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ABSTRACT

This report presents the preliminary findings from WHO's (World Health Organization) fourth Health Behaviour in School-Aged Children (HBSC) Study. The study has two main objectives: (1) to monitor health-risk behavior in youth over time in order to provide the necessary background and clear targets for health promotion initiatives; and (2) to provide information to researchers that will enable them to understand and explain the development of health attitudes and behaviors through early adolescence. Approximately 1300 respondents in each of 3 age groups--11, 13, and 15 years--were targeted in 24 countries during the 1993-94 school year. The findings of the survey include: (1) in every country surveyed, the use of tobacco and alcohol increased with age; (2) in most countries, as young people progress from age 11 to 15, they exercise less frequently; (3) 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; (4) in only one country, Sweden, did the majority of 11, 13, and 15 year olds rate themselves as very healthy; (5) in nearly all countries, only a small minority of students regularly felt lonely, helpless, or left out, while the majority thought they made friends easily, had at least two close friends, and found it easy to talk to their mother; (6) nearly 30 percent of the respondents reported an injury requiring medical attention during the previous year; this reaffirmed other research findings that unintentional injuries may be the most serious health problem to face school children in western societies; and (7) schools with a hospitable environment and caring teachers appear to contribute positively to students' emotional well-being and social development. Several implications for policy are included. Appendixes include: characteristics of countries, sample design and sampling error, a list of the principal investigators, and a list of HBSC publications. Contains 123 references. (AA)

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THE Health OF Youth

A Cross-National Survey

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The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own program geared to the particular health problems of the countries it serves. The European Region embraces some 850 million people living in an area stretching from Greenland in the north and the Mediterranean in the south to the Pacific shores of the Russian Federation. The European program of WHO therefore concentrates both on the problems associated with industrial and post-industrial society and on those faced by the emerging democracies of central and eastern Europe and the former USSR. In its strategy for attaining the goal of health for all, the Regional Office is arranging its activities in three main areas: lifestyles conducive to health, a healthy environment, and appropriate services for prevention, treatment and care.

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WHO Regional Publications, European Series No. 69

THE Health OF Youth

A Cross-National Survey

Alan King

Bente Wold

Chris Tudor-Smith

Yossi Harel

A report of the 1993-94 survey results of Health Behaviour in School-Aged Children: A WHO Cross-National Study.

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Health Behaviour in School-Aged Children

a World Health Organization Cross-National Study

WORLD HEALTH ORGANIZATION EUROPE

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Foreword

The Regional Office for Europe of the World Health Organization is proud to support this cross-national survey of health-related behaviour of young people. This survey is the fourth in the Health Behaviour of School-Aged Children (HBSC) Study, since 1983–84. In the Study's plan to obtain comparable information about health-related behaviour among representative samples of schoolchildren in their countries, the WHO Regional Office recognized an opportunity to further the organization's goal of health for all. The project became a WHO collaborative study in 1982.

Finland, Norway, Scotland, Wales and Austria took part in the first survey of the HBSC Study. These countries have been joined by 19 others – including Canada – and the numbers continue to grow. England, Greece and the United States will participate in the next HBSC survey. The Regional Office is delighted that interest in this Study has spread to countries outside the WHO European Region. Indeed, comparative information on schoolchildren's knowledge, attitudes, behaviour and perceptions of the school setting are of key importance to health promotion programs and policies.

The unique database that has resulted from the surveys carried out to date represents both important background information for health promotion initiatives and a reliable method to monitor changes within and among countries. It enables analyses between countries that facilitate examination of variations in health risk behaviour, such as smoking. It illustrates the commonality of health problems in youth across countries and the similarity of antecedents. The data yielded by the Study comprise an unprecedented resource for policy makers on health-related issues.

In addition, the Study affords health researchers and health professionals a remarkable opportunity to share information and monitor patterns of behaviour in their countries and internationally. The collaboration of investigators in this Study has created an international network of researchers whose ultimate goal is to understand how best to improve the health of the children in each of their countries.

The Regional Office supports this important study in a number of ways, including the designation of WHO collaborating centres for areas such as the international coordination of the Study and its overall data management. In addition, the HBSC Study is linked to another major Regional Office initiative – the European Network of Health Promoting Schools (ENHPS). This is a pan-European project involving almost 40 countries. Its aim is to make the school setting a health promoting environment for the school population. The HBSC Study provides salient baseline data for the ENHPS and a strong alliance to support health promotion in schools.

WHO, along with Health Canada, provided support for the publication of this report of the international findings of the 1993–94 survey. This report represents only the beginning of the data analysis that will be conducted by researchers from participating countries. Further work will be done within and across countries to take advantage of the wealth of information now available.

Dr J.E. Asvall
WHO Regional Director for Europe

Acknowledgements

The Health Behaviour in School-Aged Children (HBSC) Study involves the collaboration of researchers from several countries, under the auspices of the Regional Office for Europe of the World Health Organization (WHO). Comprehensive surveys of 11, 13 and 15 year olds are carried out by the researchers every few years and are used to investigate health issues within and across participating countries. Tapani Piha ably represented the WHO Regional Office during the planning and administration of the 1993–94 survey. Erio Ziglio ensured WHO standards would be met in the preparation of this report.

The enthusiastic and committed efforts of 25 teams of researchers from 24 countries in the planning and administration of the surveys made this report possible. The following, listed by country, are those who contributed substantially to the preparation of this report. The principal investigator for each country is mentioned first; see Appendix C for addresses and affiliations.

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Emma Wistrand

Switzerland
Yann LeGauffey
Yves François
Denise Mader
Jurgen Rehm

Wales
Chris Tudor-Smith
Laurence Moore
Chris Roberts

The data collection in each country was funded at a national level. We are grateful for the financial support offered by the various government ministries, research foundations and other funding bodies in the participating countries.

For the 1993-94 HBSC survey, Chris Tudor-Smith, Health Promotion Wales, served as administrative coordinator and Bente Wold, Research Center for Health Promotion, University of Bergen, Norway, served as research coordinator. The present international coordinator is Candace Currie, University of Edinburgh, Scotland. Special thanks go to Dag Stenvoll at the Norwegian Social Sciences Data Services for standardizing the data files and preparing the data bank for the study.

The preparation of this report has been funded by Health Canada, under the coordination of Mary Johnston. We also gratefully acknowledge the contributions of Chris Roberts, Health Promotion Wales, who helped in the interpretation of the findings and drafted the technical appendix of the report.

The Social Program Evaluation Group, Queen's University, Kingston, Canada, was largely responsible for final preparation of this report. Mary Johnston, Health Canada, assisted by Annick Gauvin-Fleurant, gave advice and direction throughout the project. The research team was comprised of Matthew King who supervised all aspects of the data analysis for this international presentation of survey findings, Marjorie Peart who contributed substantially to the preliminary drafts of the report, Helen Connop who contributed to Chapter 9 and researched the literature and Beverley Coles who organized the distribution and collection of the survey instruments, did preliminary data analyses and assisted with proofreading. Special thanks go to the secretarial/clerical team of Heidi Elliott, Heather Kenney, Kelly Forrest and Carol Belanger. Hazel Fotheringham edited the manuscript and coordinated its final preparation. Liaison between the WHO Regional Office for Europe and production coordination were the responsibilities of Wendy Warren. Pamela Charlton, Mary Stewart Burgher and Gill Nissen of the Regional Office assisted with final editing and publication details.

Last, but not least, we are very grateful for the cooperation of all the students who were willing to share their experiences with us, and to their schools for making this survey possible.

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Introduction

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CHAPTER 1

Introduction

A. Background

The Health Behaviour in School-Aged Children (HBSC) Study is a collaborative cross-national research study sponsored by the World Health Organization (WHO). The goal of the HBSC Study is to increase understanding of the health-related attitudes and behaviours of young people and the context in which they develop. Ultimately, the researchers aim to improve the quality of health promotion programs and health education for youth.

Since 1982, HBSC researchers have planned and coordinated the collection of data from a growing number of countries. Four separate questionnaire surveys have been conducted to date and the next is planned for the 1997-98 school year. This report presents the basic findings and preliminary analyses from surveys administered by research teams in 24 countries in the 1993-94 school year.

The content of the surveys has evolved substantially over the first four periods of questionnaire development although a basic core of health behaviour items has remained. As more and more countries participated in the survey development process, greater attention was given to flexibility in content and standardization of administration procedures. The first survey offered participating countries little flexibility in selecting content to be included, but the next two surveys provided considerable opportunity for researchers from each country to select content areas they found relevant to add to the basic core of questions. This greater flexibility in questionnaire structure and content made it difficult to achieve comparability across countries and tended to restrict analysis on some important issues.

The survey reported on here included a large component of common items that each participating country was required to implement. The core items from the first questionnaire were included as well as the most useful items, in terms of relevance and design, from all three surveys. Items on injuries and attitude toward school were added.

The Study has two main objectives. The first is to monitor health-risk behaviour in youth over time in order to provide the necessary background and clear targets for health promotion initiatives. The second objective is to provide information to researchers that will enable them to understand and explain the development of health attitudes and behaviours through early adolescence. The research should provide the analytical framework necessary for the design of effective health promotion intervention and health education programs.

In this chapter, the questionnaire, sampling procedures and data collection are discussed. An explanation of the presentation and interpretation of findings in this report follows. Then, characteristics of the students surveyed are presented. Finally, the content of the chapters is briefly outlined.

B. The questionnaire

Questionnaire topics for HBSC surveys are discussed among the various research teams and finally selected at international project meetings. A research protocol guides both data collection procedures and the general progress of the Study (Wold et al., 1994).

The conceptual framework for the design of the survey comes from the social sciences and has two main components. First there is the developmental perspective. Three age groups (11, 13 and 15 year olds) were selected as targets for data collection to examine changes that occur in health behaviours and attitudes from the onset of puberty to the middle of adolescence. Second, the framework incorporates health outcomes and factors which may influence or shape the outcomes. Outcomes include behaviours such as smoking, alcohol abuse, and level of physical activity, psychosocial states such as happiness and loneliness and physical problems such as headaches and backaches. Determinants include attitudes related to school, parents and peers. Outcomes and determinants may interact and therefore be interchangeable in analyses. Chapter 9 provides examples of the utilization of the framework that has guided the design of survey items.

As explained, this survey includes a core of items that have been used in each of the four surveys and additional items on specific topics. All countries were expected to include these items on their survey in addition to their own special questions of national and regional interest. In other words, each national or regional survey consists of core items, common items related to specific topics and optional items. Other than the core questions, questions concerning school and injury were common to the 1993-94 international standard version of the survey.

School, because it is an important setting in which the physical and psychosocial development of youth occurs, plays a crucial role as a place to monitor current health behaviours and trends and as a base for implementing health promotion programs. Previous HBSC research has indicated a link between a number of psychosocial problems at school and health. For example, feelings of alienation at school are associated with health compromising behaviour (Nutbeam et al., 1989; Nutbeam & Aarø, 1991). Eder found that school children who are socially well integrated report better health than those who do not feel part of school life (1990a,1990b). This survey expands on these findings to clarify the relationship between the school environment and the health and happiness of students.

Since unintentional injury is the major cause of death and morbidity in youth as well as loss of school time, the researchers incorporated items related to type, place and cause of injuries. This type of information was generally not available in most participating countries and is fundamental to the design of injury prevention programs.

The core questions, other than demographic ones, concern behaviours, such as smoking and physical activity, that are understood to affect health, and various psychosocial aspects of health, such as depression and happiness.

C. Sampling and data collection

1. Participating countries

The 24 countries in which research teams administered questionnaires are Austria, Belgium, Canada, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greenland, Hungary, Israel, Latvia, Lithuania, Northern Ireland, Norway, Poland, the Russian Federation, Scotland, Slovakia, Spain, Sweden, Switzerland and Wales. In France, Germany and the Russian Federation, the survey was conducted only in regions (see Figure 1.1). In Belgium, the Flemish-speaking community and the French-speaking community were surveyed independently. In order to simplify the presentation, each of the 25 areas in which surveys were conducted is referred to in the following text as a country; the two Belgian communities are designated Belgium (Fl.) and Belgium (Fr.) and the Russian Federation is identified as Russia. Brief descriptions of the participating countries, the characteristics of their school systems and the grades in which the questionnaires were administered appear in Appendix A.

2. Sampling procedures

Approximately 1300 respondents in each of three age groups – 11, 13 and 15 years – were targeted in each country. School classes or schools at the appropriate grade levels were randomly selected in each country or region to be surveyed. Thus, a cluster sample design was used, in which the first level of sampling occurs at the school or school class level and then all students in the appropriate age group are surveyed. Table 1.1 shows that the minimum sample sizes were met by most participating countries. Since the population of Greenland is relatively small, the entire in-school population for each age group was surveyed, with the exception of those not present at the time of the survey. A detailed description of the sampling design is provided in Appendix B.

The guidelines for the survey state that 90 percent of the respondents in a country should fall within one-half a year of the mean age and the remaining 10 percent no more than one-half a year beyond this point. The grade levels corresponding to the desired age ranges are 6, 8 and 10 in most countries; however, where compulsory education begins at age 7, the grade levels are 5, 7 and 9. In a few countries, e.g., Wales, the grade levels are 7, 9 and 11. See Appendix A for further details about the targeted groups in each country.

Table 1.1 Sample size, by country

Country	11 year olds	13 year olds	15 year olds
Austria	1614	1788	1815
Belgium Fl.	1733	1424	1349
Belgium Fr.	1935	1585	1676
Canada	2289	2250	2219
Czech Rep.	1094	1290	1201
Denmark	1219	1379	1314
Estonia	1170	1167	1179
Finland	1714	1279	1194
France*	1461	1283	1260
Germany*	1104	1121	1050
Greenland	457	490	375
Hungary	2072	1944	1759
Israel	1301	1646	1352
Latvia	1307	1248	1263
Lithuania	1783	1886	1759
N. Ireland	1346	1355	1269
Norway	1614	1701	1637
Poland	1473	1514	1540
Russia*	1353	1294	1354
Scotland	2007	1579	1373
Slovakia	1088	1352	934
Spain	1507	1576	1487
Sweden	1225	1208	1151
Switzerland	2009	3438	3251
Wales	1272	1332	1266
Totals	**37 147**	**37 129**	**36 027**

* *France, Germany and Russia are represented only by regions.*

Figure I.1 Countries and regions in the survey

In three countries, the sample consists of students drawn only from regions:
France – Nancy and Toulouse
Germany – Nordrhein-Westfalen (N.W.)
Russia – St. Petersburg and district

3. Data collection and file preparation

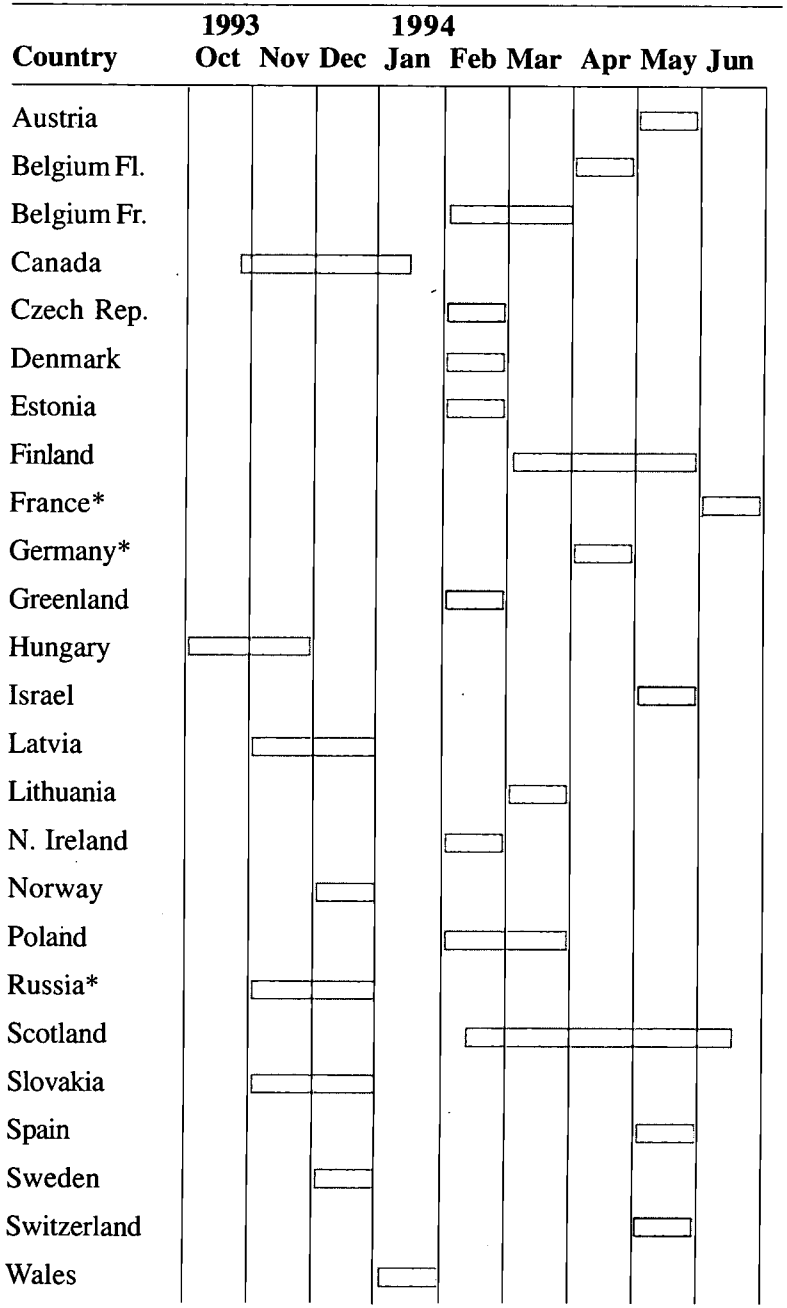
Every effort was taken to ensure that the research protocol (Wold et al., 1994) was followed. Researchers tried to use common definitions of most terms, to make the survey instruments similar, and to use standard data collection and processing procedures.

Questionnaires were administered in school classrooms between October 1993 and June 1994. Each research team worked out a procedure to ensure students' anonymity. Specially trained or instructed personnel (i.e., teachers, school nurses, guidance counsellors, school psychologists, or members of the survey team) were responsible for administering the survey to the respondents. They followed a set of instructions that conformed in principle to the guidelines in the protocol.

Figure 1.2 indicates when data were collected in each country. For the most part, dates of survey administration were selected to produce mean ages of the samples as close to 11.5, 13.5 and 15.5 as possible.

National files were exported to the HBSC International Data Bank in Bergen, Norway where they were checked and cleaned. Data from students outside the targeted age ranges were removed and each set of cleaned national files was checked for items and response keys that differed from the international standard. Items that were significantly different from the standard were excluded from the analyses presented in this report.

Figure 1.2 Survey administration: 1993-94 school year



* *France, Germany and Russia are represented only by regions.*

D. Presentation of findings

Most of the findings are presented in simple bar graphs according to country, age and gender. Typically the data from only one response alternative or a combination of response alternatives are presented; for example, the proportion of respondents who smoke at least weekly. Although an effort has been made to include the proportions of respondents who selected the remaining response alternatives in the interpretation of findings, those data are not included. However, if the reader requires more information, tables which include all the responses are available from the WHO Regional Office for Europe.

Coefficients of correlation for factors related to important outcome measures (happiness, health, alcohol use and smoking, for example) are presented using symbols to represent ranges: 0.15 to 0.19, 0.20 to 0.29, 0.30 to 0.39 and 0.40 +. These correlation figures combine data for all countries by gender for each age group.

Two different types of figures are employed in Chapter 9. Line graphs are used to indicate trends across all countries across the three age groupings. Symbols representing standardized beta weights from regression equations are used to illustrate general prediction patterns across countries. Specific details on these analyses are available from the authors.

Two scale scores are used in the analyses as summary measures of the broad concepts social integration and attitude toward school. The scales are simply devices used to reduce and simplify the amount of information presented. The items used for the scales were determined through factor analysis and face validity. Reliability analysis for individual countries and for all countries combined was then used to determine the final scale items.

