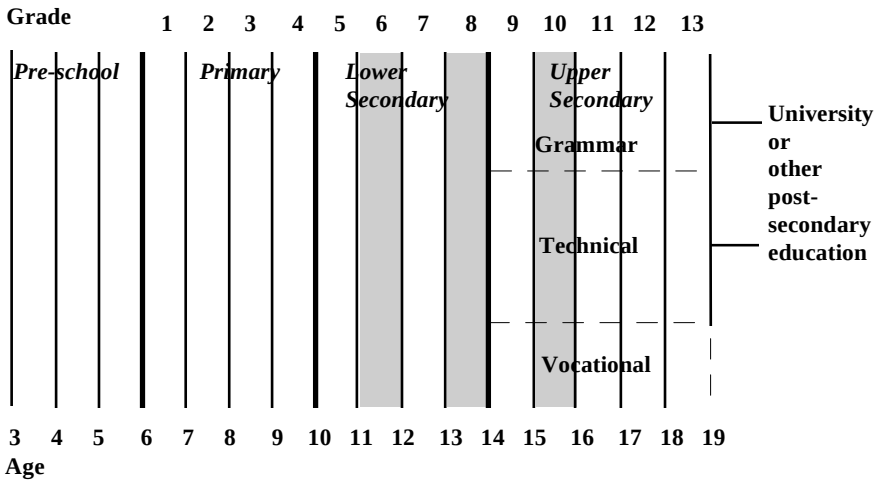
Canada

Canada, with an area of 9,976,185 square kilometres, comprises ten provinces and two territories with a population of almost 28 million. It borders three oceans – the Pacific, Atlantic and Arctic – and the United States. There are two official languages – English and French. Education is offered in both languages where warranted by population, and French immersion programs have been widely implemented in English-speaking Canada. There are extensive natural resources which are the basis for lumber, mining, gas and oil, and hydroelectric industries. On the prairies many types of grain are grown – predominantly wheat, which is a major export. Canola production is also becoming a major source of revenue. Major financial institutions, manufacturing and high-tech industries also contribute to the economy.

Education is a provincial responsibility, thus there are several structural variations across the country. Attendance is compulsory between age 6 and 16. Depending on the province or territory, children attend primary school from grades 1–5, 1–6, 1–7 or 1–8 and secondary school from grades 7–11, 7–12, 8–12, 9–12 or 10–12. In some provinces there are intermediate schools from grades 6–9, 7–8 or 7–9. Students in Ontario are required to complete six Ontario Academic Credits (OAC) to qualify for university entrance. Secondary schools usually offer programs at two levels of difficulty as well as vocational programs. Upon completion of secondary school, students are eligible for entrance to community colleges and universities. The age at which Canadian youth make important educational decisions varies across the country. For the most part, these decisions are made at age 15 or 16 at the beginning of grade 10. In Québec, a critical decision must be made at age 17 when the students determine their program choices at entry to a *Collège d'enseignement général et professionnel* (CEGEP), which can lead to work-related programs or university entrance.

Students from grade 6, 8 and 10 were surveyed across the country. It is rare for students to repeat a grade in Canada, especially up to grade 8. In secondary school a student may have to repeat a subject, but rarely a whole year. In most of Canada, physical education classes are compulsory up to grade 9. Formal health education is usually taught in conjunction with these classes, often by specialist teachers for students in grade 7 to 9.

Czech Republic's educational system



Czech Republic

The Czech Republic's population of 10,300,000 is a mixture of Czechs (81%), Moravians (13%), Slovaks (3%) and others (3%) who live in an area of 78,863 square kilometres in the western part of the former Czechoslovakia. In 1989, the communist regime collapsed and, in 1993, Czechoslovakia separated into two countries – the Czech Republic and Slovakia. This has resulted in a period of great change for both countries. The Czech Republic is a highly industrialized nation deriving 64 percent of its income from the production of manufactured goods such as textiles, shoes, glass and machinery. Agriculture and forestry contribute about 14 percent to the national income. About 45 percent of the labour force is employed in service industries.

Formal education is compulsory from age 6 to 15. Changes in the system are underway. Students attend basic school for nine years which comprises four (in the future, five) years of primary school and five years of lower secondary school. Basic school is comprehensive but, since 1990, children who are high achievers may leave after the fifth, sixth or seventh year and attend a gymnasium (academically oriented school). Generally, at age 15, students are directed to one of three upper secondary school types – gymnasium (grammar), secondary specialized and conservatories (technical), or vocational. The decision is based on the results of entrance examinations and achievement in school. Secondary specialized schools provide general education along with specialized study in areas such as nursing, technical education, and

accounting. For those attending these schools and the gymnasium, the four- or five-year programs end with a matriculation examination which qualifies the student for university entrance or other post-secondary programs. The secondary vocational schools are three-year programs which conclude with an apprenticeship examination. Students who have entered this type of institution with high grades from their compulsory education can choose a four-year program which finishes with both general education and apprenticeship examinations.

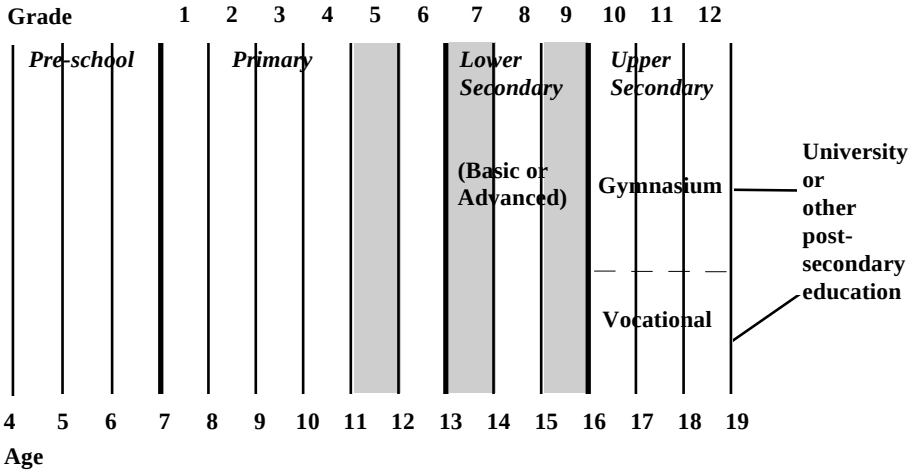
For the international sample, students from grades 6, 8 and 10 were surveyed. A substantial proportion of students repeat a grade and this increased the number of out-of-range respondents from the surveyed grades. Physical education is compulsory for students up to age 15. They have two or three lessons per week (the decision is up to the principal of the school). In the 1995-96 school year, health education (family education) will be optional at each grade level with one lesson per week.

Denmark

Denmark, with a population of 5.1 million, is part of Scandinavia. Its land area is 43,077 square kilometres. Like its neighbours, Norway and Sweden, the population is very homogeneous and only 3 percent is of non-Danish origin. The official language is Danish. The Danish economy is based mainly on industry (food-processing, metals, machinery, textiles and furniture) and agriculture. Dairy and meat products are principal exports.

Most children attend a preschool class at 6 years of age; education is compulsory from age 7 to age 16. Primary and lower secondary pupils are grouped in classes and remain together for nine years. Upon completion of this stage, at age 16, students write a leaving examination which determines their future path. They may attend upper secondary school for three years (35%), basic vocational training school (46%) or leave school (19%). Every school is administered by a board of parents and teachers who are in charge of staffing and management. Curriculum development takes place at the national as well as at the local level, with minimum national content and objectives requirements. These are augmented at the local government and school board levels. In Denmark, students in the fifth, seventh and ninth grades responded to the questionnaire. Very few students repeat a grade in the Danish school system. From age 7 to 16, students have two hours of compulsory physical education per week. Health education is compulsory, but not formally given space in the curriculum; it is usually integrated with other subjects and taught sporadically.

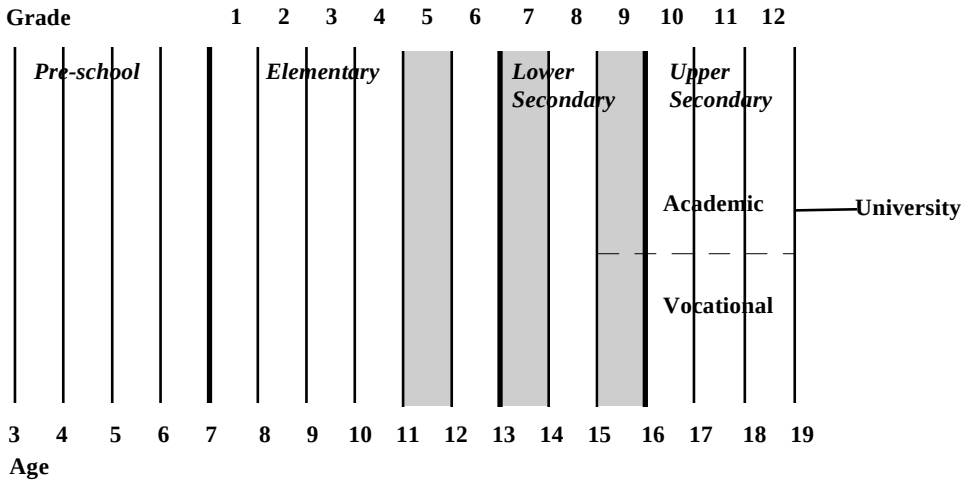
Denmark's educational system



Estonia

Estonia is located on the Baltic Sea (between the Gulf of Finland and the Gulf of Riga) and borders Latvia and Russia. It has a land area of 45,100 square kilometres. The population of slightly over 1.5 million is mainly of Estonian descent (62%) with the rest mainly Russian (30%). Recent political events have given Estonia back its independence and a democratic form of government. Industry accounts for more than one-half of the gross domestic product and employs one-third of the labour force; engineering and metal working are the two main industries. The manufacture of textiles, automotive parts and leather goods, agriculture, and fishing also contribute to the national economy.

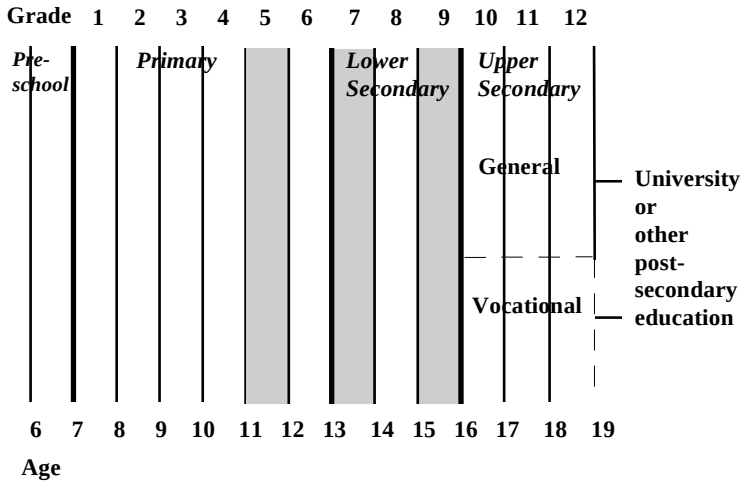
Estonia's educational system



The educational system is administered nationally although local and regional departments have some control over second language studies and the health education curriculum. Fundamental (compulsory) school consists of grade 1 to 9, age 7 to 16; elementary school is from grade 1 to 6 and intermediate school from grade 7 to 9. After grade 9, at age 16, students enter either a vocational school or an academic school. The former prepares them to enter the workforce and the latter for university.