The social integration scale consists of 10 items: Do you ever feel lonely?; Other students accept me as I am; Have you ever been bullied this school term?; How often has it happened this term that other students do not want to spend time with you at school and you end up being alone?; How easy is it for you to talk to friends of the same sex about things that really bother you?; How easy is it for you to talk to friends of the opposite sex about things that really bother you?; How many close friends do you have?; How often do you spend time with friends right after school?; Have you ever felt like you were being left out of things?; and, Is it easy or difficult for you to make new friends? For the social integration scale the Cronbach's alpha for all countries combined was 0.69. This indicator of scale reliability is only moderately high but still makes the scale useful for the basic analyses.

The scale score for attitude toward school was similarly constructed. It consists of 12 items: How do you feel about school at present?; The students are treated too severely/strictly in this school; The rules in this school are fair; Our school is a nice place to be; I feel I belong at this school; Our school is clean; My teachers encourage me to express my own views in class; My teachers treat me fairly; When I need extra help, I can get it; My teachers show an interest in me as a person; The students in my class(es) enjoy being together; and, Most of the students in my class(es) are kind and helpful. The Cronbach's alpha for the attitude toward school score for all countries combined was 0.81, an indicator of relatively high reliability for a scale of this type.

The responses to two items were combined to obtain a measure of parent communication. Students were asked how easy it was for them to talk to their mother and how easy it was to talk to their father about things that really bother them.

This report presents the basic findings of the survey and illustrations of the types of analysis that can be done. More sophisticated analyses specific to each country/region will be done by the principal investigators participating in the study.

E. Interpreting the findings

Various difficulties in achieving comparable data for 25 regions must be taken into account when making international comparisons and reaching conclusions about the populations sampled. For example, inevitable discrepancies in data collection result when more than one research team administers the survey instrument. In this survey, several design factors – cluster sampling, differences in school systems and cultural and language differences – must be taken into account in the data analysis. Nevertheless, it can be argued that such problems are unlikely to account fully for the large variations across countries, genders and age groups in health-related attitudes and behaviours that were revealed in these data.

The cluster sampling used in the survey means items are more or less correlated across respondents depending on the extent to which those that make up each cluster share a similar behaviour or point of view. For example, a class of students is more likely to share a similar view about their teacher or about school than to feel depressed or be lonely or smoke cigarettes. Therefore, greater importance can be attached to smaller differences in smoking behaviour than in attitude toward school.

The variety of school systems included in the survey made it impossible to achieve both homogeneity in the ages of the sampled children and to collect data at the same time of the year in all countries (see Figure 1.2). The priority was given to matching ages. Although the school class was generally the sampling cluster, where class lists were not available schools were used. Also, in some countries the age distribution in classes was so heterogeneous (e.g., in school systems with policies of failing students) that the sampling procedure targeted the specified age groups in a school rather than particular classes.

Since the date of administration of surveys varied from October 1993 to June 1994, children were responding to items in different seasons and at different points in their school year. Differences in seasons and weather conditions would likely affect responses to certain items, about physical activity levels or diet, for example. Slight differences in age characteristics of samples can influence when they take up a behaviour such as smoking or alcohol use.

It is not possible to ensure that all concepts covered by the questionnaire items are interpreted identically from country to country. Terms to describe behaviours like smoking and brushing teeth are easily translated and understood similarly everywhere, but it has been difficult or impossible to find appropriate words and phrases in some languages to represent terms used in the standard version of the questionnaire to describe psychosocial concepts such as loneliness or depression. Indeed some items – those about dietary habits are a good example – had to be modified from country to country to reflect cultural differences.

Specific guidelines for making truly reliable comparisons using the survey data are provided in Appendix B. Only a general rule of thumb to be considered when interpreting the findings is provided here. To compare across age groups, genders or countries, it is best not to attach much weight to differences of seven percentage points or less. In the text accompanying the figures, differences are not highlighted if they are less than this; however, if the differences are part of a general trend in comparing genders or across countries, they are mentioned.

Since the figures presenting coefficients of correlation are based on aggregated data from all countries, they indicate general patterns only. Relationships with particular factors may be stronger or weaker in some countries. Substantial relationships may be present in some countries, but are not apparent when data are aggregated.

The cluster sampling procedure used in the survey results in higher standard errors than would occur in a randomly selected sample. Standard errors have been produced using a model where design factors have been calculated for selected variables using survey data from eight countries. See Appendix B for details.

F. Characteristics of respondents

Before the results of the survey are presented in this report, some characteristics of the young people involved are described. In addition to their age, gender and grade level, respondents provided information about the composition of their household and indicated how they perceive their socioeconomic circumstances. Responses to the question "How well off is your family?" were used to indicate family socioeconomic status in the analyses. Below, the mean age, home situation, and number of siblings of the respondents are briefly summarized.

The mean age of all the respondents in each group surveyed was 11.6, 13.6 and 15.5 years (Table 1.2). Respondents in Austria, Estonia, Lithuania and Russia were younger than the average age and those in the Czech Republic, Hungary, Northern Ireland and Wales older.

Table 1.2 Mean ages of respondents, by country

Country	11 year olds	13 year olds	15 year olds
Austria	11.3	13.3	15.2
Belgium Fl.	11.6	13.5	15.6
Belgium Fr.	11.5	13.5	15.5
Canada	11.5	13.5	15.5
Czech Rep.	11.9	14.0	16.0
Denmark	11.6	13.6	15.6
Estonia	11.4	13.3	15.3
Finland	11.8	13.8	15.8
France*	11.5	13.5	15.5
Germany*	11.5	13.5	15.5
Greenland	11.6	13.6	15.6
Hungary	12.0	13.8	15.8
Israel	11.8	13.5	15.6
Latvia	11.8	13.7	15.7
Lithuania	11.4	13.3	15.2
N. Ireland	11.9	13.9	15.9
Norway	11.5	13.5	15.5
Poland	11.7	13.7	15.7
Russia*	11.1	13.1	15.0
Scotland	11.5	13.5	15.6
Slovakia	11.8	13.7	15.6
Spain	11.5	13.5	15.6
Sweden	11.5	13.5	15.5
Switzerland	11.5	13.5	15.4
Wales	11.9	13.9	15.9
Total	**11.6**	**13.6**	**15.5**

* *France, Germany and Russia are represented only by regions.*

In all countries, except Greenland, 73 percent or more of respondents reported living with both parents (Figure 1.3). In 11 countries, over 80 percent of respondents lived with both their parents. The percentage of respondents living with one parent and a step parent ranged from under two percent in Spain and Israel to over eight percent in Canada, Denmark, Greenland and Sweden. In one-third of the countries surveyed less than 10 percent of students lived with a single parent, in most cases their mother. In the remaining two-thirds of countries the percentage living with a single parent ranged from 10 to 23 percent. Very few of the young people surveyed lived with someone other than at least one parent, except in Greenland (12%).

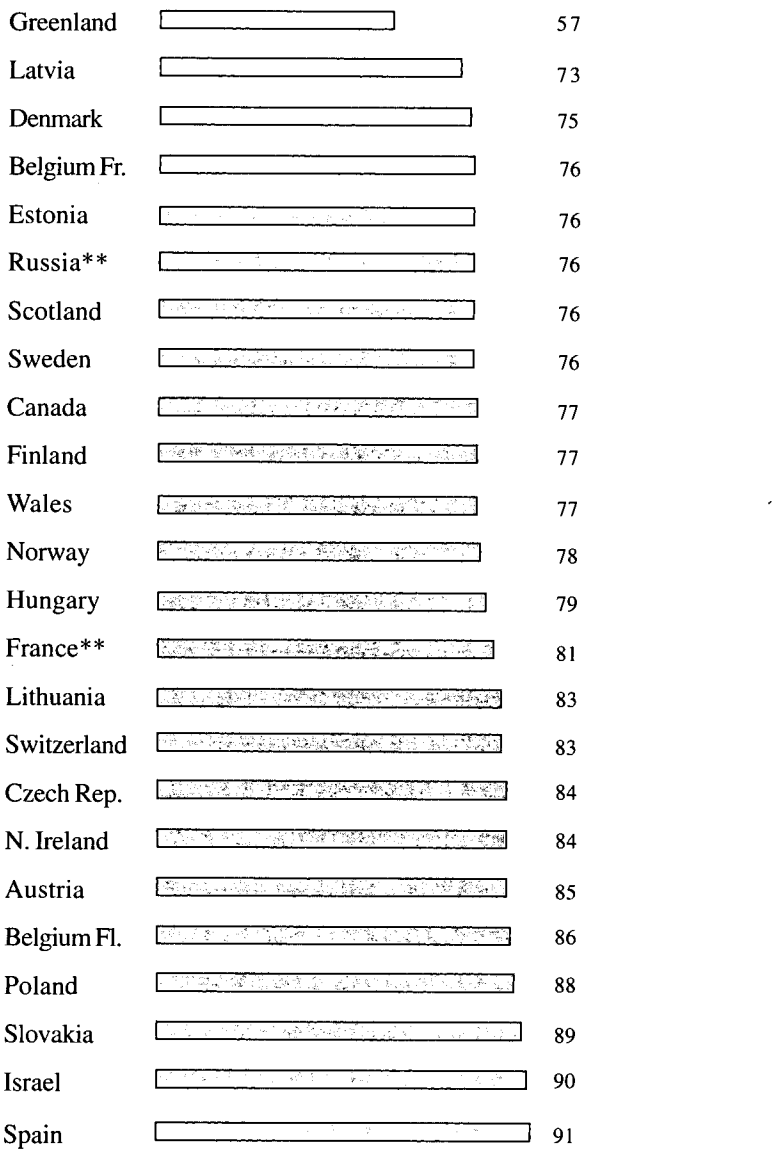
Except for respondents in Greenland and Israel, the highest proportion of young people had one sibling living at home with them (Table 1.3). In Israel, the greatest proportion lived with two siblings. Israel and Northern Ireland had substantial numbers of respondents with three or more siblings. Two-fifths of respondents in Greenland and Russia reported they were the only child living at home.

G. Organization of the report

The remainder of this report is divided into nine chapters. Chapter 2 presents the findings on the students' health risks related to smoking tobacco and drinking alcohol. Chapter 3 describes the physical and leisure-time activities of the students in terms of sports, fitness activities, both in and out of school, television watching and other leisure pursuits. The amount of time they reported spending in these activities, their attitudes toward them, reasons for participating and an assessment of their fitness level are discussed in this chapter. The topics in Chapter 4 are related to diet and dental care – the various foods eaten or drunk, some healthy and some not, as well as the care taken with teeth.

Chapter 5 is concerned with ailments and medication. In it, students' responses to questions about how often they had experienced particular problems in the last six months and whether they had taken medication in the past month for specific ailments are

Figure 1.3 Students who lived with both mother and father, by country* (% of three age groups combined)



* *Germany did not include this item.*

** *France and Russia are represented only by regions.*

Table 1.3 Students who had siblings living with them, by country* (% of three age groups combined)

Country	0 siblings	1 sibling	2 siblings	3 +
Austria	23	55	17	5
Belgium Fl.	21	57	17	6
Belgium Fr.	29	45	16	9
Canada	17	60	18	5
Czech Rep.	16	60	20	4
Denmark	23	51	19	7
Estonia	24	59	13	4
Finland	25	54	14	6
France**	17	41	26	16
Greenland	40	31	17	12
Hungary	22	66	10	2
Israel	8	21	36	35
Latvia	19	41	31	8
Lithuania	21	64	11	2
N. Ireland	13	43	21	24
Norway	19	56	20	4
Poland	18	59	15	8
Russia**	37	54	7	2
Scotland	18	59	17	5
Slovakia	13	62	18	7
Spain	15	58	17	10
Sweden	20	58	17	4
Switzerland	22	53	17	8
Wales	16	60	18	5

* *Germany did not include this item.*

** *France and Russia are represented only by regions.*

discussed. Relationships – with family, with peers and with teachers – so essential in the lives of healthy adolescents, are the main topics in Chapter 6, Psychosocial Adjustment.

Chapter 7 presents the responses to the items related to injuries and the use of seatbelts. In Chapter 8, the students' responses to questions related to their general attitude toward their school experience, their teachers and their fellow students are discussed.

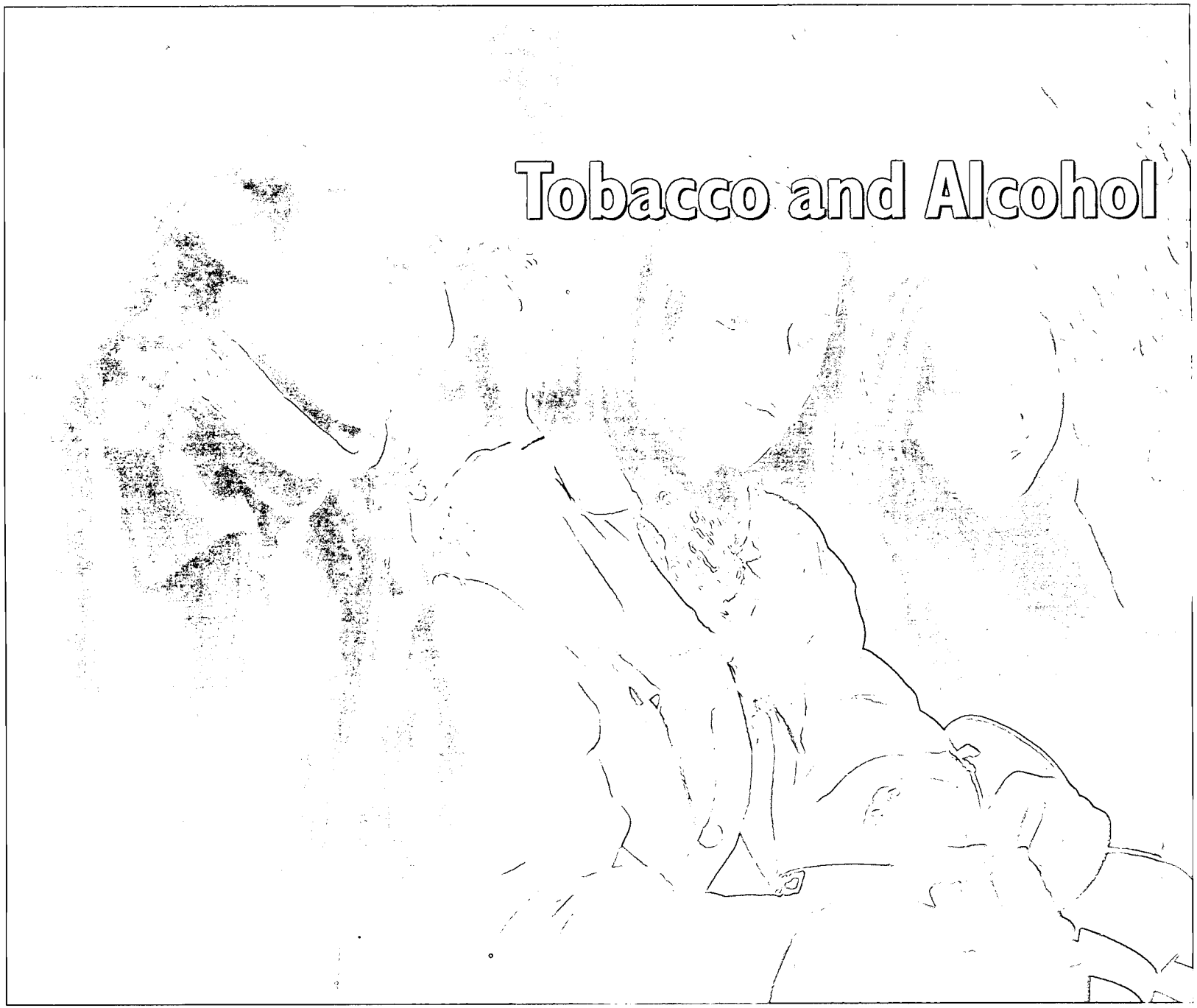
Chapter 9, Interrelationships, presents the analyses of relationships among health-risk factors and discusses some of the issues surrounding them. In Chapter 10, the findings are summarized and suggestions are offered regarding the implications of the survey for policy and program development.

In chapters 2 through 8, data are presented in figures by country, age and gender. In these figures, countries are ordered from the least positive to the most positive responses and the ordering is by the gender with the highest proportions responding positively to the item. These chapters also include figures presenting the coefficients of correlation for factors related to specific outcome measures. The data in these figures serve to consolidate the literature on factors associated with specific adolescent behaviours.

As mentioned, not all items included in the survey are presented and discussed in the text and the figures used to present the basic findings do not include all response alternatives for each item. Correlation matrices and multiple linear regression analyses used to provide the specific figures that appear in the report are not included. The WHO Regional Office for Europe will make the basic tables used in the study available on request. Further information on the analyses may be obtained from the study authors.

CHAPTER 2

Tobacco and Alcohol



Nicole Henry-Crémon

France

CHAPTER

2

Tobacco and Alcohol

A. Introduction

Both tobacco and alcohol use have been shown to be prominent causes of morbidity and premature mortality. In excess of 50,000 studies have been conducted throughout the world that have produced extensive documentation about the deleterious health effects associated with tobacco use (Freedman & Cohen, 1993). In fact, tobacco use alone accounts for nearly three million deaths each year and has been identified as the leading cause of preventable death in the developed world (Peto et al., 1992; Pan American Health Organization, 1992). Thus it is now recognized that smoking is associated with a wide range of disease, such as coronary heart disease, lung cancer, chronic bronchitis and emphysema (WHO, 1993; Johnson, 1991). Similarly, the adverse and long-term effects of excessive alcohol consumption on health have been established and include certain cancers, stroke, hypertension, liver disease and depression. Alcohol misuse has also been associated with a number of social and economic problems, including road accidents, high-risk sexual behaviour, violence, crime, labour absenteeism and impaired work performance (Royal College of Psychiatrists, 1986).

Policies and programs designed to reduce this toll of ill health and death from tobacco and alcohol use have thus formed key components in the health strategies of many countries (Healthy People 2000, 1990; Health Promotion Authority for Wales, 1990; Nutbeam et al., 1993). These policies and programs advocate two basic approaches, namely to support existing users of tobacco and alcohol in giving up or cutting down on their habit, and to dissuade young people from starting to use and abuse these substances in the first place. To this end, a wide range of organizations in many countries has been undertaking activities which emphasize the adoption of healthy lifestyle choices. These activities include: education to improve knowledge about the harmful effects of tobacco and other substance use coupled with techniques to foster the development of abilities and social skills necessary to resist social pressures to smoke and use alcohol; and the development of policies promoting, for example, smoke-free environments and

restrictions on the availability, sale and advertising of tobacco and alcohol. The social significance of these preventative efforts to curb tobacco and alcohol use among young people, in particular, cannot be underestimated as many future health-related behaviours seem to be initiated during the adolescent years (Bertrand & Abernathy, 1993; Pulkkinen, 1983).

The development and form of policies and programs to prevent young people from becoming smokers varies markedly between countries. For example, within the European Union there is considerable variation in taxes on tobacco, such that the cost of the most expensive tobacco is seven times that of the least expensive tobacco available (Longfield, 1994). In Canada, increasingly prohibitive legislative changes have been enacted regarding the sale and promotion of tobacco products to youth. These changes include raising the legal age to purchase cigarettes, requiring prominent warning labels to be displayed on cigarette packages and restricting cigarette smoking in schools.

Similarly, there are variations between countries in legislation about both the sale of alcohol and the total number of outlets. In many Scandinavian countries, strict laws limit the sale of alcohol to specific outlets and restrict sales to specific times, whereas in other European countries, such as France, there are comparatively few legislative barriers to the purchase of alcohol (Baldwin, 1995). Alcohol consumption is also mitigated by legal restrictions concerning the age at which a person is permitted to purchase alcohol. This minimum legal age varies among countries, from 16 to 21 years of age. While the majority of countries also have laws which prohibit driving while intoxicated, again, the definition of legally acceptable blood alcohol levels varies widely from country to country. Such national variations in the social and economic circumstances, or macrosocial factors, related to tobacco and alcohol use must also be considered important determinants of national consumption of these products (Mendoza, 1990). Therefore, the interpretation of cross-national data presented in this chapter requires particular care.

B. Tobacco use

In spite of legislative acts to restrict the availability of tobacco products and in the presence of comprehensive health education programs which underscore the long-term health risks associated with tobacco use, a significant proportion of young people continue to smoke. In the 1989/90 WHO-HBSC survey, *The Health of Canada's Youth: Views and Behaviours of 11, 13 and 15 year olds from 11 countries* (King & Coles, 1992), it was found that, in all but one country, more than half of the 15-year-old students surveyed had tried smoking at least once. By age 15, the total percentage of students who responded that they smoked at least occasionally ranged from 19 to 39 percent and 16 to 39 percent for males and females respectively. For this survey, the same items were used to estimate the extent of tobacco use among youth in the 24 participating countries permitting comparison between the results of two HBSC surveys for those countries that participated in both. Young people in all the countries participating in the survey were asked about their experience of tobacco use. They were asked whether they had ever experimented with smoking (even if it was only once) and whether they were currently smoking (even if only very occasionally).

In all countries, a variety of factors influence young people in their decision to smoke. Cigarette advertising is a very powerful influence, especially when an adolescent hero is promoting the product. Smoking is glamorized in the movies and on TV. The cost variable across countries can also be influential in determining whether or not young people can afford to smoke. These pressures on adolescents can counter to some extent the effects of health education programs which promote abstinence of smoking because of its harmful results.

There is mounting evidence to suggest that smoking is a powerful predictor of participation in other health-risk behaviours, primarily in relation to alcohol abuse and illicit drug use. Torabi et al. (1993) contend that self-reported cigarette smoking seems to be a more accurate predictor of both alcohol abuse and illicit drug use than,

for example, perceived risk of harm or peer approval/disapproval of use. Other studies on health-risk behaviours corroborate these findings by demonstrating strong positive correlations between tobacco use, alcohol and illicit drug use and other health-risk activities (King & Coles, 1992; King et al., 1988). It is also increasingly evident that youth who participate in health-risk behaviours are doing so collectively and not as social isolates. Hence, peer group structure is now considered a critical factor in the initiation and maintenance of adolescent smoking (Urberg, 1992; Clayton, 1991; Van Roosmalen & McDaniel, 1989).

Data from this survey strongly reinforce these findings. They also show a link between smoking and a negative attitude toward school and poor academic achievement. Smoking and bullying behaviour were also shown to be related. Figure 2.1 shows the factors which correlated substantially with smoking for both male and female students in all countries combined. For the 11-year-old age group where very few students smoke, the only meaningful correlate of smoking behaviour was having been drunk. For 13 and 15 year olds there was also a substantial relationship between these two risk behaviours. Smokers from the two older groups were also more likely than non-smokers to spend their evenings away from home with friends. Both male and female 15-year-old smokers were more likely to find it easy to talk with opposite-gender friends and along with 13-year-old girls were more likely to spend time with friends after school. All 13 year olds, as well as 15-year-old boys were more likely to have a negative attitude toward school; 13-year-old boys and 15-year-old boys and girls were more likely to do poorly at school. Thirteen- and 15-year-old smokers of both genders were more likely to bully others. A more detailed examination of these relationships is presented in Chapter 9.

1. Experimentation with smoking

Figure 2.2 shows the proportion of young people in the survey who reported having tried smoking at least once both by age group and gender. It indicates that in all countries there was a dramatic increase in the number of young people who reported having tried smoking

Figure 2.1 Factors associated with smoking

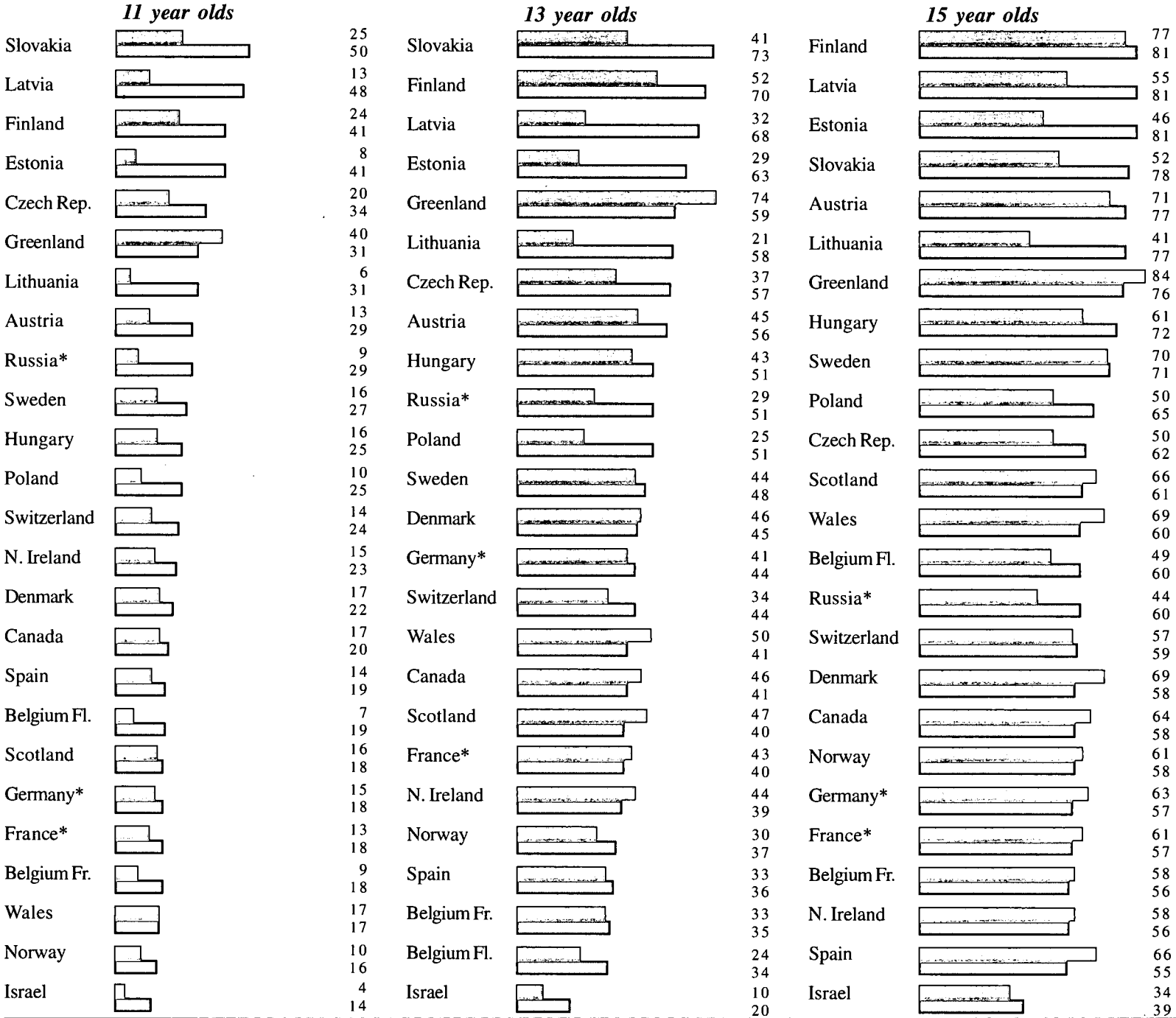
Students who smoke are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Have been drunk	○	○	●	●	●	●
Spend evenings away from home with friends	—	—	○	○	○	○
Bully others	—	—	○	○	○	○
Spend time with friends after school	—	—	—	○	○	○
Have a negative attitude towards school	—	—	○	○	○	—
Achieve poorly in school	—	—	○	—	○	○
Be tired in the morning	—	—	—	○	—	○
Find it easy to talk to opposite gender friends	—	—	—	—	○	○

Correlation coefficient: ○ .15 to .19 ○ .20 to .29 ○ .30 to .39 ● .40+

between the ages of 11 and 15. Nevertheless, there was a wide disparity in the levels of reported experimentation with smoking between countries. At all ages, a relatively high proportion of boys in Estonia, Finland, Latvia and Slovakia reported that they have tried smoking. The pattern was quite different for girls in this group of countries. Only girls from Finland were consistently among the higher proportions having experimented with smoking. The percentage of girls in Greenland who had tried smoking was far larger than in any other country and this was the only country where girls outnumbered boys in each age group. Further, rates of experimentation among 13- and 15- year-old females in Greenland exceeded those reported for both male and female respondents in all other participating countries. For each age group, young Israelis were less likely than their counterparts in other countries to report such experimentation. Indeed, Israel was the only country in which fewer than two out of five 15-year-old boys and girls reported having tried smoking.

Two distinct patterns of smoking experimentation emerged by age 15: in eastern European countries more boys than girls at all ages

Figure 2.2 Students who have experimented with smoking (%)



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

reported having tried smoking, but in most western European countries, Canada and Greenland, this gender pattern was reversed.

2. Current use

Of those who experiment with tobacco, many decide not to do so again, while others experiment further and take up the habit. To determine the prevalence of current tobacco use, students were asked, "How often do you smoke at present?" and were given the option of responding: I do not smoke; everyday; at least once a week, but not everyday; and less than once a week. Figure 2.3 shows the proportion of young people who reported current use of tobacco by age group and gender. Only those who reported smoking at least once a week are referred to as current smokers.

Less than 5 percent of 11 year olds reported that they smoke weekly except for girls in Greenland, 6 percent of whom reported smoking at least weekly. But, as with experimentation with smoking, the proportion taking up the habit on a more regular basis rose sharply with age in all countries. By age 15, nearly half of both sexes reported smoking weekly in Greenland, while more than a quarter reported doing so in Austria and Finland. At the other end of the scale, just under one-tenth of Israeli 15 year olds indicated that they were current smokers.

Gender differences in current use of tobacco were particularly marked in most eastern European countries; for example, among 15 year olds in the Baltic states and Slovakia, more than twice as many boys as girls said that they smoked weekly. In fact, girls from eastern European countries reported relatively low rates of weekly smoking at all ages. By way of contrast, the prevalence of reported weekly smoking among 15 year olds was higher for girls than boys in all western European and North American countries, apart from Belgium (both the Flemish- and French-speaking communities), Finland and Greenland.

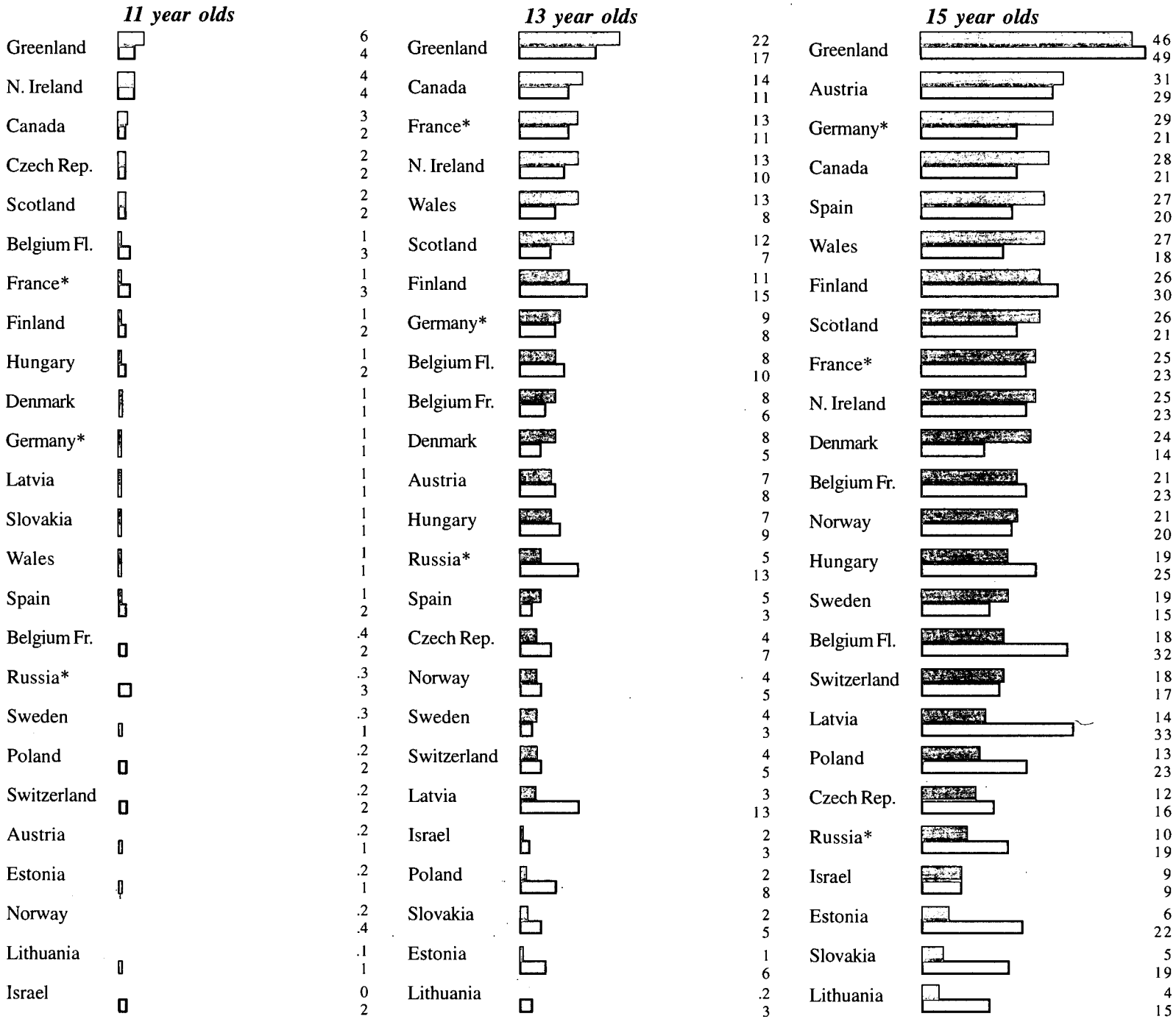
C. Alcohol consumption

As previously stated in terms of tobacco use, similar exposure to both alcohol advertising and its use in media productions tend to counter the laws and education programs warning about alcohol. If restrictions on the sale and consumption of alcoholic beverages were, indeed, sufficient to compel young people to abstain from alcohol use until they reach the legal drinking age, the incidence of drinking behaviour among 11 to 15 year olds would scarcely be worthy of mention in the context of this report. As evidenced by the preceding WHO-sponsored study of health-related behaviours among 11, 13 and 15 year olds, however, a large proportion of youth have already tasted alcohol as early as age 11 (King & Coles, 1992). By age 15, the proportion of students in this survey who drank alcoholic beverages on a weekly basis was as high as 52 percent for males and 45 percent for females. Such data would seem to indicate that alcohol misuse among young people occurs despite laws regulating its availability. Clearly, young people are involved with alcohol at much earlier ages than the legislation prescribing age limits would infer.

The young people participating in the survey were asked about their use of alcohol. Specifically, they were asked whether they had ever tasted an alcoholic drink, how frequently (even if only a small amount) they took alcoholic drinks such as wine, spirits, beer and, in several countries, cider, and whether they had ever been drunk. In contrast to reported levels of adolescent smoking, young people's reports of alcohol consumption and drunkenness are usually assumed to be exaggerated (Nutbeam, 1989). Nevertheless, the data presented here represent reasonable indicators of alcohol use and abuse among young people.

Numerous studies of adolescent behaviour have demonstrated striking similarities between correlates of cigarette smoking with those of alcohol use (Torabi et al., 1993; McDermott et al., 1992). Some researchers assert that the psychosocial and demographic predictors of adolescent smoking and drinking have more in common than variables thought to predict illicit drug use and other deviant

Figure 2.3 Students who smoked cigarettes once a week or more (%)



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

behaviours among adolescents (Thorlindsson & Vilhjalmsson, 1991). In this survey as well, the correlates of drinking alcohol were found to be similar to those of smoking cigarettes. The data also strongly reinforce the idea that the adolescents who engage in these health-risk behaviours tend to socialize more with their peers than those who do not smoke and drink alcohol. Furthermore, they indicate a link between disaffection with school and health-risk behaviours.

Figure 2.4 shows the factors which correlate highly with having been drunk in all countries combined. For both males and females at all three age levels, students who had been drunk were more likely to smoke cigarettes. Male and female 13 and 15 year olds who had been drunk were more likely to spend evenings away from home with friends and to be tired in the morning. Drinking to excess was linked with spending time with friends after school and watching videos for 15-year-olds. Thirteen-year-old girls are also likely to spend time with friends after school and 13-year-old boys to spend time watching videos. These students also find it easy to talk with friends of the opposite gender. Boys at all three age levels along with 13-year-old girls were more likely to have a negative attitude toward school. Boys of each age group were more likely to bully other students. Thirteen- and 15-year old boys who drank to excess were more likely to be injured seriously enough in the last year to require medical treatment.

Figure 2.4 Factors associated with having been drunk

Students who have been drunk are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Smoke cigarettes	○	○	●	●	●	●
Spend evenings away from home with friends	—	—	○	○	○	○
Be tired in the morning	—	—	○	○	○	○
Have a negative attitude toward school	○	—	○	○	○	—
Spend time with friends after school	—	—	—	○	○	○
Find it easy to talk to opposite gender friends	—	—	—	○	○	○
Bully others	○	—	○	—	○	—
Watch videos	—	—	○	—	○	○
Have been injured and needed medical treatment	—	—	○	—	○	—

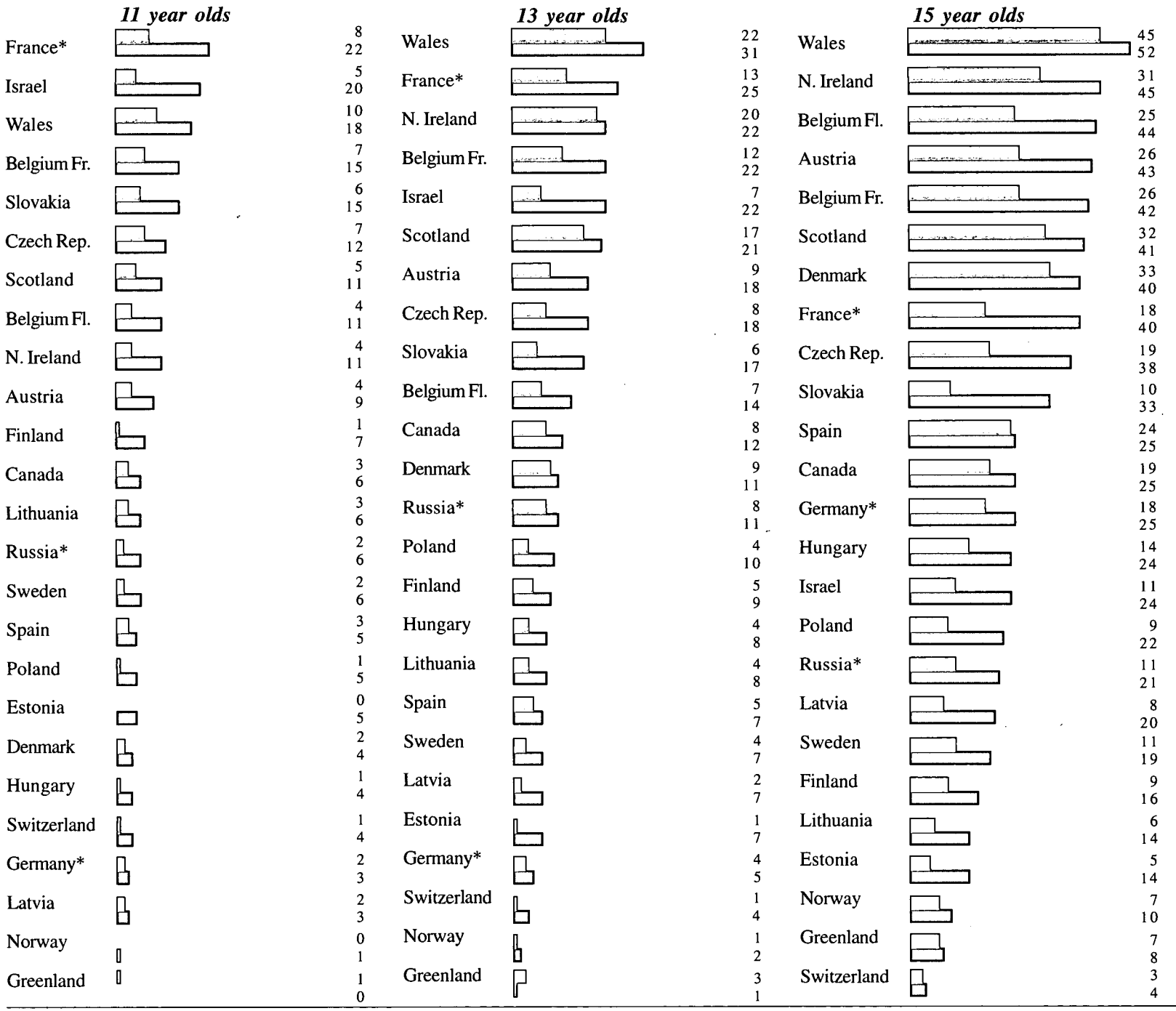
Correlation coefficient: ○ .15 to .19 ○ .20 to .29 ○ .30 to .39 ● .40+

I. Experimentation and current use

In most countries, the majority of 11 year olds reported that they had tasted an alcoholic drink; only among girls in Estonia, Greenland, Israel, Latvia, Norway, Russia and Switzerland and boys in Greenland, Norway and Switzerland was such experimentation with alcohol reported by fewer than half of 11 year olds. By the age of 15, the proportion who reported having tasted an alcoholic drink reached nearly 100 percent in Wales and exceeded 80 percent in all countries except Israel; among 15-year-old Israelis, only 68 percent of boys and 54 percent of girls reported that they had tasted alcohol.