Estonian students in grades 5, 7 and 9 were surveyed. It is very rare for students in Estonia to repeat a grade. Physical education is compulsory for each age group for two hours a week. Health education is compulsory at age 11 and 13; at age 15 it is optional. The duration of the program is determined at the school level and ranges from 18 to 38 hours per year for 11 year olds and 16 to 38 hours for 13 year olds.

Finland's educational system



Finland

Finland lies in the northern reaches of Europe bordering Norway, Sweden and Russia, and has approximately 5 million people in its 338,145 square kilometres. The vast majority are Finnish with a small Swedish population (6%); there are two official languages, Finnish and Swedish. Education is available in Swedish where there are sufficient numbers. Pulp and paper and woodworking make up a high percentage of the country's manufacturing output. Industries include heavy machinery, shipping, chemicals, textiles and glass/ceramics. However, the service industries account for over 60 percent of Finland's gross domestic product.

Municipalities and schools recently (August, 1994) assumed the main responsibility for

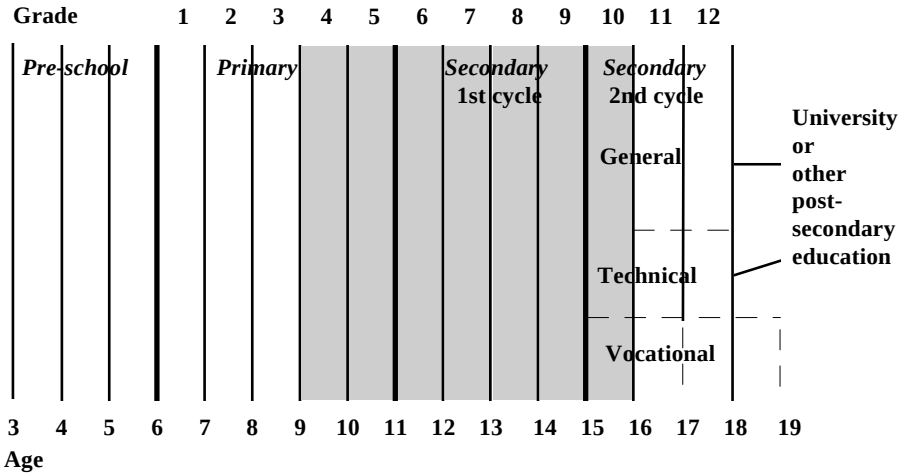
implementing curricula goals and objectives according to a national curriculum outline. Local authorities and schools have increasing latitude in matters relating to teaching arrangements and educational content. Compulsory schooling in Finland consists of basic general education given in a nine-year comprehensive school (age 7 to 16). The lower cycle of six years is taught by a classroom teacher; the upper cycle (lower secondary) of three years is taught by subject teachers. After this, at age 16, students can enter an upper secondary school for three years which offers general or vocational education. Approximately 60 percent select general education and 40 percent vocational. Upon completion of the general program, students sit a matriculation examination to qualify for university admission.

The surveys were administered to students in the fifth, seventh and ninth grades. The proportion of students who repeat a grade in Finland is extremely small. Physical education classes are compulsory for two to three hours per week throughout school in Finland. At age 11, health education is integrated into various other subject areas. At age 13 and 15, a minimum of 10 lesson periods of physical education each year is spent on health topics such as family life, human relations and human biology and traffic safety. This education is compulsory. Other health topics are taught within other subject areas.

France

France has a population of 57 million living in a country of 551,500 square kilometres. The French population is quite homogeneous with a small percentage of immigrants from North Africa and Portugal; the official language is French. The country has a tradition of highly centralized government services, but during the last few years has tried to decentralize administrative services to its 22 regions. A small part of the economy consists of agriculture, including wine. However, France is now a leading industrial nation and cars, aircraft, telecommunications equipment and heavy machinery are manufactured there.

France's educational system



Education is compulsory from age 6 to 16 years. Students in the five grades of primary school are 6 to 11; the four-year *collège* (or secondary 1st cycle) program includes those aged 11 to 15. At age 15, students choose to attend a *lycée*: general, technical or vocational. The *lycée*, a three-year program for those 15 to 18 years of age, leads to the *baccalauréat* which is taken by about 60 percent of students. The vocational option consists of a two- or four-year program. The four-year program leads to a *baccalauréat*.

In France, the school day is comparatively long: in primary schools, students attend classes for six hours a day (8:30 to 11:30; 1:30 to 4:30) and, in secondary schools (*collèges* and *lycées*), classes average eight hours a day.

The HBSC survey was conducted in the rectorates of Nancy and Toulouse. In each rectorate, the 11-year-old sample was taken mainly from two types of school: years 4 and 5 of primary school and year 1 of the *collège* (lower secondary school). The majority of the 13 year olds were in second or third year of the *collège*; the 15 year olds were a little more diverse with two-thirds drawn from the third and fourth years of the *collège* and the remainder spread over other years, that is, second year *collège* and first year *lycée* and other types of school (e.g., specialized pedagogical, technical schools). By the time the students are in the fourth year of secondary school about 50 percent have

repeated at least one grade. Schools offer physical education two to three hours per week. There is no compulsory health education, but health topics are included in biology classes.

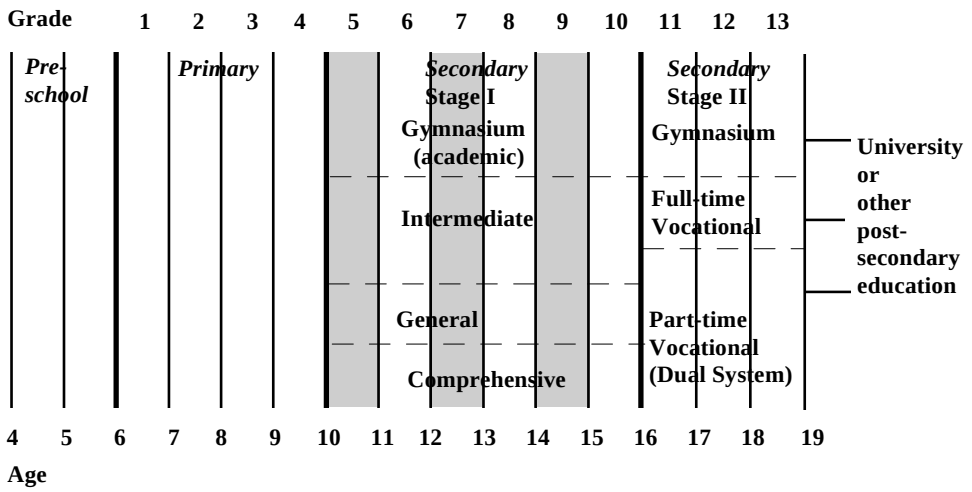
Germany

Germany has a population of approximately 81.2 million in a country that comprises 356,910 square kilometres. About 8 percent of the population are immigrant workers, mainly of Turkish origin. The HBSC survey was conducted in the region of Nordrhein-Westfalen in the northwestern part of Germany and has a population slightly over 17 million. The economy is heavily dependent on imported natural resources, mainly oil and natural gas as well as all sorts of precious metals. The manufacturing segment accounts for 37 percent of the gross domestic product and produces large quantities of steel, automobiles and machinery. The chemical industry produces drugs, fertilizers and plastics. A substantial share of Germany's economy is based on service industries.

The German education system is regionally administered due to the federal structure of the German state. Education is compulsory from age 6 to 16. Students attend primary school for four years until age 10, when they are differentiated by program and school. Secondary education is divided into Stage I (6 years) and Stage II (2-3 years). The options upon entering Stage I are a gymnasium (academic), secondary general, intermediate school or a comprehensive school. Many students from the secondary general and intermediate schools continue into an apprenticeship at age 15 or 16. Secondary education, Stage II, provides both vocational and general education.

The sample in Germany was drawn from the fifth, seventh and ninth years of school all of which fall within secondary school stage I. The proportion of students who repeat a grade varies with the type of school. For students in the fifth year between 0.08 and 2.8 percent repeat a year; for those in year 7, the range is 4.5 to 6.5 percent and in the ninth year between 4.3 and 7.1 percent. Physical health instruction is compulsory at the three age levels. Health education is also compulsory, but is integrated into different subject areas.

Germany's educational system



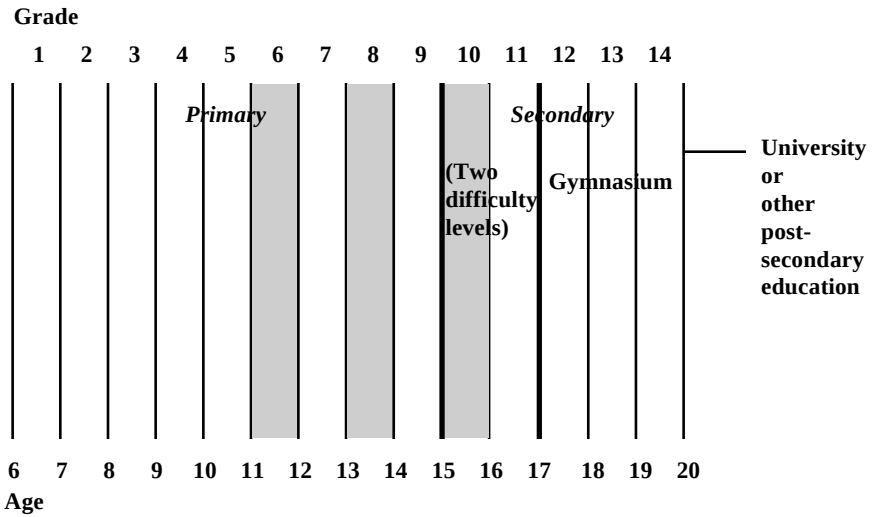
Greenland

Greenland is a land of 2,175,600 square kilometres with a population of 57,000. About 18 percent of the population is European, mainly Danish, and the rest are known as Greenlandic, many being a mixture of native peoples and Scandinavians who settled in Greenland hundreds of years ago. The majority of the people speak Greenlandic, but Danish is also used and taught in school. The country is an autonomous part of Denmark, governed by home rule. The major part of Greenland's economy is dependent upon the fishing industry. There is some farming of sheep and reindeer. Greenland is the only source of a mineral called cryolite which is used in making aluminium. Tourism is increasing.

The educational system is administered nationally. Young people aged 6 to 15 are required to attend school. Primary school consists of nine grades, after which successful students attend a secondary school for two years. There are no compulsory examinations upon entry into secondary school. Evaluation is made by teachers and parents. Secondary schools offer programs at two levels of difficulty. Upon completion of the two-year secondary program, students may enter a three-year program in a gymnasium. There is also a two-year program designed mainly for older students who wish to prepare to take examinations which would enable them to attend university. Students who qualify may attend a university in Denmark.

An effort was made to survey all students in grades 6, 8 and 10. The proportion of students who repeat a grade is very small. Physical education is compulsory for 11 and 13 year olds and optional for 15 year olds; health education is compulsory for all three age groups.

Greenland's educational system



Hungary

Hungary is a landlocked country of 93,032 square kilometres on the eastern edge of Europe with a population of over 10 million. The population is relatively homogeneous—Magyar—with small ethnic minorities of Germans, Slovaks, Croats and Romanians. The official language is Hungarian, but many of the people also speak German and Russian. Recent political changes have taken place in Hungary and the emphasis is now on a market economy. Hungary must import much of its raw material to produce its iron and steel, buses, and railroad equipment. One-third of the labour force is employed in mining and manufacturing, about 15 percent in agriculture and just under half in the service industries.

Children must attend school between age 6 and 16. Education is divided into eight years of general primary education and four years of secondary with academic and technical schools. The first level, (elementary or basic school) is divided into four lower years with classroom teachers, and four upper years with subject teachers. At age 14, students continue to a grammar school (academic), technical or other specialized secondary school (e.g., arts) or they continue in a trades training school. While the gymnasia are predominantly academically oriented, the technical schools give practical training and each school is allied with an industry or agricultural concern. Students from the gymnasia and technical schools sit a matriculation examination to qualify for university entrance. Outstanding students in the special schools may apply for higher education.

For the HBSC sample, students in grades 6 and 8 of primary school and year 2 (Grade 10) of secondary school were surveyed. By year 2 of

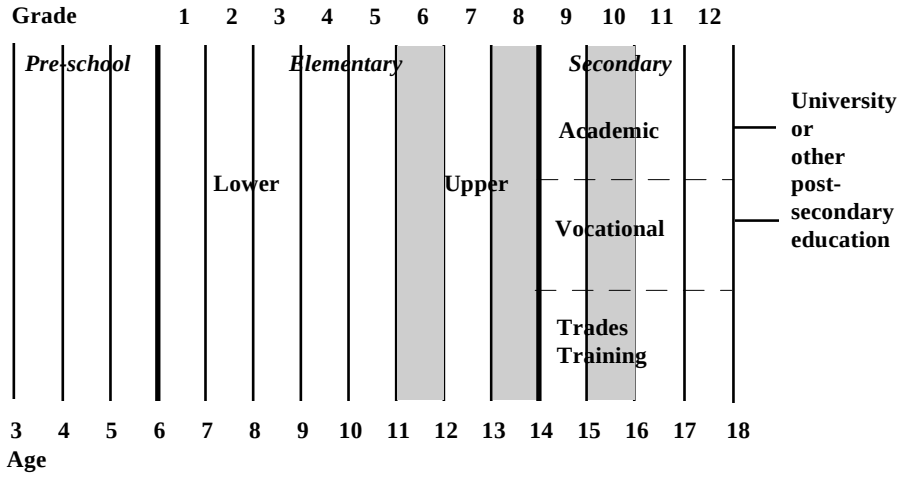
secondary school, a substantial number of students have repeated a year or more. Schools offer physical education, which is compulsory, at least three times a week; many schools have daily lessons. Health education is more sporadically taught by classroom and subject teachers, sometimes with the participation of nurses and doctors. Changes to the national curriculum in 1995 involved the inclusion of significant amounts of health-related knowledge. The curriculum also defines the aims of health education.

Israel

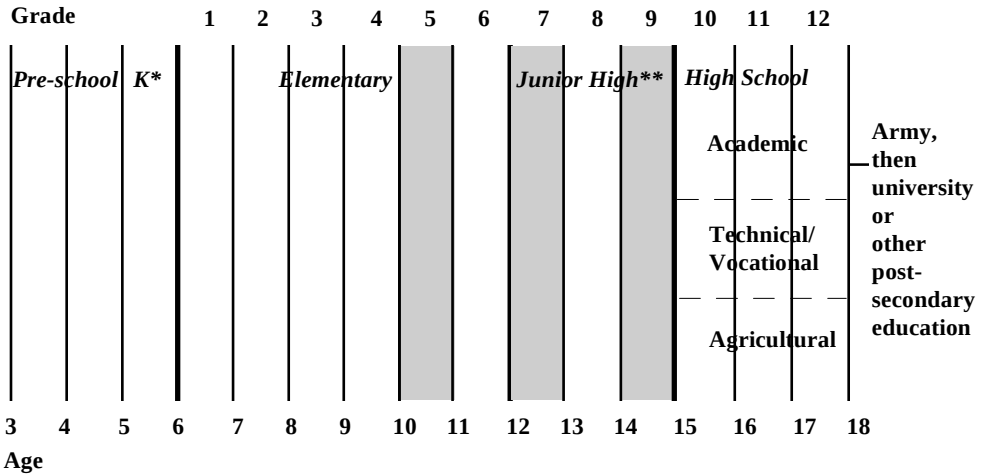
The population of Israel (20,700 square kilometres) is about 5.1 million, the majority of which live in cities. Hebrew and Arabic are the official languages, and many Israelis also speak English. Three-quarters of their national food needs are met by domestic agricultural production. Other industries produce chemical products, cut diamonds, electronic equipment, fertilizer, military equipment, processed foods, textiles and clothing, many of which are exported. High-tech products are also a major export.

Education is compulsory for young people age 5 to 16. The Ministry of Education, Culture and Sport is responsible for the educational system and supervises most schools; under this supervision municipal councils and public bodies run the secondary schools. There is a 1.3 ratio of religious to secular schools in the country. Students follow a school program of either six years elementary school, three years junior high school and three years high school or eight years elementary and four years high school. After high school, two years of army service is mandatory for girls and three years for boys. Attending university during this time

Hungary's educational system



Israel's educational system



* Kindergarten is compulsory.
** Some schools have eight elementary and four high school years.

is not permitted. After army service, students attend university, vocational or community college. Students from grade 6 to 11 were surveyed in Israel. The appropriate age groups were included in the international file. There is no information regarding the percentage of students who repeat a year. Physical education is compulsory from 8 to 18 years of age and is taught for 2 to 3 hours per week. Health education is optional for all age groups.

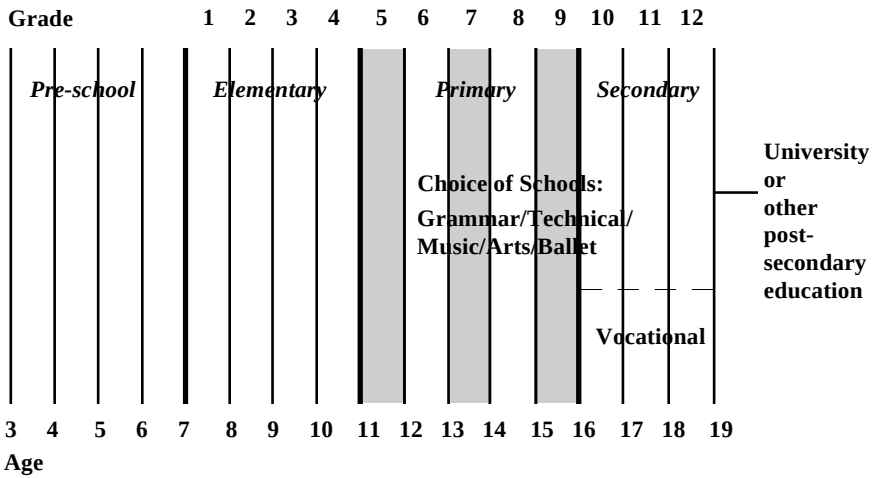
Latvia

One of three small countries on the Baltic Sea, Latvia has a population of 2.7 million people and an area of 64,100 square kilometres. Fifty-two percent of the inhabitants are Latvian (Letts), 34 percent Russian and 14 percent other nationalities. Latvia, declared an independent and democratic state in 1919, was occupied in 1940 by the USSR and, in 1991, regained its independence. Manufacturing industries contribute about 60 percent of the gross domestic product. The main industries produce electric railroad cars, household appliances and electronic equipment. There is also some steel, cement, processed food and textile production. Agriculture and a large fishing fleet make significant contributions to the economy as well.

In Latvia, the educational system is administered nationally through ministry of education guidelines implemented by each school. School attendance is compulsory from 6 (or 7) to 15 (or 16) years of age, or to the completion of the ninth grade. All elementary students (grades 1–4) study a common curriculum. At the primary (grades 5–9) and secondary (grades 10–12) school levels, students may choose specialized study in a grammar school or in a technical, music, arts or ballet school. At the end of grade 9, at age 15 or 16, students may continue in one of the above types of school, enter a vocational school or enter the workforce. Post-secondary education requires secondary school graduation and there is a university entrance examination.

Surveys were administered in grade 5, 7 and 9. Physical education is compulsory for all schools in Latvia, three times a week (total 3 hours), for all targeted age groups. Health education is optional.

Latvia's educational system

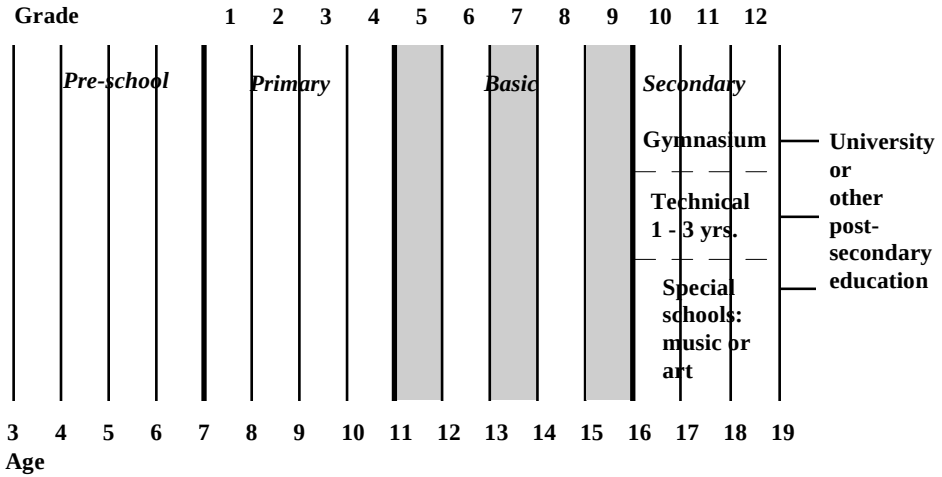


Lithuania

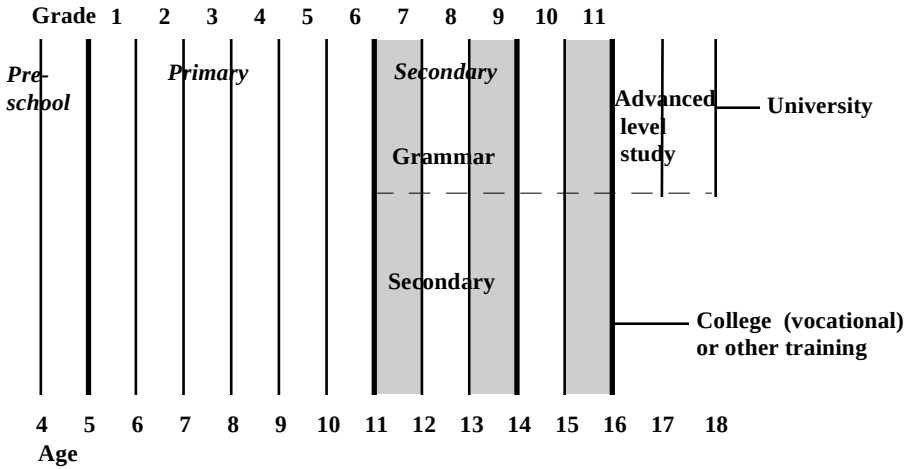
Lithuania is a Baltic country with a population of 3.7 million and an area of 65,200 square kilometres. More than 80 percent of the population are Lithuanian and there is a small Russian (9%) and Polish (7%) population. The official language is Lithuanian. Although the country was frequently occupied during the 18th and 20th centuries, historically it belongs to central Europe. In 1991, independence was restored in Lithuania. Its most important industries are chemicals, machinery, electronics and oil refining. The agricultural industry accounts for about one-quarter of the economic output of the country.