Current consumption of alcohol, which in this report is defined as drinking some kind of alcoholic beverage at least every week, also increased substantially with age. Figure 2.5 shows that in all countries there was more than a doubling of the proportion of students between

Figure 2.5 Students who drank alcoholic beverages at least weekly (%)



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

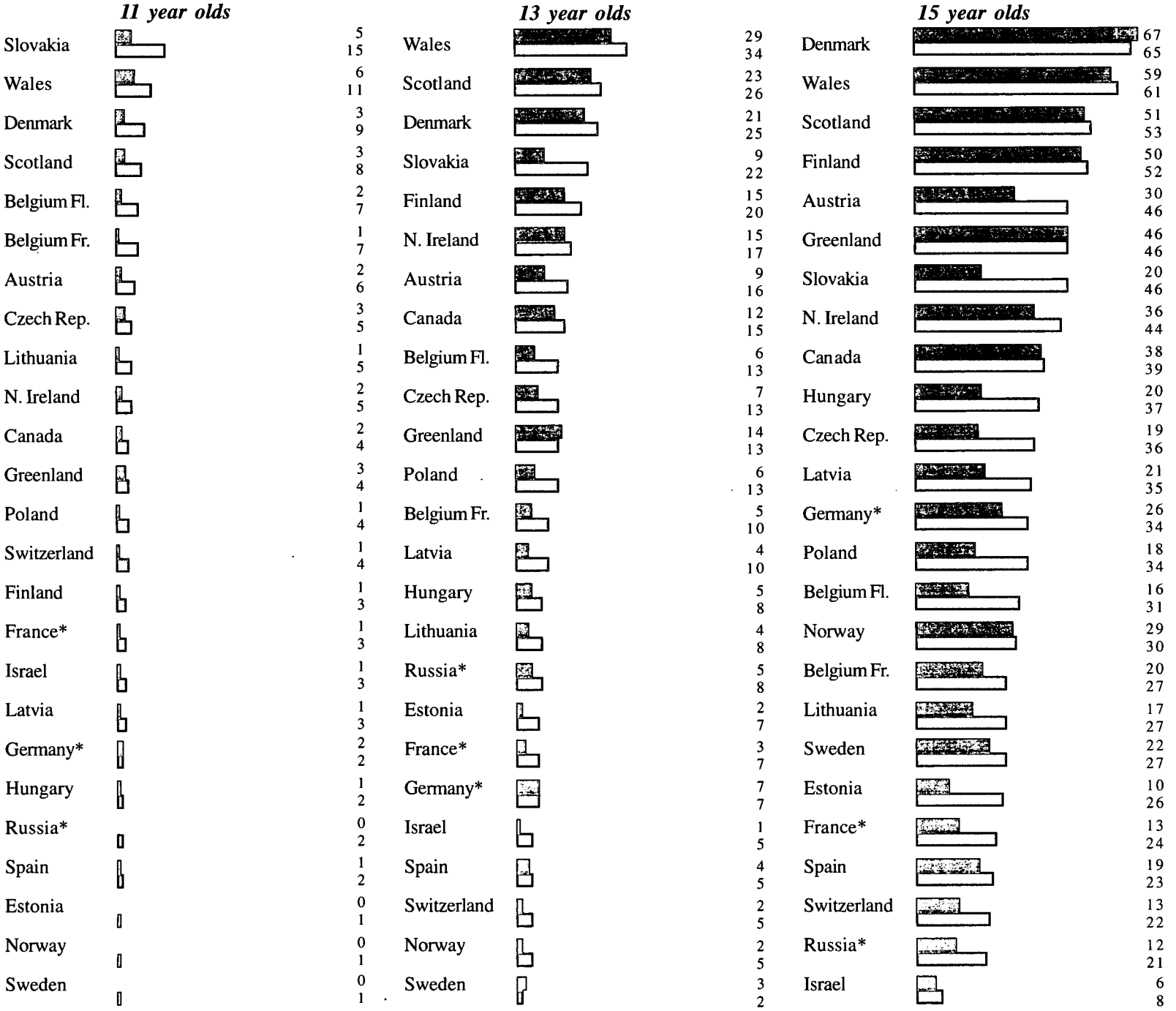
the ages of 11 and 15 who reported current consumption of alcohol, apart from among boys in Israel and France and among girls in Slovakia. Overall, more boys than girls reported drinking alcohol at least weekly (except for 11- and 13-year-old Greenlandic students). At all ages the proportion reporting regular alcohol consumption was relatively high for both boys and girls in Wales and relatively low in Greenland, Norway and Switzerland. The study also reveals that 10 percent or less of 15-year-old females reported weekly consumption of alcohol in the following countries: Estonia, Finland, Greenland, Latvia, Lithuania, Norway, Poland, Slovakia and Switzerland.

2. Episodes of drunkenness

Reported drunkenness may be seen as indicative of an episode of alcohol misuse. Young people who report having been "drunk" on several occasions may be viewed as a special risk group. Figure 2.6 shows the proportion of young people in each country who reported two or more episodes of drunkenness by age and sex. It can be seen that in all countries, such alcohol misuse increased with age and in most countries it was more frequent among boys than girls, apart from 13 year olds in Sweden and Greenland and 15 year olds in Denmark. Among 15 year olds, the highest levels of multiple episodes of drunkenness (half or more of boys and girls) were recorded in Denmark, Finland, Scotland and Wales, while the lowest level (less than 10% of boys and girls) was recorded in Israel. Again, a low percentage of 15-year-old females (less than 15%) reported drunkenness on two or more occasions in the following countries: Estonia, France, Israel, Russia and Switzerland.

Sweden

Figure 2.6 Students who had been really drunk two or more times (%)



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

D. Summary

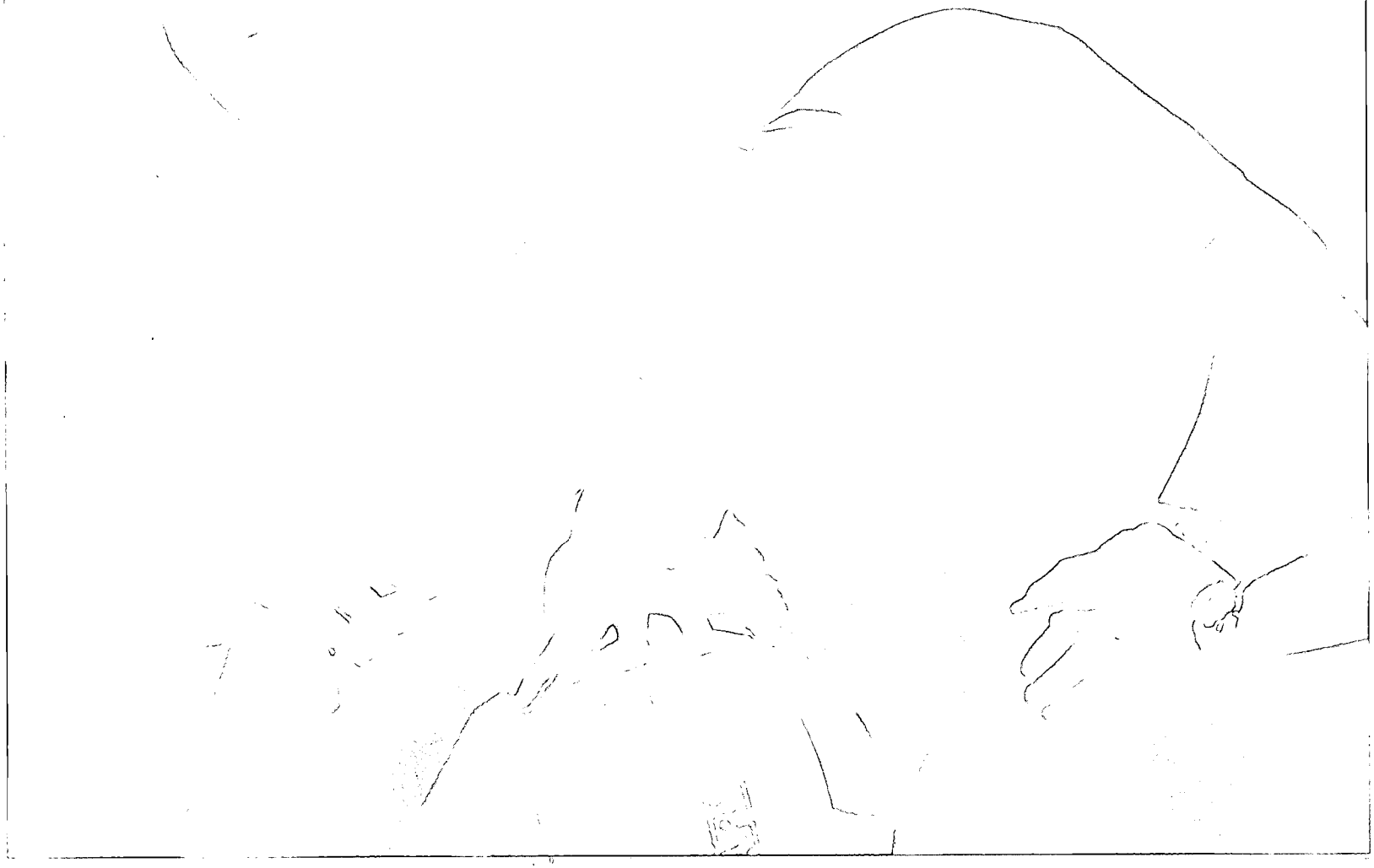
The data in this chapter indicate that a significant proportion of young Europeans and North Americans are engaging in health-damaging behaviours. In over half the countries participating in the survey, more than two-fifths of the young people reported experimenting with tobacco by the age of 13 and one-fifth that they had taken up the habit by the age of 15. Among this oldest age group, more than one in ten reported two or more episodes of drunkenness. However, there was considerable variation among countries in reported levels of smoking and drinking. Greenland, Canada and Ireland are notable for high prevalence levels of smoking at all ages, with Lithuania and Israel at low prevalence levels. The highest proportion of youth who drank weekly was in Wales and the lowest proportions in Greenland and Norway.

In many countries, more girls than boys reported smoking cigarettes, but the data for eastern Europe suggest that smoking by boys remains the priority concern there. However, if eastern Europe follows the trend that has taken place in western Europe over recent years, then in the future, girls may be expected to show an increase in smoking prevalence and overtake the boys. Reported alcohol use was more common among boys than girls in all countries with the exception of 13 year olds in Greenland and Sweden.

Of interest, also, are the factors associated with adolescent smoking and drinking behaviours in all countries. These data verify the interrelatedness of health-risk behaviours, alienation from home and school, and peer group affiliation by showing strong positive correlations between factors such as smoking, alcohol misuse, time spent with friends away from home in the evenings, and low academic achievement. Although this survey does not take into account differences in macrosocial factors such as the commercial availability of these products to young people, their cost, national advertising regulations or social acceptability of tobacco and alcohol use, the data show a link between individual factors. On this level, these findings suggest that conventional health education programs that primarily transmit knowledge are not effective with all young people in deterring adolescent tobacco and alcohol use.

CHAPTER 3

Exercise and Leisure-time Activities



Germany

CHAPTER

3

Exercise and Leisure-time Activities

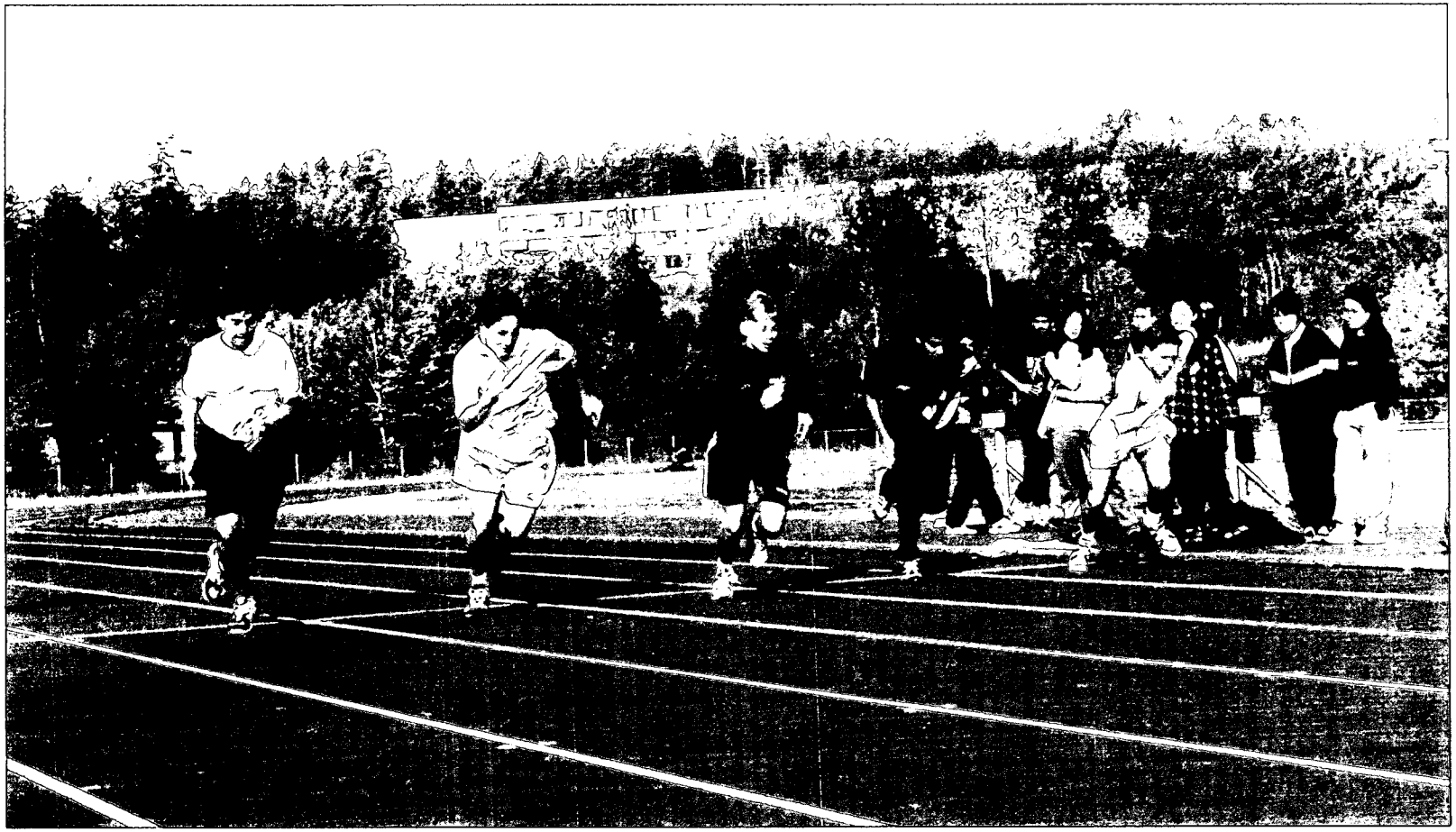
A. Introduction

In this chapter we examine the extent to which young people engage in the type of physical activity which is both beneficial when they are young and likely to encourage a lifelong involvement in physical exercise. Their involvement in leisure-time activities, such as watching television (TV) and video cassette recorder (VCR) movies and playing computer/video games, is considered in relation to the health implications of these activities.

Previous research has demonstrated that moderate physical activity enhances physical, mental and social well-being, and plays an important role in the prevention of cardiovascular disease (CVD) (Bouchard et al., 1990). In the past 20 years several large, long-term studies of adults have shown that physical inactivity is a major risk factor for CVD and premature mortality (Leon et al., 1987; Powell et al., 1987). Regular physical activity can benefit children as well (Sallis & Faucette, 1992). Since risk factor levels in childhood predict levels in young adulthood (Cresanta et al., 1986), decreasing these risk factors in children is an important health consideration.

In addition to the benefits related to the prevention of CVD, physical activity appears to promote improved mental health in adults (Taylor et al., 1985) and to enhance self-esteem in children (Gruber, 1986). Physical activity and sports, as well as being an important health behaviour, constitute important socialization arenas for youth (Kenyon & McPherson, 1973).

The benefits of physical activity are extremely important; however, participation in physical activity is not necessarily risk free (Sallis & Faucette, 1992). While most of the risks are associated with carelessness or unnecessary risk taking, some are just outcomes of taking part in games and play. Benefits tend to be maximized and risks minimized with appropriate amounts of physical activity and effective safety measures. Chapter 7 summarizes the incidence of injuries associated with activity for our sample of young people.



Norway

The amount of time young people spend watching television and playing computer and video games is examined for three reasons. First, time devoted to these essentially passive activities is not available for health-important physical activity. Second, those who spend time watching TV tend to develop poor nutrition habits (Felts et al., 1992). Third, both television programs and computer games emphasize violent acts which may contribute to the development of a set of values that influence young people's behaviour.

Cross-country comparisons must be cautiously interpreted because the questionnaires were not administered in every country at the same time of the year and seasonal differences in outdoor activity opportunities vary greatly from one country to another. For example, the sports played by young people in winter in Finland differ greatly from those played at the same time of year in Israel.

B. Exercise

In order to obtain an estimate of weekly cardiovascular activity, students were asked how often per week they exercise outside school hours until they are out of breath or they sweat. Figure 3.1 shows the percentage of students who exercise outside school hours 2 to 3 times per week or more often. The level of physical activity was quite high among boys in all countries, but less so among girls. Between 62 and 92 percent of the boys across age groups and countries said they exercised vigorously two or more times a week; between 41 and 84 percent of the girls did. In many countries the difference between the proportions of boys and girls who exercise is noteworthy. For example, in Spain 39 percent fewer 15-year-old girls than boys said they participated in vigorous exercise two or more times per week; only in Norway were gender differences consistently quite small. Although the trend was for fewer 15-year-old students to exercise than 11 and 13 year olds, the proportions of boys declined by more than 10 percent in only four countries (Estonia and Poland, 11%; Finland, 15%; and Slovakia, 19%). Although in a few countries more 13-year-old girls than 11 year olds exercised two or more times per week, by age 15 the proportions declined in most countries and the decline exceeded 12 percent in many countries.

In Austria a high percentage of boys maintained an exercise regime as did 11- and 13-year-old girls, but there was a substantial drop for 15-year-old Austrian girls. Overall, more girls in Austria, Finland, Germany and Norway were likely to exercise and fewer girls in Greenland, Lithuania and Spain.