Children between the age of 7 and 15 must attend school. The first level, or primary school, taught by a classroom teacher is divided into four years. The second level, or basic school, is divided into five years, with subject teachers. At age 15 or 16, students graduate to secondary school when they may choose to attend a gymnasium (3 years), technical school (1–3 years) or other special secondary school. Technical schools give specialized training for a profession. Special secondary schools concentrate on music or art.

Lithuania's educational system



Northern Ireland's educational system



Students from the secondary schools or gymnasium must pass examinations for the school-leaving certificate (matriculation examinations). In order to qualify for university or other post-secondary schools (colleges, institutes, academies), secondary school students must write an entrance examination.

Students in grade 5, 7 and 9 were surveyed. The proportion of Lithuanian students who repeat a grade ranges between 1 and 2 percent for each year with the higher figure applying to students 11, 12 and 13 years of age. Schools offer physical education, which is compulsory, at least twice a week. Health education is taught sporadically, sometimes by classroom teachers, and sometimes by biology teachers. Nurses and physicians often participate in health education.

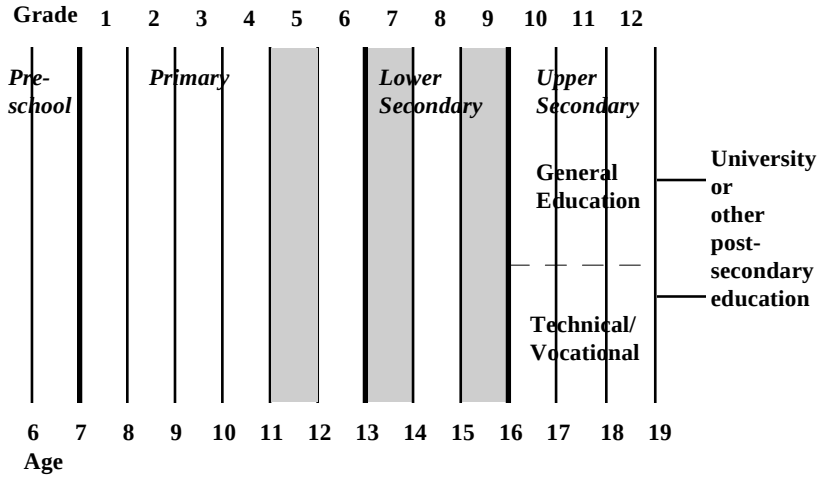
Northern Ireland

Northern Ireland covers an area of 14,000 square kilometres situated northeast of the Republic of Ireland. It has a population of about 1.6 million people, mainly of Scottish and English ancestry. The country is part of the United Kingdom along with England, Scotland and Wales and is administered through Westminster Parliament. The official language is English, but 10 percent also speak some Irish. The majority of the work force in Northern Ireland is in the service industries (education, government, health). About one-fifth is employed in manufacturing. The major industries are textiles (clothing), shipbuilding and aircraft. There are also agriculture, forestry and fishing interests.

School is compulsory for all children between 4 and 16. Students are grouped heterogeneously for the primary level (7 years) and at age 11 enter either grammar or secondary school based on

an examination. Although grammar schools are reserved for children who pass the compulsory examination, the curriculum is the same for both types of school. At the end of the third year, when they are 14, pupils choose the subject areas in which they will sit public examinations two years later. Generally, all grammar school and three-quarters of secondary students take examinations in at least five subjects after the fifth year. Young people who pass at least three of the five examinations can remain at school for two more years to study for advanced-level exams for entry into university. About half of the students who remain in school after the leaving age choose to go to further education colleges to study vocational subjects or undertake training which may lead to nationally recognized vocational qualifications. For the HBSC survey, students in grades 7, 9 and 11 were sampled. Physical education as well as health education is compulsory for all school children throughout their school career, but the number of hours per week is not specified.

Norway's educational system



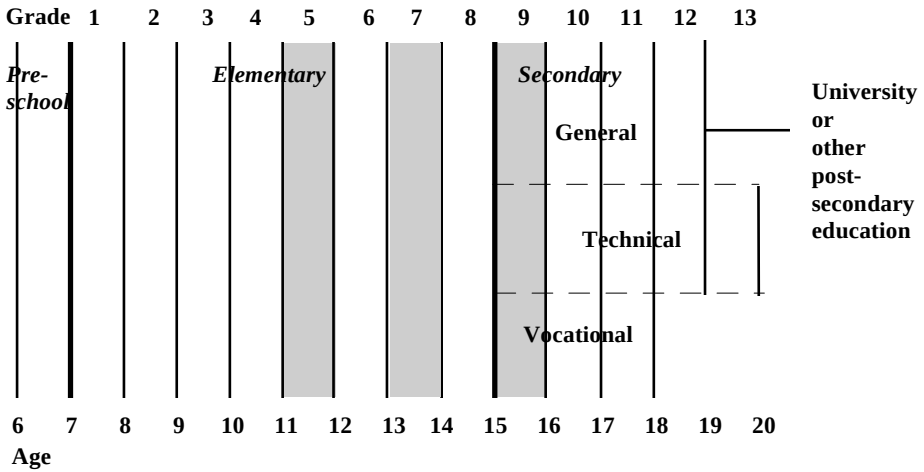
Norway

Norway is situated on the western part of the Scandinavian peninsula bordering the North Sea. The country's 323,882 square kilometres stretch over a latitude of 13 degrees (from 58 to 71 degrees north). The Gulf Stream along the coast makes the climate milder than that of other countries at the same latitude. Norway has 4.2 million inhabitants and half of them live in towns and villages and the other half in rural areas. The country is thinly and unevenly populated; most people live in the eastern part and along the coast line. Norway has been a sovereign and democratic constitutional monarchy since 1814. It is a culturally homogenous country except for the Sami and Finnish-speaking communities in the north. The official language, Norwegian, has two different written dialects and relates strongly to Danish and Swedish. The sea, the forests and the waterfalls are the basis for the Norwegian industry and economy. Fish was Norway's first big export product after which the export of timber became the major basis of the economy. The numerous waterfalls have been harnessed to give cheap electricity and this has attracted power intensive industries such as aluminium and ferroalloys. In the 1960s, Norway found gas and oil resources in the Norwegian continental shelf and these are today the mainstay of the Norwegian economy.

The educational system is administered both nationally and regionally. School is compulsory from age 7 to 16 and includes grade 1 to 9, divided into primary (1–6) and lower secondary (7–9) school. The students in elementary classes are kept together. For grade 7–9, these class units remain the same except for elective courses. Upper secondary school education is optional,

but everyone between 16 and 19 has the right to attend. Upon entry to upper secondary education, at age 16, students may select one of 13 foundation courses (vocational training) which lead to an apprenticeship or a more advanced-level program in the two main types of secondary schools (general education and vocational/technical education). Since 1994, both types give a general competence examination for admission to college or university. Students in grade 5, 7 and 9 were surveyed for this study. In Norway, students very rarely repeat grades. Schools offer compulsory physical education classes two (age 11 and 13) or three (age 15) times per week in all grades. Health education is not taught separately, but an effort is made to integrate it into other subjects.

Poland's educational system



Poland

Poland, a republic situated on the Baltic Sea, has an area of 312,677 square kilometres and a population of over 38 million. The population is homogeneous and almost all speak the official language, Polish. There has been some political strife in the past few years, but since 1991 Poland has had a fully democratic political system. Over one-quarter of the labour force is employed in manufacturing/mining; a similar percentage is involved in agriculture. Industries include textile, iron and steel, chemical, and petrochemicals, machine tools and machinery, electronic equipment and shipbuilding.

In Poland, education is administered nationally through the Ministry of National Education. Attendance at school is compulsory from age 7 to 17. Elementary school includes grade 1 to 8. If students are unable to complete their basic education by the time they are 15, they must remain in school until age 17. At 15, students choose secondary education which is offered in general (4-year), technical (5-year) or vocational (3-year) schools. Technical education may be pursued after students graduate from basic vocational secondary schools. The four years of general secondary education prepare a student for university and other post-secondary education. However, post-secondary institutions require the students to write an entrance examination to qualify.

Students in grade 5 and 7 of elementary school and year 1 (grade 9) of secondary school were surveyed. Physical education is compulsory and taught at age 11, 13 and 15 for two hours per week. There is no national health education curriculum so instruction is optional or unavailable. Sometimes it is taught by classroom teachers, sometimes by biology teachers, with nurses and physicians participating.

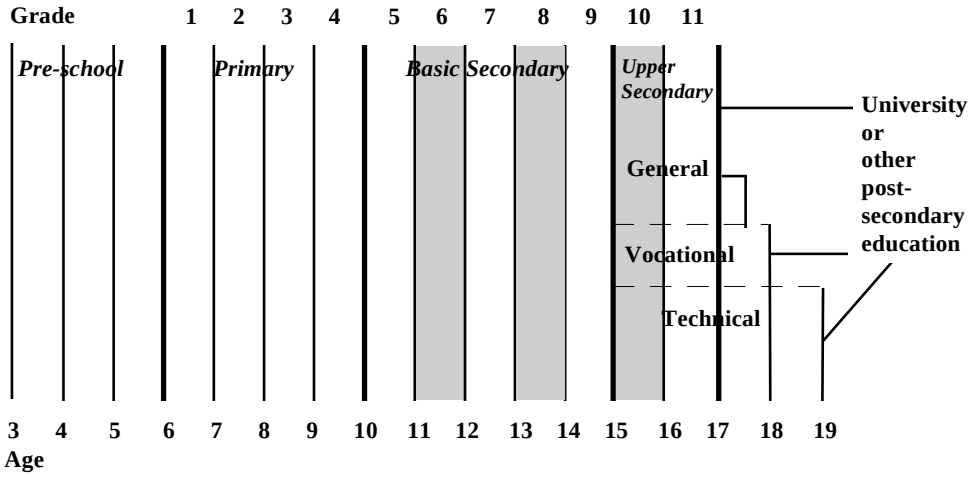
Russia

Russia is almost 17.1 million square kilometres in area. It has a population of approximately 150 million. Russians predominate, but there are over 100 different nationalities represented in the country. The sample for this survey was taken from St. Petersburg and its region of 6.7 million people. Changes in Russia in recent years have made many areas of life difficult. Although Russia has abundant natural resources – petroleum, natural gas, coal, iron ore – the climate makes it difficult to extract them. The majority of the workforce is employed in state-owned enterprises. Major exports are iron ore and copper, but its forestry industry (one-fifth of the world's forests are in Russia) is in decline. In its manufacturing industries, the emphasis is on machine building and metalwork. In St. Petersburg, shipbuilding and the manufacture of industrial equipment are major industries.