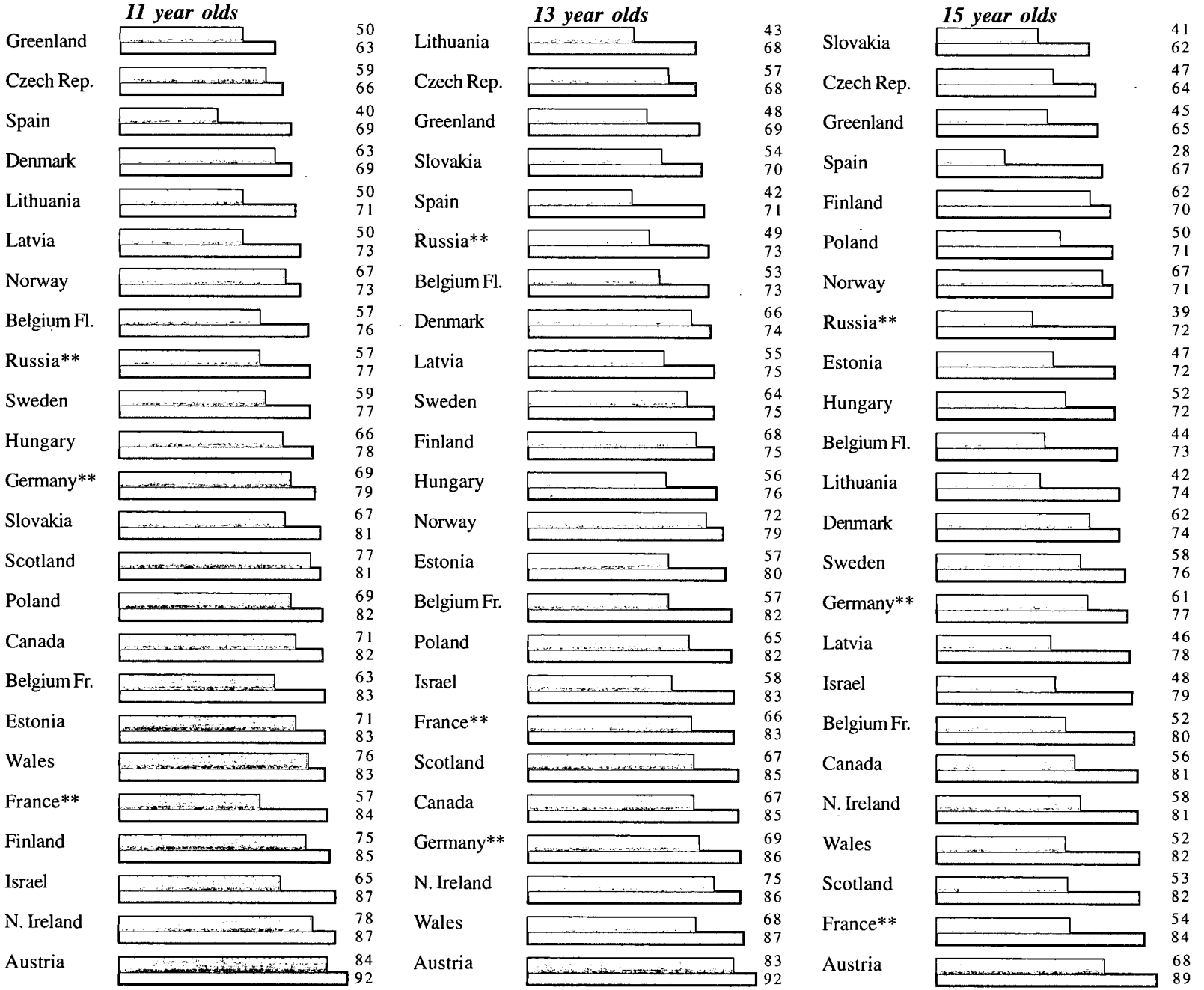
Respondents were also asked how many hours a week they exercise. Only Austrian students were consistent; they led in all age groups for both items. Students in Spain and the Czech Republic were in the lower third of the countries across all ages for both items.

C. Leisure-time activities

Leisure-time activities include the out-of-school sports and exercise described earlier as well as the many other pursuits in which students are involved. In this section we examine the pastimes of watching TV, watching movies on VCRs and playing computer games.

There are numerous studies of the effect of television on children, much of it centred on the negative impact of violent images. In recent years, concern has grown to include movies available for VCR viewing and computer games. (The latter are treated more fully in section 3 below.) Although TV viewing, and watching video movies, is often regarded as a passive activity, it does require some degree of cognitive or mental effort. For example, TV viewers have been shown to be attentive and to be involved in message processing and meaning comprehension (Hawkins & Pingree, 1987) and children to be able to perceive moral themes and infer the underlying messages in what they watch (Christenson, 1986). On the other hand, recent research indicated a measurable increase, from 3 to 15 percent, in aggressive behaviour among viewers of violent television programs (Clark, 1993) and it has been noted that over 1000 separate reports and reviews associate media violence with facilitating aggressive, antisocial behaviour and desensitizing viewers to future violence (Comstock & Strasburger, 1993). Researchers have also found a relationship between excessive TV viewing and poor dietary habits and a sedentary lifestyle (Robinson & Killen, 1995; Felts et al., 1992; Groves, 1988).

Figure 3.1 Students who took part in physical activity two or more times per week* (%)



* *Switzerland did not include this item.*

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

I. Watching television

Watching TV is obviously a popular pastime in all countries, but the data must be viewed with caution since the availability of programming, the novelty of TV viewing and access to other activities may be contributing factors in the extent to which students watch TV.

When coefficients of correlation were calculated for all countries aggregated, an association between TV viewing and the consumption of foods with a high sugar content was found for both genders and all age groups (Figure 3.2). The correlations shown almost certainly underestimate the strength of the relationship; analysis by country tends to show stronger relationships between watching TV for lengthy periods of time and poor diet habits. However, the data show only a slight relationship between TV viewing and aggressive, bullying behaviour. There is a strong correlation between watching TV and watching videos among all age groups, and among all male respondents and 11-year-old females between watching TV and playing computer games. Eleven-year-old boys and 13-year-old girls who watched TV a great deal were likely to have a negative attitude toward school.

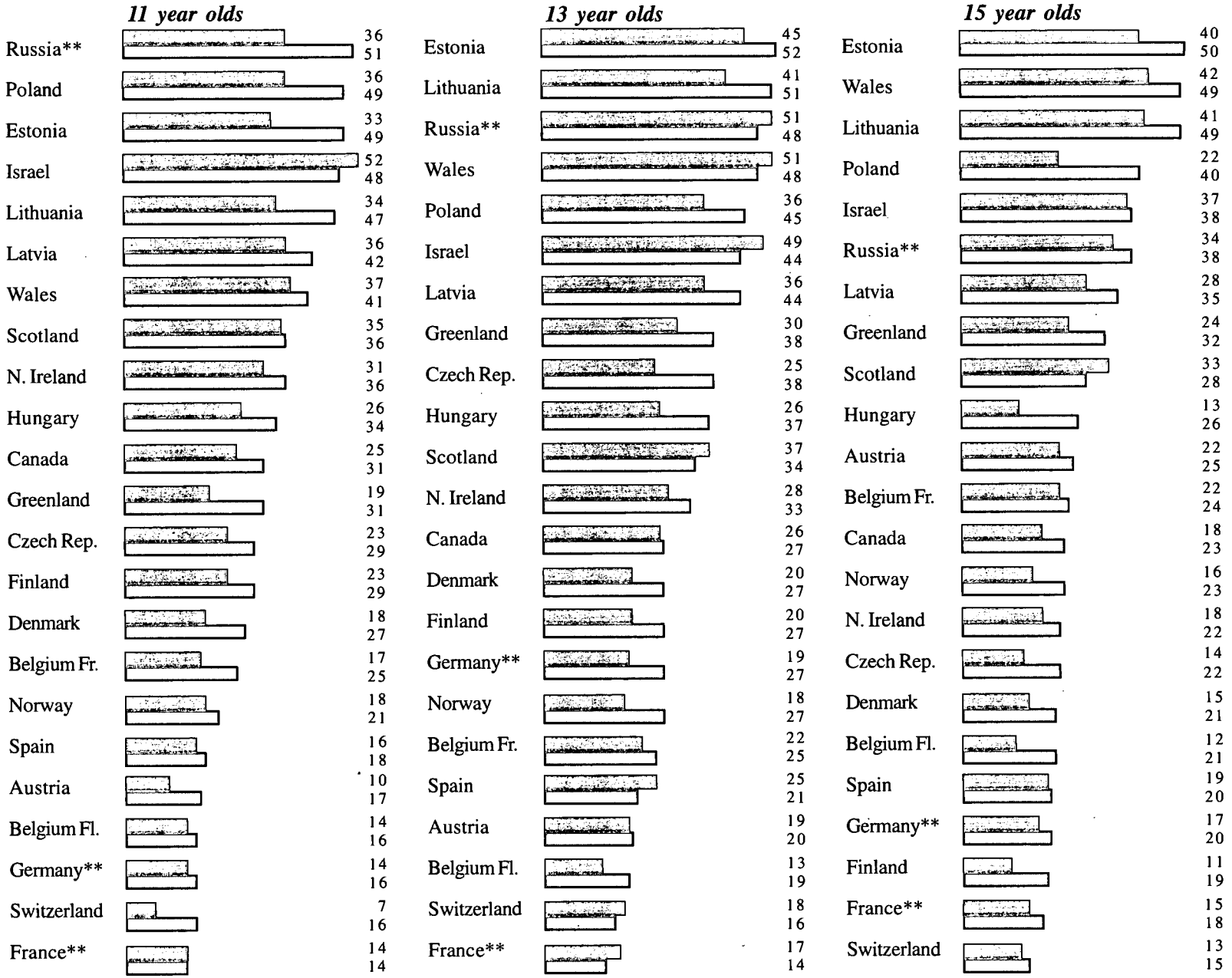
The majority of students did not watch TV more than four hours a day; in only five countries did half of either boys or girls in at least one of the age groups do so (Figure 3.3). The patterns of TV watching for each age group were somewhat different. Generally, more 13 year olds than 11 year olds spent time in front of the TV, but there tended to be a decline in the proportions watching by age 15. At each age, more boys than girls watched TV four or more hours a day, but there was a slight anomaly in this pattern for 13 year olds where higher proportions of girls spent time watching TV in six countries compared with more girls in only one country for 11 and 15 year olds (Israel and Scotland, respectively). Boys and girls in all age groups from Estonia, Israel, Lithuania, Russia and Wales, and boys in Latvia and Poland appeared consistently among the one-third of the countries where the most students watched four or more hours of TV per day.

Figure 3.2 Factors associated with watching TV

Students who watch TV are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Watch videos	O	O	O	O	O	O
Eat candy/chocolate bars	O	O	O	O	O	O
Drink sweet soft drinks	O	O	O	O	—	O
Play computer games	O	O	O	—	O	—
Have a negative attitude towards school	O	—	—	O	—	—

Correlation coefficient: O .15 to .19 O .20 to .29

Figure 3.3 Students who watched TV at least four hours a day* (%)



* *Slovakia and Sweden did not include this item.*

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

2. Watching videos

In the last few years rental videos have become widely available. They represent all types of entertainment – from movies made for children to those that feature extreme violence. Analysis of the aggregated data show substantial correlations between watching videos and similar pastimes – watching TV and playing computer games – and between video watching and poor dietary habits (Figure 3.4). An association with aggressive behaviour was not evident. A positive correlation was found in all age and gender groups surveyed, between watching videos and spending evenings with friends and among 13- and 15-year-old boys and 15-year-old girls between watching videos and having been drunk.

The data in this survey show that VCR movie watching does not appear to be a major leisure-time activity among the young people surveyed (see Figure 3.5). The highest proportion of boys or girls who spent four hours or more per week watching VCR movies was 15-year-old boys in Greenland. For the most part, very few

Figure 3.4 Factors associated with watching videos

Students who watch videos more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Play computer games	O	O	O	O	O	O
Watch television	O	O	O	O	O	O
Drink sweet soft drinks	O	O	O	O	O	O
Eat potato chips	O	O	O	O	O	O
Spend evenings with friends	O	O	O	O	O	O
Have been drunk	—	—	O	—	O	O
Eat hamburgers/hot dogs	—	—	O	O	—	—
Eat candy/chocolate bars	O	—	O	—	—	—

Correlation coefficient: O .15 to .19 O .20 to .29 O .30 to .39

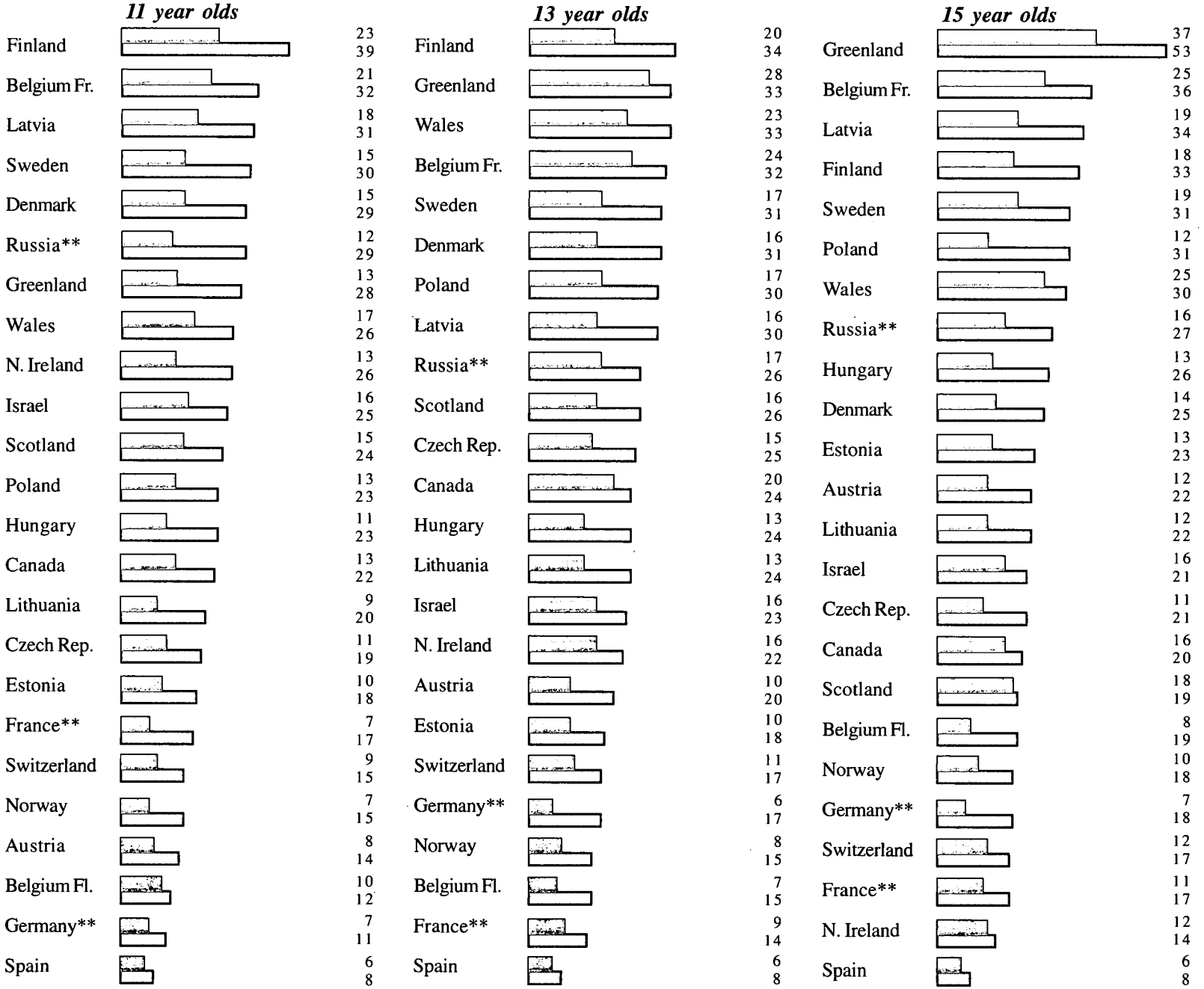
students spent four or more hours per week watching videos – less than 20 percent of girls and less than 35 percent of boys in most countries watched videos four or more hours per week. However, more boys than girls of all ages in all countries did so.

3. Playing computer games

The damaging effects of increased aggressive and antisocial behaviours among children and adolescents have been documented in the majority of recent research literature on computer games (National Coalition on Television Violence, 1990). It has also been noted that the content of these games has become increasingly violent as elements of fantasy and challenge are intertwined in an ever more complex matrix of visual effects needed to gratify skilled players. Research has also shown that males are more likely to play computer games than females and that game manufacturers are responding to a perceived demand for an increasingly violent product from this audience (Clark, 1993). One study revealed gender-role stereotyping to be rampant among the top selling Nintendo games; there were a total of 115 male and 9 female characters in 47 of the games (Provenzo, 1992). Furthermore, over a quarter of the games featured a plot in which a woman is either kidnapped or cast in a perilous situation and has to be rescued.

Another concern about computer games is that they emphasize autonomous and aggressive action rather than collaboration or teamwork (Provenzo, 1992). Most games involve an individual player battling against enemy forces. Developing cooperative spirit or a feeling of community seldom figures in the plots of these games. Yet, some researchers contend that the arcade environment itself can provide youth with opportunities for social interaction and tension-reduction (Wigand et al., 1986). They suggest that playing these games acts as a communication "icebreaker" by enabling young people to meet and interact with others in a nonmediated social environment. Computer games may also function as tension-relieving activities by diverting attention from everyday stresses.

Figure 3.5 Students who watched videos at least four hours a week* (%)



* *Slovakia did not include this item.*

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

Figure 3.6 Factors associated with playing computer games

Students who play computer games are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Watch videos	O	O	O	O	O	O
Watch television	O	O	O	—	O	—
Drink sweet soft drinks	O	O	O	O	—	—
Eat potato chips	O	O	O	O	—	—
Spend evenings with friends	O	O	—	—	—	—
Eat hamburgers/hot dogs	O	—	O	—	—	—
Eat candy/chocolate bars	O	—	O	—	—	—

Correlation coefficient: O .15 to .19 O .20 to .29 O .30 to .39

Figure 3.6 shows the relationships between playing computer games and other activities. Those who do so are more likely to spend time watching videos and television shows. Younger game players are more likely to drink soft drinks and eat potato chips. It is not surprising to see that there are more relationships for boys than for girls.

The data in this survey affirmed the gender differences in playing computer games, with boys far more likely to be players. As Figure 3.7 shows, only in Switzerland did a substantial number of girls say they played computer games; among the 11 year olds, almost as high a proportion of Swiss girls as boys played. Computer games are least likely to be played in Spain, but overall there is no predictable pattern by country related to availability. Computer games are most commonly played by boys in Denmark, Northern Ireland (11 and 13 year olds), Scotland, Switzerland and Wales.

D. Summary

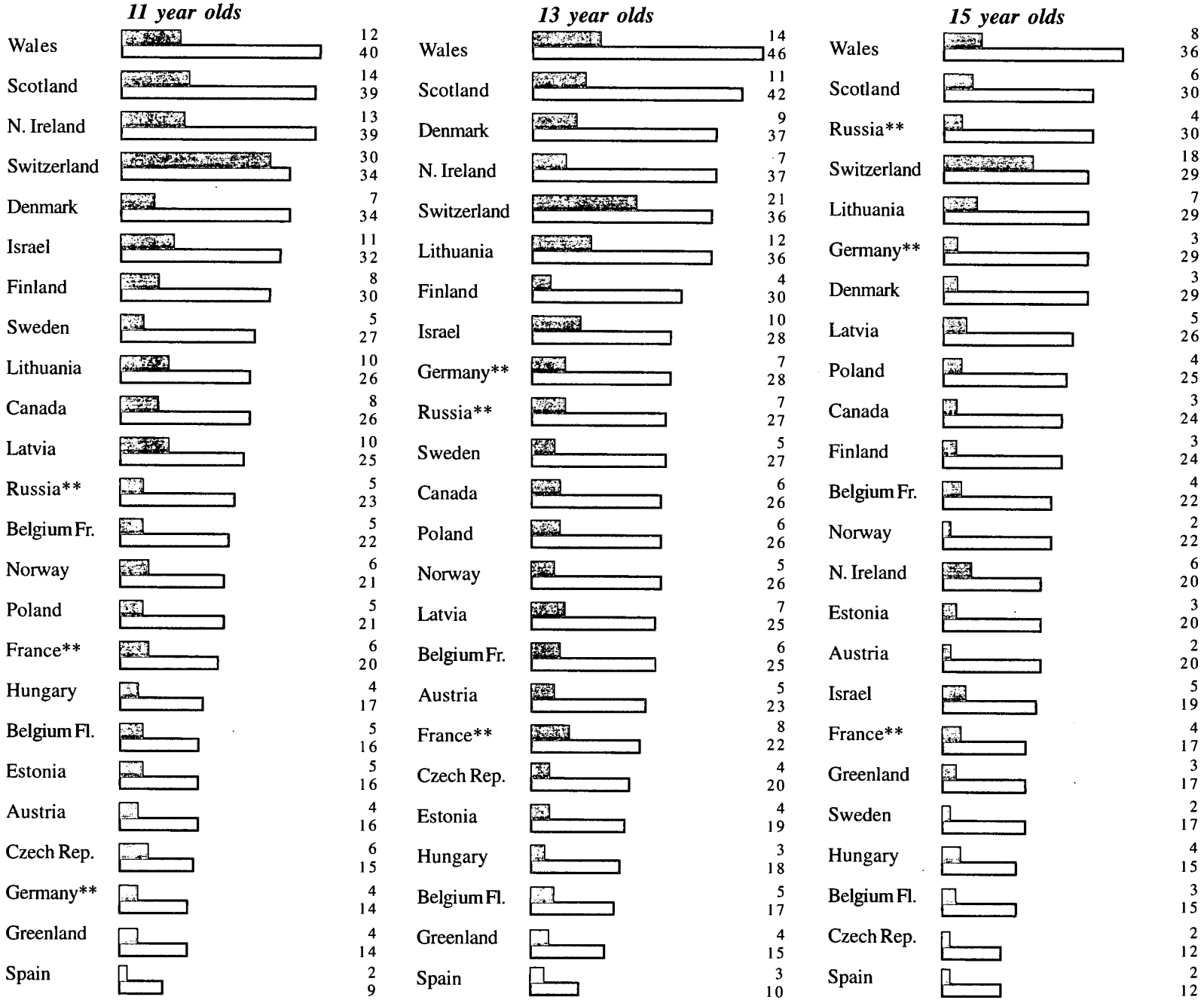
The level of physical activity among the students who participated in this survey is generally quite high. If this activity is encouraged and maintained there should be obvious health benefits for these students in the future.

The findings suggest, however, that girls are less physically active than boys and the gender differences seem to increase during early adolescence. Other studies have also shown that boys are generally more physically active than girls (Sallis & Faucette, 1992). Boys receive a great deal of encouragement from their families and from society to play sports and be physically active. Boys, though, tended to be more involved in sedentary activities such as watching TV and videos and playing computer games.

Among eastern European girls the level of physical activity is somewhat lower, especially when compared to 15-year-old girls from the northern European countries. One explanation of this finding is that countries with a longer tradition of focusing on gender equality, such as Denmark and Norway, have been more successful in overcoming the traditional gender-based stereotypes associated with participation in sports.

When designing interventions aimed at promoting physical activity, it is of paramount importance to know how habitual physical activity is adopted, maintained and discontinued. Findings from the 1985-86 HBSC survey indicate that social, entertainment and health motives are perceived as the main motivation for sport participation (Wold & Kannas, 1993). Competition and achievements are not rated as important reasons for liking sport, with older pupils seeming to attach more importance to sport being fun. Winning and achieving better skills in sport seem to decrease in importance as pupils grow older. These findings imply that health promotion programs aimed at increasing the level of physical activity among children would be more effective if physical activities and games emphasizing cooperation, fun and sharing, and simply becoming more active were designed and promoted (Sallis & Faucette, 1992).

Figure 3.7 Students who played computer games at least four hours a week* (%)



* *Slovakia did not include this item.*

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

Findings of the 1985-86 HBSC survey indicate that adolescent participation in leisure-time physical activity is influenced by the combined effects of their experiences at home, at school and with peers (Wold et al., 1994). Such findings imply that knowledge concerning the direct influences of parents, peers and schools, as well as knowledge concerning how these factors act together should be used as a basis for constructing exercise interventions.

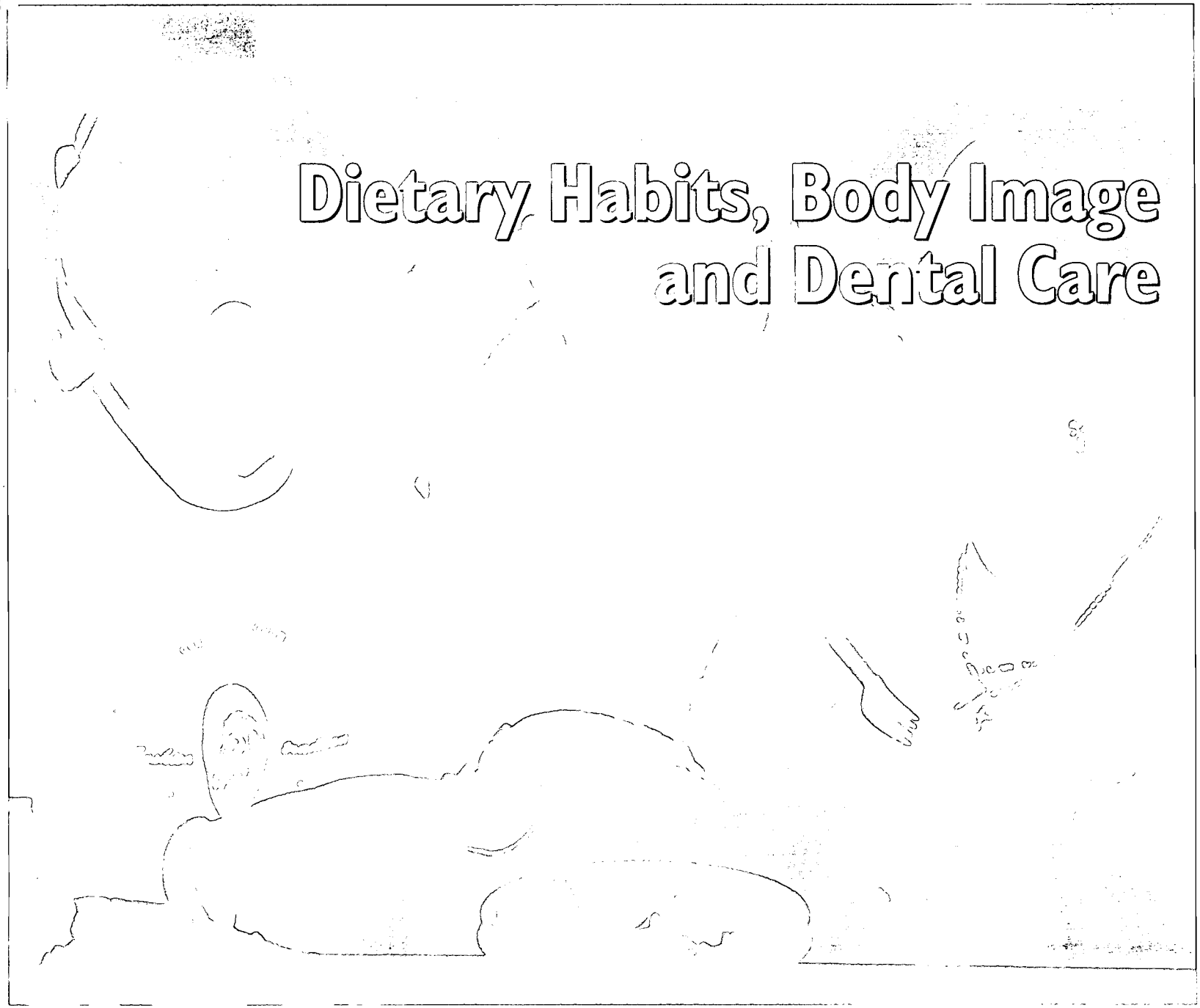
Several studies have shown that families influence the physical activity of young children and adolescents (Anderssen & Wold, 1992; Wold & Anderssen, 1992). Therefore, one way to encourage young people to be active is to promote physical activity among parents.

Children experience many of the same barriers to physical activity that adults complain about (Dishman et al., 1985). Adults often say that they do not have time for exercise, but there are also powerful competitors for the time children might devote to exercise. Many children have music classes, tutoring, chores or other activities after school that make it difficult for them to find regular times for physical activity (Sallis & Faucette, 1992). The findings presented here show that sedentary activities like watching TV programs and VCR movies are popular activities among children and adolescents, although not a major cause for concern at this time, but if the time spent on these types of activities increases, the involvement of youth in leisure-time physical activity is likely to decrease.

The greatest resource for promoting physical activity is physical education in school (Sallis & McKenzie, 1991). Unfortunately, many schools have failed to provide the students adequate time for such programs (Ross et al., 1987). According to Sallis & Faucette (1992), observations of physical education classes indicate that students' activity levels are usually quite low. A number of studies has shown that attempts to implement school-based, health-related interventions have been quite successful (Biddle & Mutrie, 1991). However, the most successful projects to date seem to be those that apply the greatest number of strategies in the most settings directed at the appropriate target groups (Powell et al., 1991). Results from the Class of 1989 Study, part of the Minnesota Heart Health Program, also suggest that multiple strategies can produce lasting improvement in adolescent physical activity, particularly among girls (Perry et al., 1994).

CHAPTER 4

Dietary Habits, Body Image and Dental Care



Canada

CHAPTER

4

Dietary Habits, Dental Care and Body Image

A. Introduction

Sound nutritional practices have been clearly demonstrated to contribute to physical and emotional well-being and a long healthy life. It is during adolescence that patterns of food choice are established. Most countries have developed nutrition recommendations for sound dietary habits, which focus on the importance of a diet that includes a variety of foods and include the following:

- fibre content, e.g., breads and other grain products, vegetables and fruits;
- lower-fat dairy products, leaner meats and foods prepared with little or no fat;
- a limited amount of salt and alcohol.

While adolescents are at an age where they could develop healthy eating habits, external pressures can influence them to choose foods that do not promote growth and development and do not help them maintain a healthy body weight. For example, many young people frequently go to fast food restaurants with friends and frequent indulgence in fast foods can contribute to an excessively fatty diet. Many students are concerned that their weight and appearance conform with popular images; concern about weight and appearance can lead to anorexia and bulimia. Even social class background can influence food choice and family income can affect the type and quality of food available at home.

The items on food habits included in this survey sought information on frequency of consumption and not quantities consumed, making it difficult to assess the quality of the diet of those surveyed. However, the questions were ordered based on whether the foods in question can be generally considered beneficial to good health because they provide fibre, vitamins and cancer-fighting benefits (fruit, vegetables, low fat milk, whole wheat breads) or harmful to good health because they are high in fat, cholesterol, salt and sugar.

Such a categorization of foods has been employed in analyses of previous HBSC data (Nutbeam et al., 1991; Aarø et al., 1995; King

Spain

& Coles, 1992). The results indicate that consumption of healthy foods is part of a health-enhancing lifestyle, while consumption of unhealthy foods is related to other health-risk behaviours such as alcohol abuse and smoking. Thus, the food items in this survey may be better perceived as indicators of health-related lifestyles rather than comprehensive measures of healthy or unhealthy diets.

Students indicated how often they eat or drink each listed food item by choosing one of the following five responses: more than once a day; once a day; at least once a week, but not daily; seldom and never. The description of some food items varied from one country's questionnaire to another. Data from countries that defined specific foods differently from the standard questions were omitted from the analyses.

To interpret the findings it is necessary to make judgments about the availability of the foods in various countries. For example, typical high fat foods such as hamburgers and hot dogs are not equally available in all of the participating countries. Differences between countries may therefore reflect differences in availability or other cultural variations, rather than the students' attempts to choose healthy foods.

To learn about dental hygiene the respondents were asked how often they brush their teeth and how often they use dental floss. In this chapter we discuss fully only the item about brushing because flossing is not viewed as a health priority in some countries.

Several questions were asked related to the issues of dieting behaviours and how young people perceive their appearance. The students' responses are summarized and examined in this chapter. Interpretation has been cautious in light of differences across countries in availability and types of food and in attitudes toward ideal weight and appearance.

B. Nutritious foods

For this analysis, it was assumed that students ate in a nutritious manner if they consumed fruits, vegetables, low fat milk and whole grain breads on a daily basis, while at the same time limiting their consumption of chocolate and candy, sugary soft drinks, potato chips/ crisps, hot dogs and hamburgers. Below is a discussion of the frequency with which students ate a representative group of these foods.

I. Fruits and vegetables

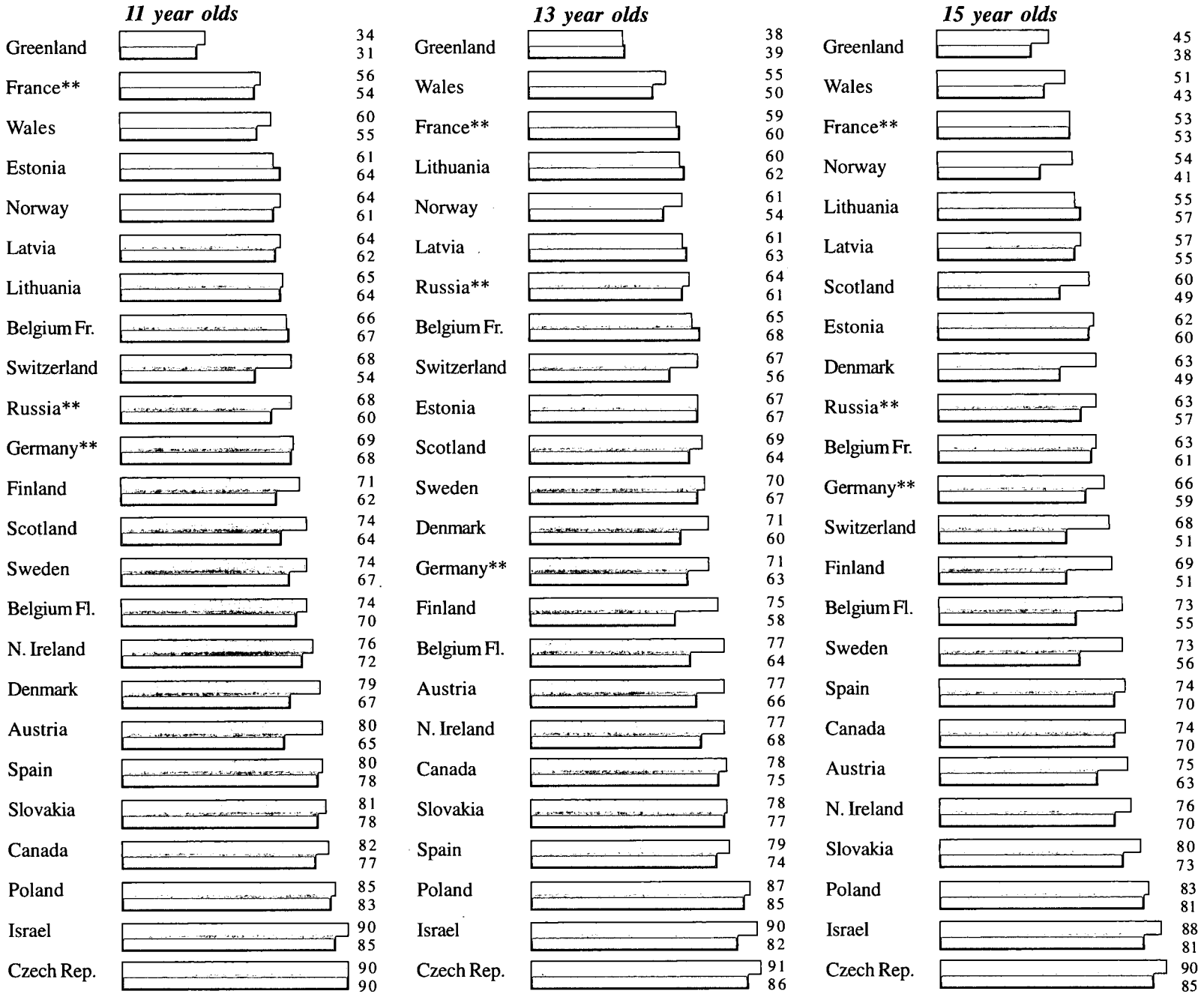
For decades, nutritionists have asserted that daily consumption of fruit is essential in maintaining a general state of health. Eating two to three servings of fruit per day can also reduce the risk of certain nutrition-related diseases. Many fruits provide adequate amounts of both soluble fibre and insoluble fibre. Soluble fibre, which is only partially digested, plays a role in regulating blood-sugar levels and may be helpful in reducing blood cholesterol. Apples, strawberries and citrus fruits are some of the best sources of soluble fibre. Insoluble fibre, also known as roughage, is not digestible and may be helpful in preventing certain types of cancers (Harris & Ferguson, 1993). Fruits are also important sources of vitamins A and C. These vitamins are necessary in maintaining healthy skin and bones. Recent studies have indicated that consumption of foods containing vitamins A, C and E appear to have an anticarcinogenic effect (Burnstein, 1993).

There was a wide variation in the percentages of respondents who ate fruit every day, ranging from a low of 31 percent for 11-year-old Greenlandic males to a high of 91 percent for Czech 13-year-old females (Figure 4.1). In most countries, higher proportions of girls than boys of the same age reported eating fruit daily. For both genders, in many countries, fewer 15 year olds than 11 year olds said they ate fruit at least once every day. The decreases were more pronounced for boys than girls. Only in Greenland were there increases in the proportion of students who ate fruit between ages 11 and 15, although the overall consumption by Greenlandic youth was much lower than in any other country. This may be explained by the difficulty and cost of purchasing fresh fruit in Greenland.

Raw vegetables are a good source of dietary fibre and vitamins. Dark green and deep yellow-orange vegetables, in particular, are rich in vitamins A and C. Vegetables, such as broccoli, cabbage and turnip, are an abundant source of vitamins and minerals as well as of dietary fibre which may be linked to the prevention of specific cancers.

Generally, fewer than half of the students and slightly more girls than boys ate raw vegetables daily. In Israel three-quarters or more of the students in each age group ate raw vegetables daily, far more than in any other country. Very few Welsh boys reported doing so. There was little consistency across age groups of the country rankings in terms of the proportions who ate raw vegetables at least daily.

Figure 4.1 Students who ate fruit once a day or more often* (%)



* *Hungary did not include this item.*

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

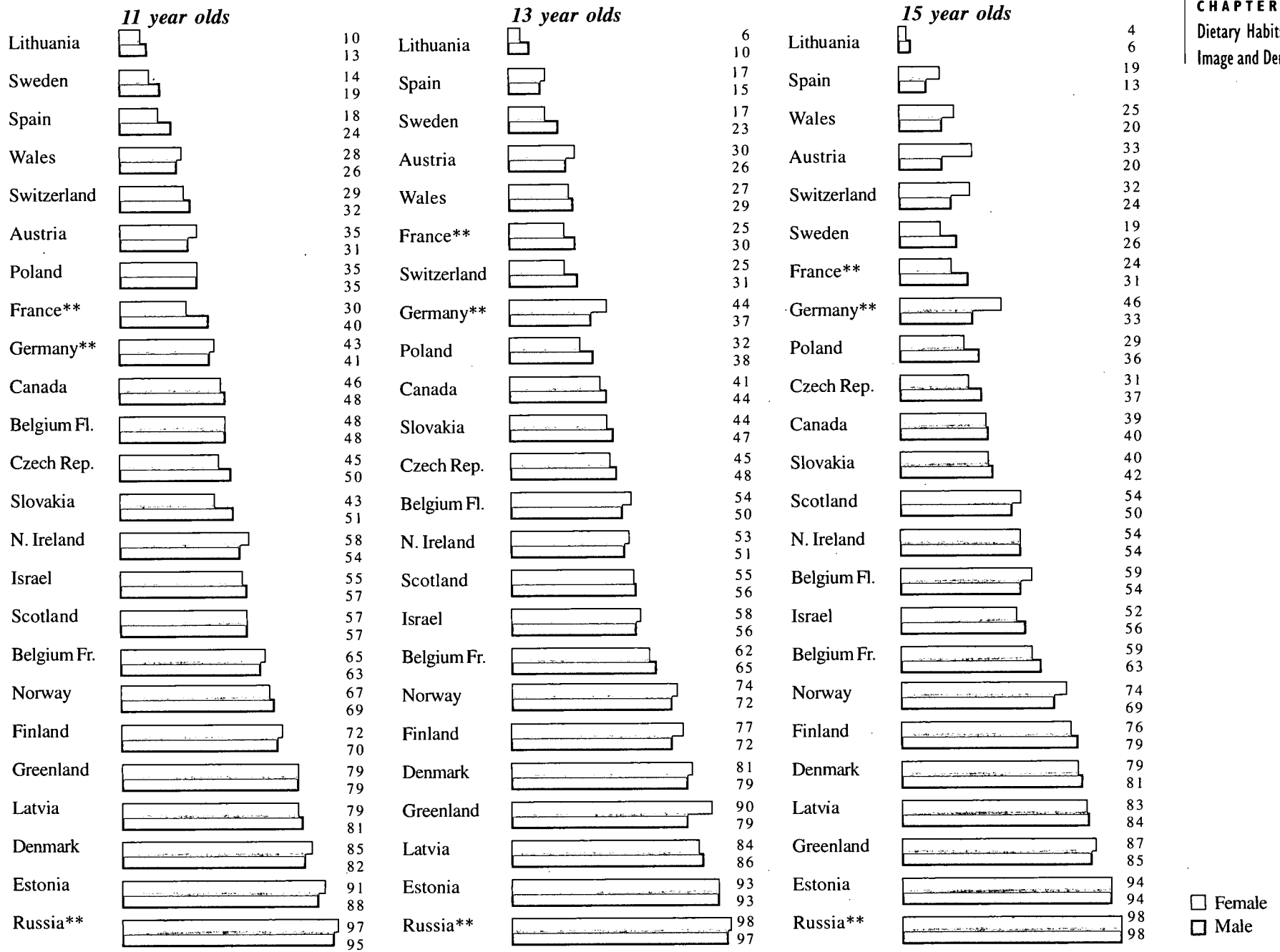
2. Whole wheat and rye breads

Whole grain products, such as whole wheat and rye breads, constitute important sources of insoluble dietary fibre and are healthy substitutes for foods high in fat. Epidemiological studies suggest that high daily fibre intake is associated with low incidence of colon and rectal cancer, but it remains unclear whether the protective mechanism results from the fibre either acting directly on colonic carcinogens or indirectly through the process of absorption and fermentation (Harris & Ferguson, 1993).