Although educational policies and programs are centralized through the Federal Program of Education Development, the education standards of the different regions reflect their individual socioeconomic, ecological and demographic characteristics. Education is compulsory from age 6 to 17. There are three levels of compulsory education: primary (grade 1 to 4), basic secondary (grade 5 to 9) and upper secondary (grade 10 and 11). From grade 5 (age 10) on, students must pass annual examinations to continue to the next grade. From grade 8 to 11, "special" subjects are available to high achievers, but most students take a common program. A certificate is granted on passing national examinations at the end of secondary school. Students sit entrance examinations to enter university or other institutions of higher learning. In St. Petersburg, slightly over half of the secondary schools offer common education while about one-third specialize in various courses of study.

In the region of St. Petersburg, grade 6, 8 and 10 students were surveyed. Physical education is compulsory with 68 hours per year required for the targeted age groups. Health education is optional for all ages.

Russia's educational system

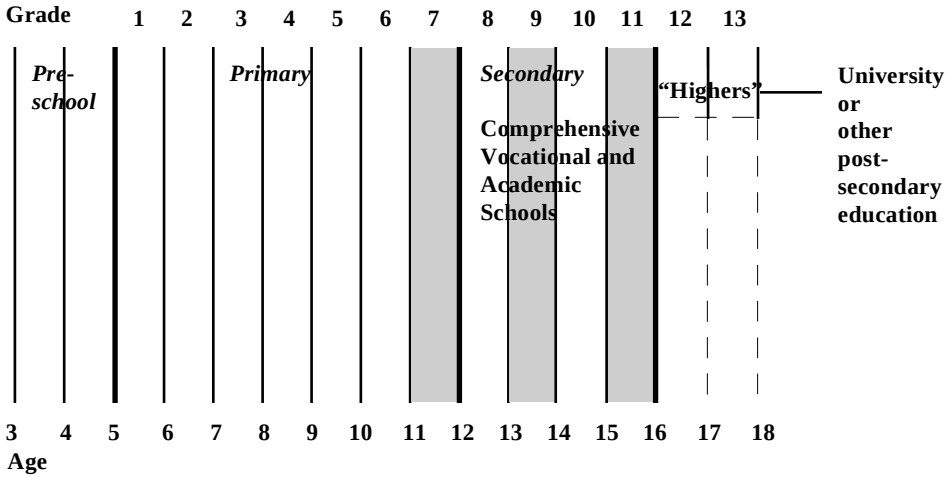


Scotland

Scotland forms the northern part of the island of Great Britain. It is made up of numerous small islands as well as the mainland and covers approximately 80,000 square kilometres. Scotland has a population of just over 5 million and English is the main spoken language, although 80,000 Scots also speak Gaelic which, legally, is the national language. Geographically, the country is situated quite far north, but the climate is tempered by the warm air of the Gulf Stream. Economically Scotland is struggling to replace heavy industries with high-tech engineering projects and finance and service industries. Tourism is very much a growth industry and Edinburgh is growing in importance as an international financial centre. The country's main exports are oil, natural gas and manufactured goods such as woollens, textiles, whisky and machinery.

Education is financed by the central government with additional funds from local taxes. Scotland has its own distinctive education system and approximately 95 percent of pupils attend state-funded schools (of which about 10 percent are Catholic); the remaining 5 percent attend grant-aided and independent schools. The elected Regional and Island Councils are responsible for the provision of school education within their geographical area. Children attend primary school from age 5 to 12 years and comprehensive

Scotland's educational system



secondary schools (that is academic and vocational) from age 12 to 16. Over 50 percent of young people remain at school beyond age 16. For those wishing to continue their education, examinations are set in the last two years of schooling (Highers and Sixth Year Studies). Those who pass with good grades may enter any university in the United Kingdom.

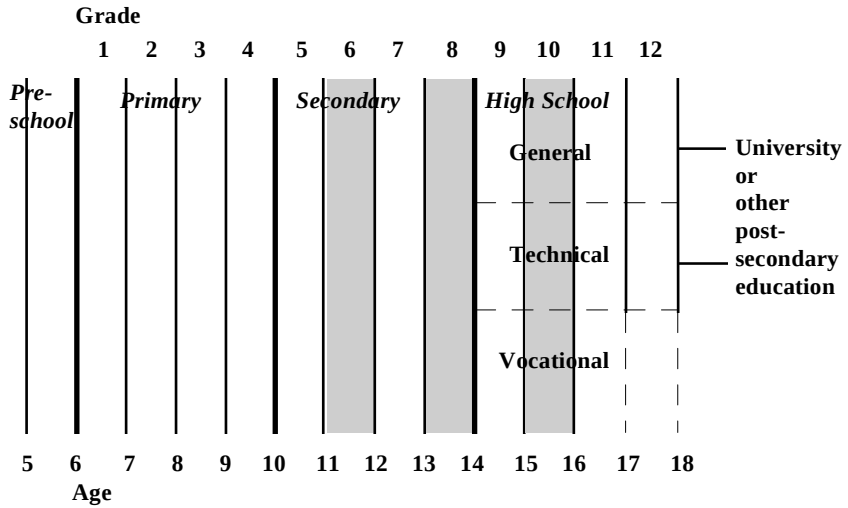
Scottish students in primary 7, and secondary 2 and 4 (grade 9 and 11) were surveyed for the HBSC survey. It is very rare for a child in Scotland to repeat a grade. Physical education is compulsory up to age 16 and taught for a minimum of one hour per week. Health education is taught at all ages, but is mostly a cross-curricular subject.

Slovakia

Until 1993, the eastern part of Czechoslovakia, Slovakia comprises 49,035 square kilometres and has a population of almost 5.4 million. The Slovakian economy is based on industry, which employs about 40 percent of the work force, agriculture and the service industries. The manufacturing industry produces metals, engineering equipment, refined petroleum and petrochemicals. Copper, iron, lead, manganese and zinc are the major mineral resources. In agriculture, several grains, potatoes and flax are grown and some are exported.

Slovakia's educational system includes state, private and church schools and is administered nationally. School attendance is compulsory from 6 to 16. There are three divisions: primary school – grade 1–4, secondary – grade 5–8 and high school (vocational, technical or general) – grade 9–10/11/12. At the end of grade 8, students sit entrance examinations for high school which

Slovakia's educational system



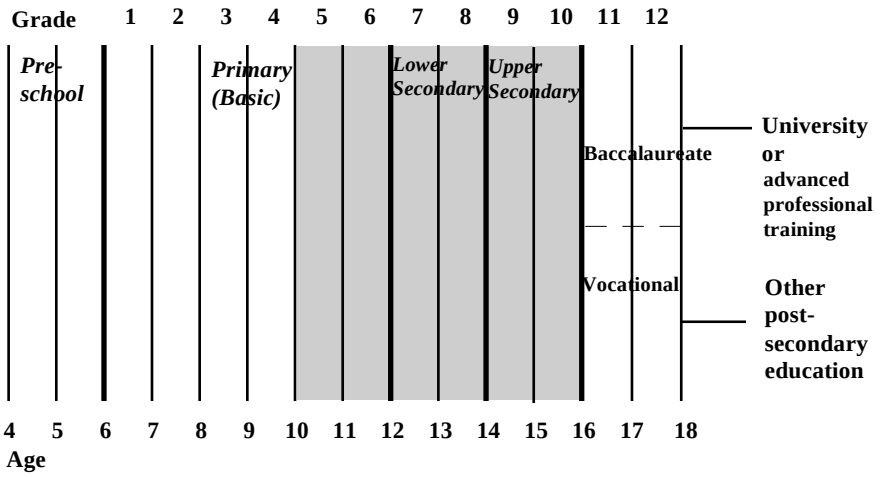
determine whether they attend a gymnasium (humanities oriented) or a specialized school (chemistry, building, electricity, nursing, arts, etc.) for four-year programs or a vocational school which offers two-, three- and four-year programs. Upon completion of courses at a gymnasium, students may opt for higher education. At the end of the programs in the specialized school, students sit a "maturity" exam, which also qualifies them for post-secondary education.

Students in the sixth, eighth and tenth years of school were surveyed for this study. In Slovakia, approximately 2 percent of 11 year olds repeat a grade, over 3 percent of 13 year olds and almost 2 percent of 15 year olds. Physical education is compulsory for these three age groups and students receive about 120 hours of instruction per year. Health education is mostly optional.

Spain

Spain is part of the Iberian peninsula and borders Portugal, France, the Mediterranean Sea and the Atlantic Ocean. The population of over 40 million speak mainly Spanish, which is the official language, although there are three regions which have co-official languages: Basque (Basque), Catalonia (Catalan) and Galicia (Galician). The country has 505,992 square kilometres divided into 17 autonomous communities, each with its own parliament and government. The tourist trade and agriculture are important to the economy, as are mining, fishing and manufacturing of products such as steel, textiles and cement. The main exports are steel, petroleum products, oranges, olives, wine and cork.

Spain's educational system



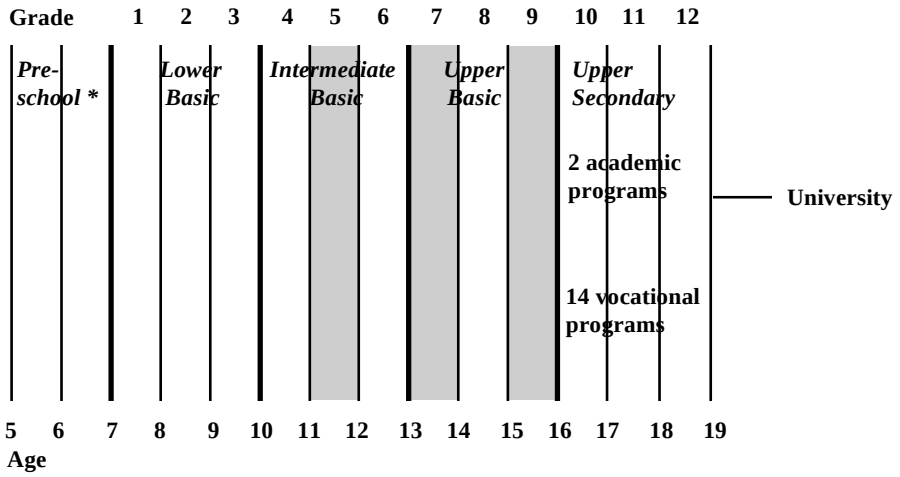
The central government defines the basis for the school system, which in some areas is governed by the regional government, but not yet in all the regions. An old and new school system operate at present: the new one, considered to be more progressive, has been implemented over the past few years. Education is compulsory from age 6 to 16 which covers primary and lower secondary school. Pupils attend primary school for six years, then two two-year stages of secondary school. At age 16, some students proceed to a two-year vocational program and others to a two-year baccalaureate program which leads to advanced professional training or to examinations for university entrance. Although most of Spain's 11, 13 and 15 year olds are in grade 6, 8 and 10, the survey was conducted for each age group in two consecutive grades, that is, 5 and 6, 7 and 8, and 9 and 10. In Spain, almost 10 percent of 11 year olds, almost 19 percent of 13 year olds and close to 32 percent of 15 year olds have repeated at least one grade.