An excellent source of fibre is whole grain products, such as whole wheat bread and rye bread. Figure 4.2 shows the number of respondents who indicated they ate whole wheat or rye bread daily. The proportion of males and females who reported that they ate whole wheat or rye bread at least daily was quite similar. For 11 year olds, only in France and Slovakia did substantially more boys (10 and 8 percent respectively) say they ate whole grain bread every day or more often. There were not large differences between 13- or 15-year-old boys and girls either; in Greenland 11 percent more of the 13-year-old girls than the boys ate fibre-rich bread and in Austria and Germany 13 percent more 15-year-old girls than boys did so.

However, there are large differences across countries in the proportions of young people who reported eating these types of bread daily. This may, in part, reflect differences, determined by cultural factors, in the types of bread available. Whereas in the Russian Federation almost all students ate whole grain bread at least once a day, an extremely small percentage of Lithuanian students reported doing so. In Denmark, Estonia, Finland, Greenland and Latvia large proportions of students consistently said they eat fibre-rich bread every day, but substantially fewer in Austria, Spain, Sweden, Switzerland and Wales tended to eat whole grain bread.

Figure 4.2 Students who ate whole wheat or rye bread once a day or more often* (%)



* *Hungary did not include this item.*

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

C. Non-nutritious foods

The cornerstone of healthy eating is to achieve a balance between eating sufficient amounts of essential nutrients needed to enhance good health without compromising these benefits by eating excessive amounts of any one nutrient, such as fat or sugar. While it is important to eat a varied diet, consumption of non-nutritious foods should be kept to a minimum. In this discussion of non-nutritious foods, emphasis is placed on hamburgers and hot dogs, sweets and soft drinks because these foods are recognized by nutritionists as being especially high in fat and sugar, thus offering little nutritive value.

I. Hamburgers and hot dogs

Although hamburgers and hot dogs satisfy some of the requirements of the meat and meat alternates food group, these particular meats are high in animal (saturated) fat. In some countries, the list included sausage, which may have been interpreted differently across countries. No differentiation has been made in this discussion. Occasional use of such food items is not considered harmful, but daily consumption would increase fat intake to a higher than recommended level. Moreover, this type of food is typically regarded as fast food, and may often be consumed between or instead of regular meals.

Few respondents ate only one type of non-nutritious food. As shown in Figure 4.3, students who ate hamburgers and hot dogs were more likely to eat other unhealthy foods as well. Except for 15-year-old girls, students who ate hamburgers and hot dogs often, spent time in the evenings with friends. Thirteen-year-old boys, along with 11-year-old boys and 13-year-old girls tended as well, to spend time watching videos and/or playing computer games, suggesting that they may not be spending very much time exercising.

Figure 4.3 Factors associated with eating hamburgers/hot dogs

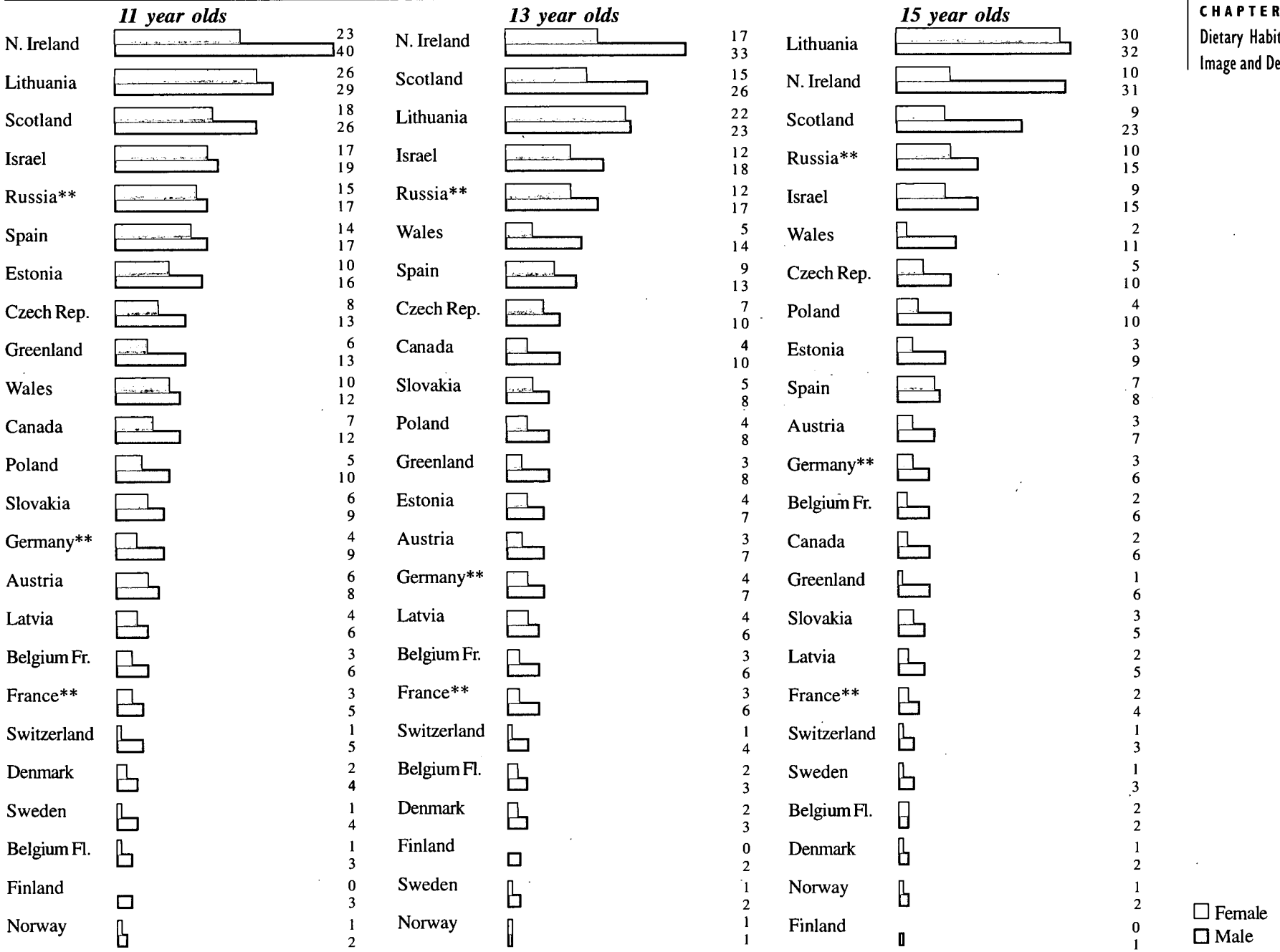
Students who eat hamburgers/ hot dogs are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Eat potato chips	◎	○	◎	○	○	○
Eat french fries	○	○	○	○	○	○
Drink sweet soft drinks	○	○	○	○	○	○
Eat candy/chocolate bars	○	○	○	○	○	○
Spend evenings with friends	○	○	○	○	○	—
Play computer games	○	—	○	—	—	—
Watch videos	—	—	○	○	—	—

Correlation coefficient: ○ .15 to .19 ○ .20 to .29 ○ .30 to .39 ○ .40+

In most countries, few respondents ate these products every day except Northern Ireland, where one-third or more of the boys in each age group (40% of 11 year olds) said they eat hamburgers and/or hot dogs every day and Lithuania, where approximately one-quarter or more of both boys and girls ate these meats regularly (Figure 4.4). The lowest proportions reporting that they ate hamburgers and hot dogs at least once a day or more were in Belgium (Fl.), Switzerland and the Scandinavian countries. Almost no Finnish girls ate these meats as frequently as once a day.

There were slight gender differences in the students' fast food eating habits. In almost all countries, boys ate more fatty and non-nutritious food than girls, and there is no country in which the amount eaten by girls surpasses that of the boys. Age does not seem to play an important role in determining patterns of consumption of these foods. In some countries, the intake of hamburgers and hot dogs increases with the adolescents' age, while in other countries it stays the same or even diminishes.

Figure 4.4 Students who ate hamburgers or hot dogs once a day or more often* (%)



* *Hungary did not include this item.*

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

2. Sweets and soft drinks

Young people are often habitual consumers of foods notoriously high in sugar, namely candy and chocolate bars. Although dietary sugar supplies the body with quick-release food energy, too much caloric input can result in weight gain. Chocolate bars, in particular, are nutritionally deficient because they are high in both fat and caffeine. High dietary fat intake is positively correlated with obesity and increased risk of heart attack, stroke and specific types of cancer. Because caffeine is also found in other food products such as coffee, tea and colas, it is important to minimize chocolate-bar consumption in conjunction with these items so as not to exceed daily recommended levels of caffeine.

Figure 4.5 shows the percentage of students who ate candy or chocolate bars or sweets at least once a day. Of all respondents, youth in Northern Ireland and Scotland reported eating sweets most frequently. Far fewer students in Finland, Norway and Sweden ate sweets regularly. Only 8 percent of Norwegian 11-year-old girls ate sweets once a day or more often, whereas 71 percent of Israeli and Scottish girls of the same age reported this pattern.

In many countries taking part in this survey, 11-year-old children seemed to eat sweets less often than did students in the other age groups. This may be because younger children have less spending money and parents may have more influence over the diets of their younger children. For the most part, the consumption of sweets differed to a small extent by gender, but there were differences of between 8 and 12 percent by age 15 in seven countries. However, there was no consistency in which gender reported eating sweets most often.

Soft drinks such as colas or lemonades are frequently taken with fast food such as hamburgers and hot dogs. The countries with the highest proportion of students drinking soft drinks at least daily were essentially the same as those for sweets, mainly Israel, Northern Ireland and Scotland. For the most part, more boys drank soft drinks every day than girls and it is remarkable to note that, by age 15, over 60 percent of the boys in six countries were doing so. The highest incidence for all ages and both genders occurred in Northern Ireland.

Figure 4.5 Students who ate candy/chocolate bars once a day or more often* (%)

* *Hungary did not include this item.*

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

D. Dental care

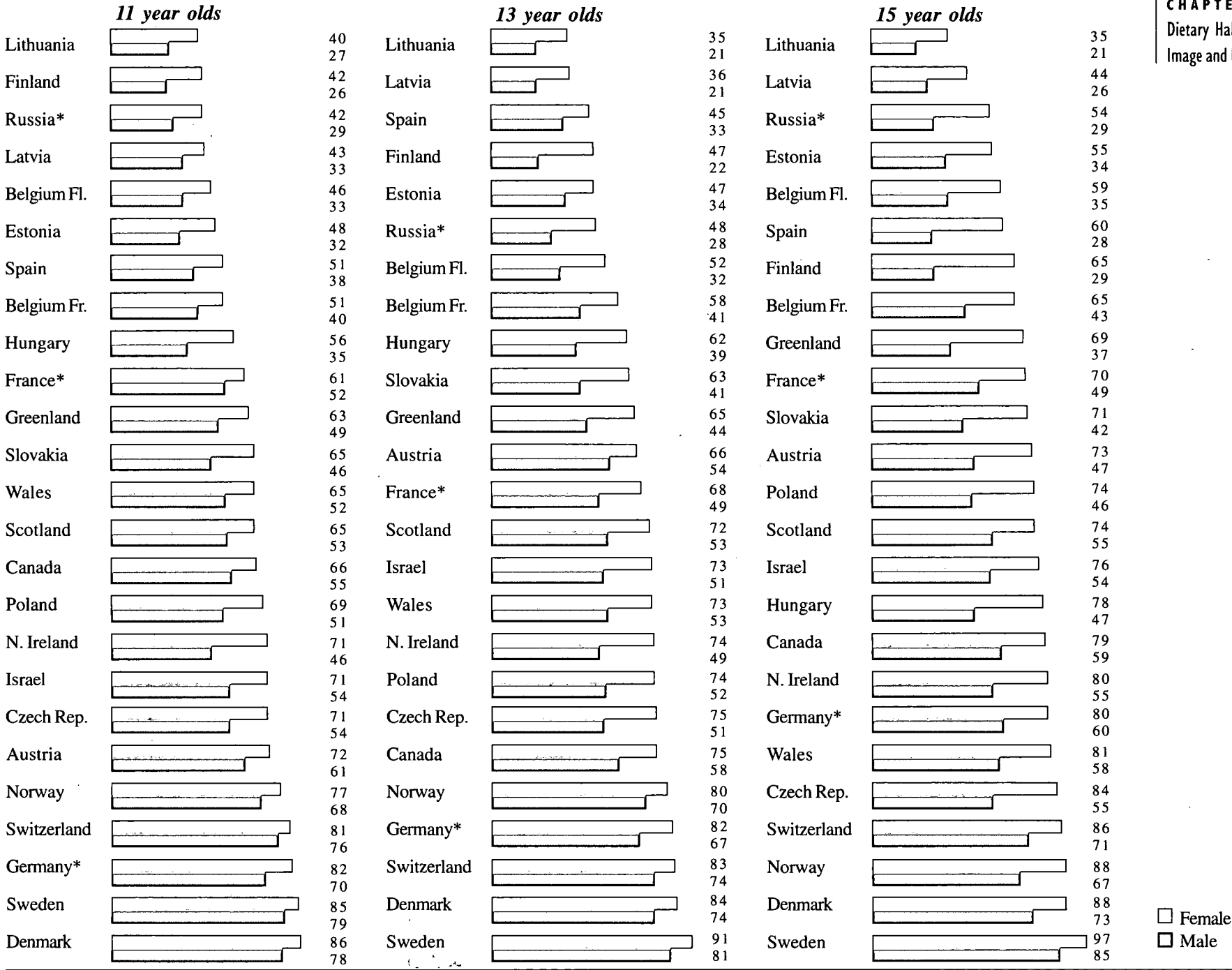
It has long been established that sugar intake in young people's diets can lead to dental cavities, poor nutrition and obesity (Rogers & Morris, 1986). Good tooth-brushing habits and preventive dental hygiene, such as using dental floss regularly, can offset the effects of excessive amounts of sugar on dental health. However, some researchers have suggested that students are more likely to be motivated by social reasons to brush their teeth regularly than to be motivated by concerns of disease prevention. Findings indicated that regular brushing was most often associated with wanting to have fresh breath (MacGregor, 1994).

Students were asked to indicate how often they brush their teeth using the following response categories: more than once a day; once a day; at least once a week but not every day; less than once a week; and never. They were also asked how often they use dental floss: daily; weekly; seldom; or never.

As shown in Figure 4.6, overall there was a wide range across countries in the proportions of students who brushed their teeth more than once a day – from 21 to 85 percent for boys and 35 to 97 percent for girls. Lithuanian boys and girls brushed their teeth the least; Swedish youth brushed the most frequently with the proportions increasing as they got older. Eighty-five percent of Swedish 15-year-old boys and 97 percent of the girls brushed their teeth more than once a day. In all countries and age groups, girls brushed their teeth much more frequently than did boys. In ranking the countries by female responses, the countries in which students brushed the least and the most were similar across the three age groups.

In several countries one-third or more of the students did not know what dental floss is. However, even where no students indicated that they were not familiar with dental floss, very few used it. Only in Canada (females) and Russia (males and females) did more than one-half of them say they flossed at least weekly.

Figure 4.6 Students who brushed their teeth more than once a day (%)



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

E. Dieting

Dieting to lose weight or concern about their weight is directly associated with how students feel about themselves. Young people become extremely self-conscious during adolescence, and most students who are dieting or feel the need to lose weight are expressing serious concern about their appearance. Some young people may not accept the standard norms of appropriate weight for their age and height because they are influenced by media images of slim, beautiful women and muscular, handsome men. Cultural definitions of beauty can also influence the perceptions young people have of their own body image (Wardle, 1993).

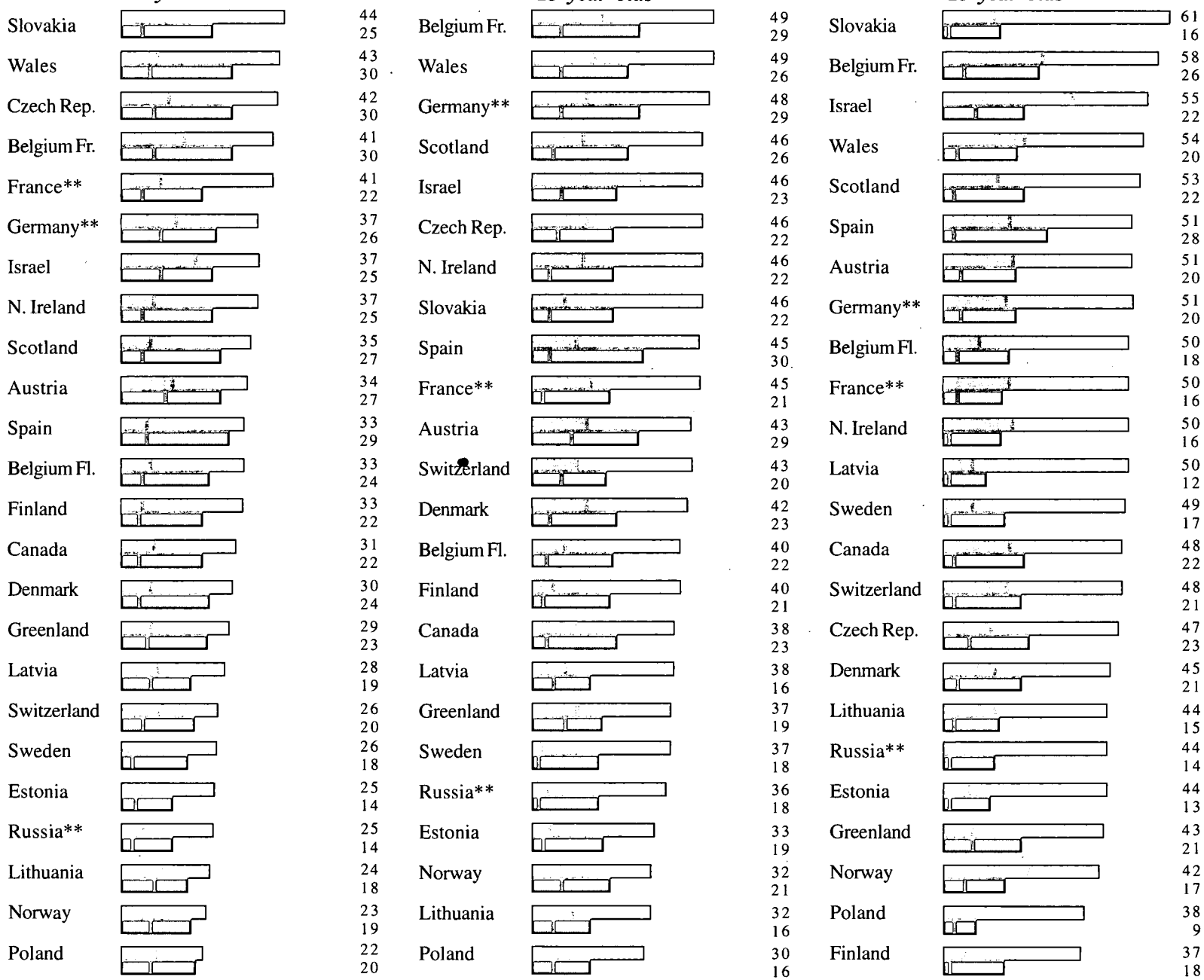
Research has shown that adolescent females are more likely than males to perceive themselves as fat and to engage in eating behaviours, such as binge eating, fasting and excessive physical exercise to control body weight, which can result in bulimia nervosa or anorexia nervosa (Mikow, 1995; Levine et al., 1994.). Youth who develop unhealthy eating behaviours due to distorted perceptions of body weight and physical attractiveness suffer considerable psychosocial distress characterized by feelings of loneliness and hopelessness (Page, 1991). They are also at increased risk of developing health problems due to nutritional deficiencies.