Physical education is compulsory at all levels of mandatory education, and students receive at least 105 hours in the third stage of primary education and 70 hours in both the first and second stage of secondary education. Health education is considered an interdisciplinary subject at all levels of mandatory education.

Sweden

Sweden shares the northern part of the Scandinavian peninsula with Norway and Finland. It is the largest of these countries geographically (449,964 square kilometres). Over 90 percent of its 8.6 million people live in the southern half of the country. The population is extremely homogeneous with respect to language, religion and culture. There is a small group of Finns (265,000) and a smaller group of Sami. Sweden is a highly industrialized country with about one million people employed in manufacturing products such as steel, aluminium, cars, machinery, electric and electronic equipment and chemicals. There are also significant industries producing lumber, paper, glassware and furniture. Agricultural products such as cheese and lingonberries are major exports.

Sweden's educational system



* Six year olds attend a common pre-school year.

Throughout Sweden the education curricula are nationally administered and the municipalities are responsible for organizing and implementing school activities. Education is compulsory between the ages of 7 and 16 and consists of three levels of three years each: lower, grade 1 to 3; intermediate, grade 4 to 6; and upper, grade 7 to 9. Up to grade 6, students are taught by classroom teachers and, in the senior level, by subject teachers. There are no examinations; marks are awarded as a basis for entrance into upper secondary school which students attend after grade 9. These schools offer either general academic or vocational programs of two or three years, which will soon be a standard three years. When students enter these schools at age 16, they choose from two academic programs which lead to university or from 14 vocational programs.

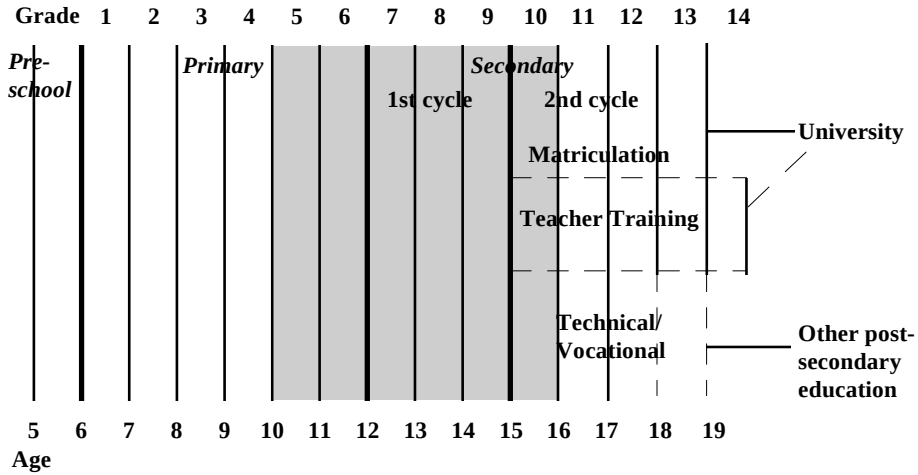
Questionnaires were administered to students in grade 5, 7 and 9 in Sweden. There are virtually no repeaters in the Swedish school system. Physical and health education is compulsory for each age group in the study. Students receive 390 hours of instruction in a subject called Play, Sports and Health between age 7 and 16.

Switzerland

Switzerland has a population of 6.7 million and occupies 41,293 square kilometres in central Europe, bordering Italy, France, Germany, Austria and Liechtenstein. Its population is spread across 26 cantons and the majority of the people live in urban areas. Official languages are German, French, Italian and Romansch. Switzerland is known for its neutrality and the confidentiality of its banking system. The Swiss economy has grown rapidly and foreign workers have been recruited to fill jobs; they now account for about one-fifth of the labour force. There is a higher percentage of foreign-born residents in Switzerland than in any other European country. The economy is based on manufacturing, trade, tourism and banking. Major exports are food, chemicals, machinery, pharmaceutical products, textiles and watches.

There is no central ministry of education in Switzerland as each canton is responsible for its own educational system. In recent years, there has been some effort to have more consistency in the structure of the systems. School is compulsory from age 6 to 15 or the completion of nine grades. More and more areas have adopted a six-year elementary (primary) system followed by a three-year first cycle secondary school and a two-, three-, four- or five-year second cycle. Upon entering the second cycle at age 15, university-bound students attend one of three types of secondary school – Greek and Latin, modern languages, or maths and sciences. They may also enter a normal school (teacher training for pre-primary, primary, secondary-first cycle) for five years, or a trade or technical secondary school for two to four years. Apprenticeship training may be part of these programs.

Switzerland's Education System



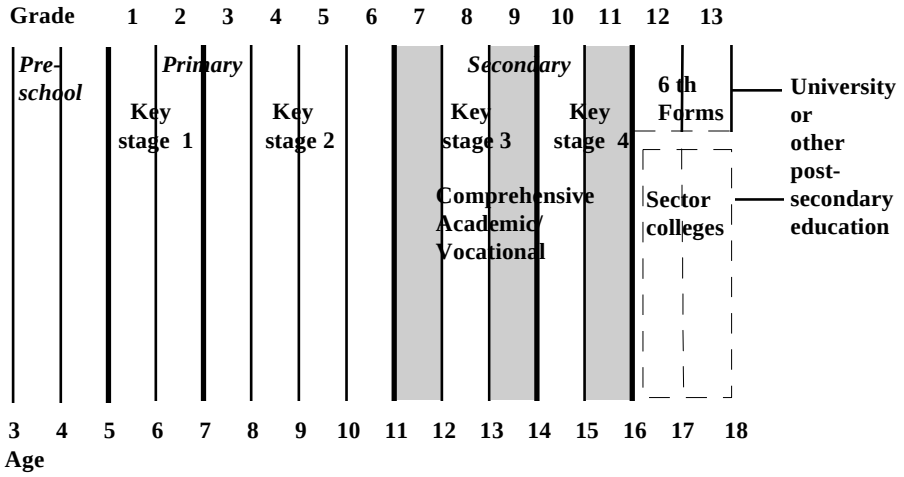
Switzerland selected a sample of students from grade 5 to 10 and then constructed a subsample to meet the criteria of the targeted age groups. It is difficult to estimate the proportion of students who are held back, but grade 6 and 8 were included in part to catch 13 and 15 year old students who had repeated a grade. The Swiss survey was divided into three parts and two student samples were selected. All students answered Part A while one group answered Part B and the other Part C. Physical education is compulsory for each surveyed age group and is given for three 45-minute periods a week. Health education is optional for these ages, but is occasionally covered within other curricular areas.

Wales

Wales is part of the United Kingdom, bordering the Irish Sea on the west and England on the east. Its population of approximately three million lives in an area of 20,768 square kilometres. English is the official language, used by the vast majority; about a fifth of the population also speaks Welsh. In recent years, there has been a strong nationalist trend toward maintaining the Welsh language and school instruction is offered in Welsh in all areas. Agriculture and manufacturing are important to the economy of Wales; meat, wool and dairy products are widely produced, and plastics, chemicals, electrical equipment, synthetic fibres, automobile parts and airplane engines are manufactured.

Education is financed by the Welsh Home Office in combination with local education authorities. There is a national curriculum of 11 subjects and detailed guidelines of content and expected achievement are issued to all schools. Children must attend school from age 5 to 16, but many schools provide nursery and reception classes for those under 5. Tests on national curriculum core subjects (English, maths, science and Welsh) are undertaken at age 7, 11 and 14. Children attend primary school to age 11 and then enter a comprehensive secondary school that offers both academic and vocational programs. University-bound students remain in secondary school until age 18 or 19 or study for A level exams in tertiary or further education colleges. Teacher training colleges and other post-secondary education are also available.

Wales' educational system



In Wales, students from grade 7, 9 and 11 were selected to complete the survey. The proportion of students who repeat a grade is negligible. Health education is optional, except for those topics which are included in national curriculum subjects and sex education, which has been compulsory since September, 1994.

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Organisation for Economic Co-operation and Developent. (1995). *Education at a glance*. Paris: OECD.

Postlethwaite, T.N. (1995). *International encyclopedia of national systems of education*, 2nd ed. Oxford: Pergamon.

Appendix B: Sample Design and Sampling Error

An important consideration when interpreting the results presented throughout this report is the extent to which the survey estimates accurately represent the true population values. This appendix will outline the sources of error which can impact on the accuracy of survey estimates. Details of the sample design employed in the HBSC Study are provided and the implications for measurement of standard errors of the survey estimates are discussed. Design factors are introduced and presented for a selection of variables across eight countries participating in the survey. Finally, a methodology for estimating standard errors for other survey variables is presented.

Sources of error in HBSC survey results

The total error associated with a survey estimate can be seen as the difference between that estimate and the true population value for the characteristic of interest. The component parts of the total error are systematic error (often referred to as bias) and random error, of which sampling error is important (Butcher & Elliot, 1987).

While every effort is made to avoid bias when designing the study, it is unlikely that the data will be completely free of such error. For example, bias may be present in HBSC data owing to question wording effects, methods of sample selection or survey non-response. All of these vary between countries in the survey and the resulting problem of cross-national comparability was noted in Chapter 1. Bias cannot be quantified without additional information external to the HBSC survey relating to true population values.

An important element of random error is sampling error, that which arises from the fact that a survey is based on a sample of respondents, rather than a census of the total population. The degree of random error can be estimated from the survey data estimate. The standard error provides a measure of an estimate's reliability or precision and takes account of sampling error and other possible sources of random error, such as random response error (e.g., errors in interpretation of questions) or coding errors.

Sample design and calculation of standard errors

HBSC survey data are obtained from national samples that are not simple random samples of the population of school-aged children. Were this the case, the sample would be selected by choosing individuals at random from a sample frame which listed all school-aged children in each country. Under such a design, the standard error of a proportion can be calculated using the sample proportion of interest (e.g., 15 year olds smoking weekly in Wales) and the sample size (e.g., total number of 15 year olds sampled in Wales responding to the question) and inserting these figures into the following equation:

$$se(p) = \sqrt{\frac{pq}{n}}, \text{ where } q = 1-p \qquad \text{(Eqn 1)}$$

Using the above example, there are 1257 15 year olds in the Welsh sample (n=1257) of whom 23% report that they smoke weekly (p=0.23). Therefore:

$$se(p) = \sqrt{\frac{(0.23 \times 0.77)}{1257}}, = 0.0119 = 1.19\%$$

The 95% confidence interval of the survey estimate is given by:

P +/- 1.96 x se(p)

which in the current example gives confidence intervals of 23% +/- 2.3% (or 20.7% to 25.3%). In simple terms, these results indicate that there is a 95% chance that the true population value lies somewhere between the calculated intervals. It should be noted however, that in a statistical sense, the confidence intervals indicate that if a number of identical surveys were undertaken on different samples from the same population, the confidence intervals would contain the true population value 95% of the time (Gardner & Altman, 1989).

In common with the majority of population surveys, complex survey designs are employed to collect data in each country participating in the HBSC survey. All countries employ a clustered sample design in which the school or class is the primary sampling unit rather than the individual pupil. Given such a design, the pupils' responses cannot be assumed to be independent, as pupils within the same class or school are more likely to be similar to each other than to pupils generally. Cluster sampling therefore results in standard errors that tend to be higher than would be the case if the same size of sample was obtained using a simple random sample. Consequently, standard errors must be calculated using an appropriate method that takes account of the correlation of children within schools or classes.

A number of countries also stratify their sample, classifying the sample frame into smaller units, often geographical areas, to ensure coverage of all regions in the country. This stratification is likely to reduce standard errors and should be taken into account when they are being calculated.

There are a number of methods available to calculate standard errors that take account of complex survey designs (see for example Lehtonen & Pahkinen, 1995; Lee et al., 1989). The Taylor series expansion is the most straightforward computationally and is employed in many computer programs to approximate standard errors from complex surveys (e.g., SUDAAN, PC CARP). The proportion of interest is expressed as a ratio (r) of the number in the sample with a given attribute (y) and the total number in the sample (x). For example, if r is the proportion of 15 year olds in Wales smoking weekly, then y is the number of children smoking weekly and x is the total number of Welsh 15 year olds in the sample responding to the question. The standard error of r is now estimated as:

(Eqn 2)

$$se(r) = \sqrt{\frac{1}{x^2}\left[var(y) + r^2\, var(x) - 2r\,cov(yx)\right]}$$

where:
r = estimated proportion = y/x
y = characteristic of interest
(e.g., number of 15 year olds smoking weekly)
x = population of interest
(e.g., number of 15 year olds)

and

$$var(y) = \sum_{h=1}^{H} n_h \frac{(y_{hi} - \bar{y}_h)^2}{n_h - 1}$$

$$\bar{y}_h = \frac{1}{n_h} \sum_{i=1}^{n_h} y_{hi}$$

where:
H = number of strata (e.g. regions)
n_h = number of schools/classes in stratum h
y_h = characteristic of interest in school/class i in stratum h

and similarly for variance of x and covariance (x,y). (See for example Kalton, 1983; Butcher & Elliott, 1987.)

This method gives a reasonable estimate of the standard error provided that there is not too much variation in the number of children in the schools or classes selected for the sample, depending on which is the primary sampling unit. The extent to which variation exists can be measured using the coefficient of variation (se(x)/x) or put simply the standard error of, for example, class size in a country expressed as a proportion of the sample size for that country. If the coefficient of variation of x exceeds 0.1 (or less ideally 0.2) the Taylor expansion method is not reliable and an alternative should be used. Coefficients of variation for those countries examined in the HBSC survey were below 0.1 in all cases.

Design factors and the estimation of standard errors for other survey estimates

While it is possible to calculate standard errors for all proportions of interest in all age groups across the 24 countries participating in the 1993/94 survey, there are practical problems in doing so. In particular, there is the issue of how best to present in report form standard errors using a design factor model. The design factor (deft) is the ratio between the standard error derived from a complex survey and that obtained assuming a simple random sample,

i.e.,

$$\text{deft} = \frac{\text{se(p)}_{\text{complex}}}{\text{se(p)}_{\text{srs}}} \qquad \text{(Eqn 3)}$$

The design factor is the square root of the design effect (deff), the ratio of the variances (Kish, 1965). Returning to the example of the 23% of Welsh 15 year olds smoking weekly, the complex standard error obtained for this estimate using Equation 2 is 1.57%, resulting in 95% confidence intervals around the estimate of 19.9% to 26.1% (compared with 20.7% to 25.3% under the assumption of simple random sampling). The value of deft for this estimate is therefore 1.57/1.19, or 1.32.

Values of deft for selected variables have been calculated for eight countries (Austria, Belgium [Fr.], Canada, Estonia, Finland, Norway, Scotland and Wales) and are presented separately in Tables 1–3 for 11,13 and 15 year olds, given that most survey estimates in this report are provided by age group. In order to calculate true standard errors, it was necessary to have unique identifiers of stratifying variables and primary sampling units (i.e., schools or classes). Values of deft are not presented for smoking weekly and being drunk on four or more occasions for 11 year olds given the extremely small prevalences for these variables (less than 1% in many countries). True standard errors have been calculated using the SUDAAN software package (Shah et al., 1995).

Inspection of Tables 1–3 reveals that there is great variation in design factors between the selected variables for each country and age group. However, basic patterns do emerge from the findings and these are summarized below.

1. Design factors tend to be higher for those variables focusing on the school as a setting. For example, values of deft for pupils' perceptions of whether teachers treat them fairly are often large, reaching a maximum of 1.76, particularly for 11 year olds. This is to be expected as pupils within schools or classes are likely to hold similar views on those aspects of the school measured.

2. Relatively high design factors are found for other variables for certain countries and/or age groups. For example, values of deft exceeding 1.50 are found for daily consumption of hamburgers or hot dogs among 11 and 15 year olds in Belgium. Such a finding may be explained by some schools regularly serving hamburgers or hot dogs for lunch, or schools being located near a shop selling hamburgers or hot dogs. Children at these schools are likely to have higher consumption levels than those at other schools, resulting in substantial clustering.

3. Lower values of deft are recorded for certain variables, notably ease of making friends, feeling confident and academic achievement. These findings suggest that pupils within the same school or class are no more likely to hold similar views or behave in a similar manner to their colleagues than they would with other pupils selected on a purely random basis. While there is still some variation by age and country, simple standard errors for such variables based on an assumption of simple random sampling are less likely to be significant underestimates of the true standard error.

Using the values of deft that have been calculated for a selection of variables, the true standard error of a variable accounting for the complex survey design can be estimated by rearranging Equation 3 such that

$$\text{se(p)}_{\text{complex}} = \text{se(p)}_{\text{srs}} \times \text{deft}$$

It is sometimes suggested that taking an average of deft values for a number of variables can be a useful strategy for producing usable values of deft for estimating standard errors for other variables. However, if particularly high values were recorded for one of these variables this might be used to provide a more conservative estimate. For example, if it is assumed that the feeling of belonging at school and students enjoying being together can be seen as related variables, the values of deft for 15 year olds in Wales are 1.60 and 1.40, respectively, giving an average value of 1.50. However, the more conservative approach would be to apply the former value of 1.60 when estimating standard errors and using these to build confidence intervals.

Table 4 provides an illustration of the use of the design factor approach to estimating true standard errors for other survey variables using available data. For each country, the proportion of 15 year olds saying they agree or strongly agree that school is a nice place to be is presented along with the relevant sample size, estimate of standard error assuming a simple random sample and 95% confidence intervals. Using the deft values for each country given in Table 3 for belonging at school, estimates of the true 95% confidence intervals are given allowing the influence of sampling design on the precision of the estimates to be assessed.

Table 1 Design factors for selected proportions: 11 year olds								
	Austria	Belgium Fr.	Canada	Estonia	Finland	Norway	Scotland	Wales
Academic achievement*	1.16	1.10	1.11	1.31	1.53	1.18	1.32	1.36
Like school	1.45	1.50	1.35	1.64	1.30	1.37	1.54	1.17
Exercise four or more times/week	1.16	1.05	1.09	1.10	1.26	1.15	1.41	1.15
Eat hamburgers or hot-dogs daily	1.23	1.66	1.22	1.21	0.98	1.15	1.47	1.26
Very or quite healthy	1.10	1.02	1.28	1.33	1.33	1.11	1.19	1.01
I belong at this school**	1.10	1.12	1.44	1.45	1.40	1.42	1.57	1.60
Teachers treat us fairly**	1.23	1.71	1.45	1.44	1.60	1.45	1.76	1.40
Students always enjoy being together	1.11	1.29	1.33	1.54	1.45	1.41	1.42	1.40
Bullied one or more times	1.13	1.25	1.21	1.31	1.09	1.18	1.56	1.01
One or more evenings with friends weekly	1.32	1.67	1.30	n/a	1.22	1.18	1.28	1.11
Find it easy to make friends	1.28	1.17	1.01	0.92	1.22	0.98	1.14	1.14
Feel confident	1.32	1.24	1.21	1.10	1.27	1.11	1.24	1.24

* **Those who indicated their teachers think their work at school is good or very good.**
** **Those who agreed or strongly agreed.**
n/a Question not asked.

Table 2 Design factors for selected proportions: 13 year olds								
	Austria	Belgium Fr.	Canada	Estonia	Finland	Norway	Scotland	Wales
Academic achievement*	1.14	1.34	1.41	1.06	1.09	1.01	1.15	1.46
Like school	1.14	1.18	1.69	1.53	1.28	1.15	1.19	1.23
Smoke weekly	1.19	1.25	1.39	1.17	1.15	1.18	1.35	1.29
Drunk four or more times	1.19	1.24	1.35	1.11	1.09	1.09	1.17	1.52
Exercise four or more times/week	1.12	1.13	1.20	1.05	1.16	0.93	1.23	1.19
Eat hamburgers or hot-dogs daily	1.15	1.45	1.16	1.33	1.00	1.00	1.25	1.32
Very or quite healthy	1.05	1.00	1.14	1.14	1.24	1.03	1.08	1.14
I belong at this school**	1.23	1.04	1.64	1.48	1.45	1.17	1.28	1.24
Teachers treat us fairly²**	1.16	1.15	1.28	1.48	1.48	1.45	1.22	1.37
Students always enjoy being together	1.34	1.45	1.39	1.36	1.44	1.41	1.15	1.16
Bullied one or more times	1.15	1.05	1.35	1.17	1.20	1.29	1.29	1.30
One or more evenings with friends weekly	1.19	1.37	1.65	n/a	1.07	1.30	1.05	1.29
Find it easy to make friends	0.91	1.26	1.00	1.05	1.02	1.06	1.04	0.94
Feel confident	1.05	1.20	1.34	1.18	1.01	1.07	1.11	1.08

* **Those who indicated their teachers think their work at school is good or very good.**
** **Those who agreed or strongly agreed.**
n/a Question not asked.

Table 3 Design factors for selected proportions: 15 year olds								
	Austria	Belgium Fr.	Canada	Estonia	Finland	Norway	Scotland	Wales
Academic achievement*	1.05	1.11	1.34	0.99	1.14	1.00	1.49	1.43
Like school	1.39	1.22	1.06	1.34	1.29	1.37	1.16	1.20
Smoke weekly	1.45	1.31	1.47	1.26	1.43	1.41	1.32	1.33
Drunk four or more times	1.51	1.17	1.56	1.36	1.57	1.26	1.26	1.46
Exercise four or more times/week	1.17	1.28	1.40	1.20	1.05	1.00	1.10	1.31
Eat hamburgers or hot-dogs daily	1.22	1.56	1.23	1.10	0.94	1.10	1.13	1.19
Very or quite healthy	1.17	0.98	1.24	1.34	1.22	0.95	1.05	0.97
I belong at this school**	1.16	1.22	1.37	1.65	1.33	1.30	1.20	1.17
Teachers treat us fairly**	1.33	1.53	1.26	1.44	1.22	1.35	1.23	1.21
Students always enjoy being together	1.17	1.39	1.19	1.09	1.23	1.56	1.01	0.83
Bullied one or more times	1.25	1.23	1.14	1.43	1.15	1.17	1.17	0.98
One or more evenings with friends weekly	1.27	1.14	1.17	n/a	1.13	1.07	1.23	1.24
Find it easy to make friends	1.07	1.13	1.30	1.05	0.95	1.28	0.94	0.97
Feel confident	1.10	1.21	1.13	0.99	1.05	1.14	1.26	1.12

* **Those who indicated their teachers think their work at school is good or very good.**
** **Those who agreed or strongly agreed.**
n/a Question not asked.

Table 4 Estimation of true confidence intervals for proportions of 15 year olds agreeing that "Our school is a nice place to be" using values of deft for "I feel I belong at this school"

Country	Prevalence	Sample size	Standard error (SRS)	SRS 95% confidence interval	Design factor	True 95% confidence interval
Austria	45.5	1799	1.17	43.2 to 47.8	1.16	42.8 to 48.2
Belgium Fr.	47.5	1629	1.24	45.1 to 49.9	1.22	44.5 to 50.5
Canada	59.6	2210	1.04	57.6 to 61.6	1.37	56.8 to 62.4
Estonia	51.9	1153	1.47	49.0 to 54.8	1.65	47.1 to 56.7
Finland	38.5	1183	1.41	35.7 to 41.3	1.33	34.8 to 42.2
Norway	58.8	1623	1.22	56.1 to 60.9	1.30	55.7 to 61.9
Scotland	31.3	1369	1.25	28.9 to 33.8	1.20	28.4 to 34.2
Wales	31.8	1260	1.31	29.2 to 34.4	1.17	28.8 to 34.8

Multiple regression analyses

Multiple regression analyses were used to estimate the influence of certain factors on smoking, happiness and health. The results of the analyses are presented in Chapter 9 for each of the countries in the survey with two exceptions: the data file for Switzerland was not in an appropriate format and the small number of cases for Greenland made the analyses invalid for that country.

In each analysis, forward stepwise selection was used with listwise deletion of missing values (only students that had valid responses for all variables named in the equation were included). The standardized beta weights are presented in the figures if they fall into either of two ranges; moderately strong beta weights – from 0.06 to 0.145 and strong beta weights – 0.15 or above. For each regression analysis conducted, a Multiple R has been produced as an indicator of the predictive power of the variables in the equation. The figure includes only predictor variables that are in the equation for six or more countries, for either male or female students, because of space constraints. As a result some items are excluded from the figures because they are important only for a few countries. However, the predictive power of these items is reflected in the multiple correlations that are included in the figures. It should be noted that the regression analyses conducted are quite exploratory and are to serve as examples of how well the outcome variables can be predicted by the predictors employed. The analyses would be more informative if focused at the individual country level. Because of the characteristics of the variables other analytical techniques such as logistic regression would be appropriate in the next stage of the research.

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Appendix C: Principal Investigators for the Countries Participating in the HBSC Survey

Austria
Dr Wolfgang Dür
Ludwig Boltzmann Institute for the Sociology of Health and Medicine
c/o Institute of Sociology
Neues Institutsgebaude of University of Vienna
Universitatsstrasse 7/2
A-1010 Vienna AUSTRIA
TEL: +43 1 402 93 60 27/35/22
FAX: +43 1 597 1871/402 9363

Belgium (Flemish)
Ms Lea Maes, Associate Professor
Department of Public Health, University of Ghent
Academisch Ziekenhuis - Block A
De Pintelaan 185
B-9000 Ghent BELGIUM
TEL: +32 9 240 3628
FAX: +32 9 240 4994
e-mail: lea.maes@rug.ac.be

Belgium (French)
Dr Danielle Piette, Associate Professor
Université Libre de Bruxelles
Ecole de Santé Publique
Route de Lennik 808, CP 596
B-1070 Brussels BELGIUM
TEL: +32 2 555 4081
FAX: +32 2 555 4049
e-mail: dpiette@is1.ulb.ac.be

Canada
Dr Alan J.C. King, Director
Social Program Evaluation Group
Duncan McArthur Hall
Queen's University
Kingston, ON K7L 3N6 CANADA
TEL: +1 613 545 6255
FAX: +1 613 545 2556
e-mail: kinga@qucdn.queensu.ca

Czech Republic
Dr Zdenek Kucera, President
Czech Health Promotion Foundation
Sokolska 54
121 39 Prague 2 CZECH REPUBLIC
TEL: +42 2 29 14 04
FAX: +42 2 29 14 04
e-mail: NCPZ@earn.cvut.cz

Denmark
Dr Bjørn E. Holstein
Department of Social Medicine
University of Copenhagen
Blegdamsvej 3
DK-2200 Copenhagen DENMARK
TEL: +45 35 22 79 66
FAX: +45 31 35 11 81
e-mail: holstein@socmed.ku.dk

Estonia
Dr Mai Maser
Department of Pediatrics, Tartu University
Kalda tee 44-9
EE-2400 Tartu ESTONIA
TEL: +372 34 77 222
FAX: +372 7 441 239

Finland
Dr Lasse Kannas, Associate Professor
Department of Health Sciences
University of Jyvaskyla
Seminaarinkatu 15
SF-40100 Jyvaskyla 10 FINLAND
TEL: +358 41 602 154
FAX: +358 41 602 141
e-mail: kannas@pallo.jyu.fi

France
Dr Christiane Dressen, Chef de service
Comité français d'éducation pour la santé
Service études et strategie
2 Rue Auguste-Comte
F-92170 Vanves FRANCE
TEL: +33 1 46 45 45 00
FAX: +33 1 46 44 06 64

Germany
Dr Andreas Klocke
Universitat Bielefeld, Research Centre
Prevention & Intervention in Childhood
& Adolescence
PF 100131 D-33501 Bielefeld GERMANY
TEL: +49 521 106 3890/3834
FAX: +49 521 106 2987
e-mail: andreas.klocke@post.uni.bielefeld.de

Greenland
Dr Michael Pedersen, HBSC Greenland
WHO Collaborative Study Project
Faergevej 66
DK-3600 Frederikssund DENMARK
TEL: +45 47 38 7207
FAX: +45 47 38 7208

Hungary
Dr Anna Aszmann
National Institute of Child Health
Tuzolto Street 7-9
H-1094 Budapest HUNGARY
TEL: +361 15 03 40
FAX: +361 215 66 90

Israel
Dr Yossi Harel, Head
Graduate Program in Medical Sociology
Bar Ilan University
Ramat Gan 52900 ISRAEL
TEL: +972 3 531 8967
FAX: +972 3 635 0995
e-mail: harelyo@ashur.cc.biu.ac.il

Latvia
Dr Ieva Ranka, Department of Pediatrics II
Medical Academy of Latvia
16 Dzirciema Str.
LV-1007 Riga LATVIA
TEL: +371 45 76 05
FAX: +371 7 82 81 55
e-mail: iranka@lanet.lv

Lithuania
Dr Apolinaras Zaborskis
Kaunas Medical Academy
Laboratory for Social Pediatrics
Eivieniu str. 4
LT-3007 Kaunas LITHUANIA
TEL: +370 77 94 752
FAX: +370 77 96 498
e-mail: a.zaborskis@kma.lt or socped@kma.lt

Northern Ireland
Ms Linda Barclay
Director of Programme Development
The Health Promotion Agency for
Northern Ireland
18 Ormeau Avenue
Belfast BT2 8HS NORTHERN IRELAND
TEL: +44 1232 31 1611
FAX: +44 1232 31 1711

Norway
Dr Bente Wold
Research Centre for Health Promotion
University of Bergen
Oisteinsgate 3
N-5007 Bergen NORWAY
TEL: +47 55 21 2808/3223
FAX: +47 55 90 16 99
e-mail: bente.wold@psych.uib.no

Poland
Dr Barbara Woynarowska
National Research Institute of Mother & Child
UL Kasprzaka 17a
01 211 Warsaw POLAND
TEL: +48 22 632 15 49
FAX: +48 22 632 94 54
e-mail: Krzysztof.burzynski@fuw.edu.pl

Russian Federation
Dr Aleksander Komkov
Research Institute of Physical Culture
Dinamo 2
197042 St. Petersburg RUSSIAN FEDERATION
TEL: +7 812 235 01 31
FAX: +7 812 235 01 31

Scotland
Dr Candace Currie
Research Unit in Health and
Behavioural Change
Department of Public Health Sciences
The University of Edinburgh Medical School
Teviot Place
Edinburgh, EH8 9AG SCOTLAND
TEL: +44 131 650 6192/3
FAX: +44 131 650 6902
e-mail:cec@srv2.med.ed.ac.uk

Slovakia
Mr Miro Bronis
Institute of Health Education
Sasinkova 13
816 37 Bratislava SLOVAKIA
TEL: +42 7 376 142
FAX: +42 7 378 98 64

Spain
Dr Ramón Mendoza, Associate Professor
Department of Psychology
Faculty of Arts & Sciences of Education
University of Huelva
Campus del Carmen
21007 Huelva SPAIN
TEL: +34 59 27 10 00 ext 2453
FAX: +34 59 27 04 11
e-mail: ramon@colon.uhu.es

Sweden
Dr Ulla Marklund
National Institute of Public Health
Box 27848
S-11593 Stockholm SWEDEN
TEL: +46 8 783 35 19
FAX: +46 8 783 35 45

Switzerland
Dr Yann Le Gauffey
Swiss Institute for Prevention of Alcohol & Drug Problems
Av. Ruchonnet 14
CH-1001 Lausanne SWITZERLAND
TEL: +41 21 320 29 21
FAX: +41 21 323 19 30
e-mail: lpillevuit@mail.vtx.ch

Wales
Mr Chris Tudor-Smith
Director of Research & Development
Health Promotion Wales
Ffynnon-Las, Ty Glas Avenue
Llanishen
Cardiff CF4 5DZ UNITED KINGDOM
TEL: +44 1222 75 22 22
FAX: +44 1222 75 60 00
e-mail: chriss@hpwales.demon.co.uk

World Health Organization
Dr Erio Ziglio
Regional Adviser for Health Promotion and Investment
WHO Regional Office for Europe
8 Scherfigsvej
DK-2100 Copenhagen DENMARK
TEL: +45 39 17 12 35
FAX: +45 39 17 18 18
e-mail: ezi@who.dk

Appendix D: HBSC Publications

Research Publications

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