Students were asked if they were on a diet to lose weight. Their response choices were: No, because my weight is fine; No, but I do need to lose weight; and Yes. Incidence of dieting and attitudes toward weight are summarized in Figure 4.7. In all countries the majority of 11- and 13-year-old students were satisfied with their weight, but this was not the case among 15 year olds. The most obvious pattern in responses to this item regarding dieting and students' concern about their weight was the gender differences noted. In every country and for each age group surveyed, the proportion of girls dieting or who felt that they should be on a diet was substantially higher than for boys and increased significantly with age. Twenty-two to 44 percent of the 11-year-old girls were concerned about their weight, but 30 to 49 percent of 13-year-old girls were, and by age 15, 37 to 61 percent of the girls were either on a diet or thought they should be. Boys, on the other hand, tended to be less concerned about their weight by the time they reached 15. Girls in Belgium (Fr.), Israel, Slovakia and Wales and boys in Belgium (Fr.), the Czech Republic, Scotland and Spain were among the most likely to be dieting or conscious of their weight. Students in Estonia, Lithuania, Norway, Poland and Russia tended to rank among the least likely to diet or to say they need to lose weight.

Few boys of any age said they were actually dieting with the highest percentages being among 11 year olds: over 10 percent of them in three countries indicated they were dieting. By age 13, the only incidence of 10 percent dieting was for boys in Austria; less than 10 percent of 15-year-old boys in all countries indicated that they were on a diet. The figures for girls were much higher – at age 11 more than 10 percent of the girls in 10 countries were dieting, with Israeli girls at 20 percent. By age 13 and 15, over 10 percent of the girls in 17 countries said they were on a diet and again, Israeli girls reported the highest incidence at 29 percent at age 13 and 35 percent at age 15.

Boys were generally more likely to feel the need to diet or think they needed to lose weight when they were younger (age 11) than older (age 15). It may be that older boys feel the need to be more muscular which involves weight gain.

Figure 4.7 Students who were on a diet or felt the need to lose weight* (%)



* *Hungary did not include this item.*

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

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F. Appearance

Physical appearance is very important to adolescents as they cope with the changes associated with becoming mature adults. Physical appearance was valued more than any other "lifestyle factor" considered in the Minnesota Heart Health Youth program and its importance increased with age (Prokhorov et al., 1993). As well, those who see themselves as unattractive in the generally or culturally accepted definition of the term have been shown to suffer various types of psychosocial distress. Page (1991) found that adolescents who believed their weight placed them outside the "good looking" category experienced more feelings of loneliness, helplessness and shyness. Society has tended to emphasize female more than male attractiveness and studies show adolescent girls to be less satisfied with their body than their male counterparts (Rodriguez-Tomé et al., 1993; Richards et al., 1990; Çok, 1990). Data from this survey tend to corroborate these findings: adolescents who believe they are not good looking were more likely to be unhappy and to feel lonely and depressed (Figure 4.8). The converse – those who thought they were good looking tended to feel confident and happy – was also found to be true (Figure 4.9).

The factors associated with an affirmative response to the question, Is there anything about your body you would like to change? aside from reinforcing data showing the prevalence of perceptions of excess body weight among adolescents, indicate the critical role personal appearance plays in the lives of young people. Thirteen-year-old boys dissatisfied with something about their appearance were vulnerable to feelings of unhappiness, loneliness, depression, helplessness and to feeling like an outsider. Respondents in each of the other age and gender groups, were likely to suffer one or more of these problems. Eleven- and 13-year-old girls were likely to have a negative attitude toward school and poor communication with their parents.

Figure 4.8 Factors associated with wanting to change something about their body

Students who want to change something about their body are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Say they need to lose weight	O	O	O	O	O	O
Be dissatisfied with their appearance	O	O	O	O	O	O
Feel like an outsider	O	O	O	O	O	–
Not be happy	O	O	O	O	O	O
Feel lonely	O	O	O	–	O	–
Feel depressed	O	O	O	O	–	–
Be irritable	O	O	O	O	–	–
Feel helpless	O	O	O	O	–	–
Feel nervous	O	O	–	–	–	–
Have a negative attitude towards school	–	O	–	O	–	–
Have poor communication with parents	–	O	–	O	–	–

Correlation coefficient: O .15 to .19 O .20 to .29 O .30 to .39

Figure 4.9 Factors associated with thinking they are good looking

Students who think they are good looking are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Feel confident	O	O	O	O	O	O
Be well-integrated socially	O	O	O	O	O	O
Feel happy	O	O	O	O	O	O
Not want to change anything about their body	O	O	O	O	O	O
Feel healthy	O	O	O	O	O	—
Believe their family is well off	O	O	O	O	O	—
Not feel helpless	—	O	O	O	O	O
Achieve well in school	O	O	O	O	—	—
Have good communication with their parents	—	O	O	O	—	—

Correlation coefficient: O .15 to .19 O .20 to .29 O .30 to .39

Adolescents who responded they are very/quite good looking from a series of response alternatives (very good looking, quite good looking, about average, not very good looking, not at all good looking, I don't think about my looks) were more likely to feel confident, be well-integrated socially and feel happy. For younger students feeling good looking was related to doing well in school, and for 11-year-old girls and 13 year olds, it was related to being able to communicate more easily with parents.

In almost all countries, the proportion of students who would like to change something about their body increased with age (Figure 4.10). These findings also confirm those from studies showing distinct gender differences on this issue. In almost all age groups and all countries more females than males responded yes; in fact, by age 15, more than 70 percent of the girls in every country except Greenland did so. In contrast, the vast majority of students indicated that they considered themselves average looking.

In response to whether they felt their body was too thin, too fat or about right, more males than females said about right. Overall, more students said they were a bit too fat than said they were too thin; however, more boys than girls thought themselves too thin and more girls a bit too fat. By age 15, there were substantial differences between the genders in both the a bit too fat and much too fat response categories which, of course, is consistent with the gender differences on dieting behaviour.

G. Summary

As would be expected, the findings indicate major differences between the countries with respect to reported consumption patterns for the selected food items. Since the items included in this survey are not intended to measure the quality of the diet of respondents, it is virtually impossible to make sound conclusions about the appropriateness of the various foods eaten by young people in different countries. However, the findings do have some important implications for educational programs in nutrition, as well as for more general health promotion for youth. In general, girls seem to adopt healthier food habits than boys with more eating the healthy foods and fewer eating the less nutritious foods. These findings are consistent with those from more detailed dietary surveys in other studies of populations of young people (Andersen et al., 1995).

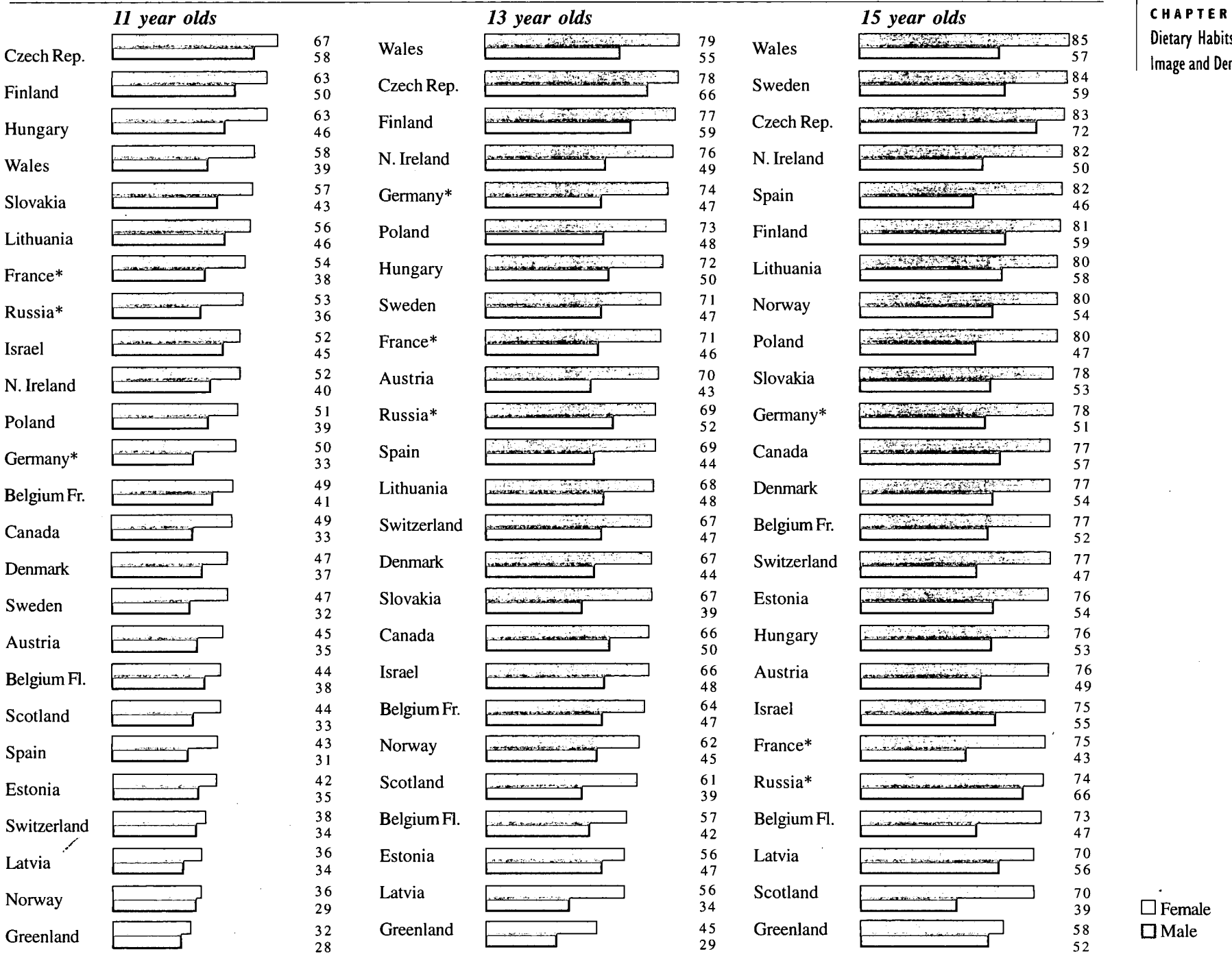
Dieting habits and concern about weight appear to be more of a problem for girls than for boys. More 15-year-old girls are on a diet or think they should be than 11-year-old girls and the margin between the responses of boys and girls increases substantially between 11 and 15 years of age.

Although many students, especially girls, wanted to change something about their body, most felt they were average or good looking or said they did not think about their looks at all.

The dental habits of girls tend to be more positive than those of boys. Thus, boys seem to constitute a vital target group for programs to improve both food habits and dental hygiene.

The results suggest a negative development of eating habits with increasing age. The diet of 15 year olds surveyed was less nutritious than that of younger students. During the years between age 11 and 15, there is a marked change in the settings in which the food choices of young people occur. Often, parents strongly influence what their young children eat: they purchase and prepare food, regulate meals and general schedules and control available spending money. However, these parental influences decrease as parents and children spend less time together. Peers seem to have a strong impact on children's food choices outside the home (Klepp et al., 1990). Thus, the findings of this survey imply that efforts aimed at developing more healthy food habits should take into consideration the significance of youth cultures. However, the most commonly used arena for promoting healthy diets is school. Since students spend extensive time in school this setting is ideal for reaching them with nutrition education and for modelling sound nutrition principles (Dwyer & Bourgeois, 1992). A number of nutrition education studies suggest that school-based educational programs may be effective in influencing adolescents to choose a healthier diet (Stone et al., 1989; Klepp & Wilhelmsen, 1993).

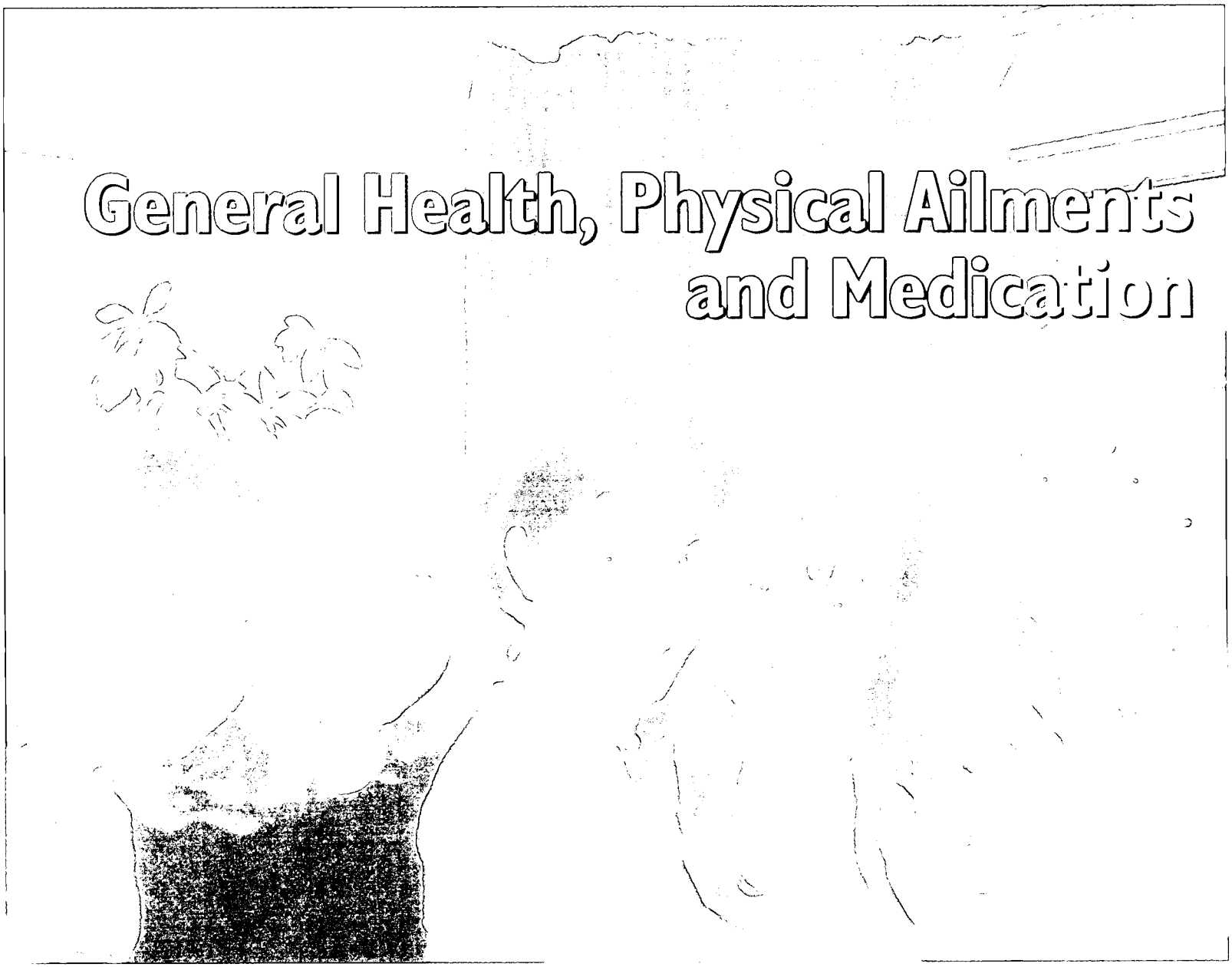
Figure 4.10 Students who responded yes to "Is there anything about your body you would like to change?" (%)



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

CHAPTER 5

General Health, Physical Ailments and Medication



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CHAPTER 5

General Health, Physical Ailments and Medication Use

A. Introduction

The period of adolescence is characterized by rapid physical growth, significant psychological development and changes in personal relationships. It is not surprising that the physical ailments of young people often originate from the stress and anxiety they experience in other areas of their lives. Stress-related symptoms caused by muscular tension frequently take the form of recurrent headaches, abdominal pain and dizziness.

Although there has been a limited amount of research on the relationship between sleep disturbance and depression and anxiety in young people, they are associated, though to a lesser extent than is the case among adults. There are also strong links between sleep disturbances and the quality of psychosocial relationships. Insomnia has been found to be related to fear of school and worry about other school-related matters. In other studies, headaches among young people have been associated with mental stress and a generally low perception of health. Recurrent abdominal pain (RAP) has also been widely recognized as a psychosomatic response to stress (Montgomery, 1994; Kaiser, 1992; Wright & Wright, 1992; Sharrer & Ryan-Wenger, 1991).

Although it is difficult to determine to what extent the physical ailments described here are psychosomatic, they do represent to some extent the outcomes of certain stresses that young people experience. In Chapter 9, the relationship between general health status and other aspects of students' lives (parent and peer relationships, alcohol and drug use, physical exercise and school experience) is considered.

In this chapter, how young people view themselves both in terms of their general health and the specific types of physical ailments they experience is discussed. The extent to which they use medication to treat the symptoms of these ailments is also examined. It is important to keep in mind that the vocabulary of young people and how they interpret various health-related terms strongly influences their responses to the relevant questionnaire items.

B. General health

Respondents gave an indication of their perception of their general health by describing themselves as very healthy, quite healthy or not very healthy. Responses to the question "How often do you feel tired when you go to school in the morning?" added another dimension to this summary measure of health.

The findings presented in Figure 5.1 make a good case for the statement, "a sound mind resides in a sound body". An abundance of positive factors are associated with feeling healthy, including feeling happy and confident, being well-integrated socially and not being irritable. Most young people who feel healthy are not depressed, do not feel helpless and are satisfied with their appearance. With the exception of 11- and 15-year-old boys, healthy students tend not to have headaches. Eleven year olds have a positive attitude toward school, achieve well academically and believe, along with 13 year olds, that their family is well off. Thirteen-year-old girls and 15 year olds do not experience dizziness. Regular exercise is associated with feeling healthy for 15 year olds, especially the boys.

Figure 5.1 Factors associated with feeling healthy

Students who feel healthy are more likely to	*11 year olds*		*13 year olds*		*15 year olds*	
	M	F	M	F	M	F
Feel happy	O	O	O	O	O	O
Feel confident	O	O	O	O	O	O
Be well integrated socially	O	O	O	O	O	O
Not be irritable	O	O	O	O	O	O
Be satisfied with their looks	O	O	O	O	O	—
Not feel depressed	—	O	O	O	O	O
Not have headaches	—	O	O	O	—	O
Not feel helpless	—	—	O	O	O	O
Believe family is well off	O	O	O	O	—	—
Have a positive attitude toward school	O	O	—	O	—	O
Exercise regularly	—	—	O	—	O	O
Achieve well at school	O	O	O	—	—	—
Not feel dizzy	—	—	—	O	O	O
Not have stomachaches	—	—	—	O	—	O

Correlation coefficient: O .15 to .19 O .20 to .29 O .30 to .39

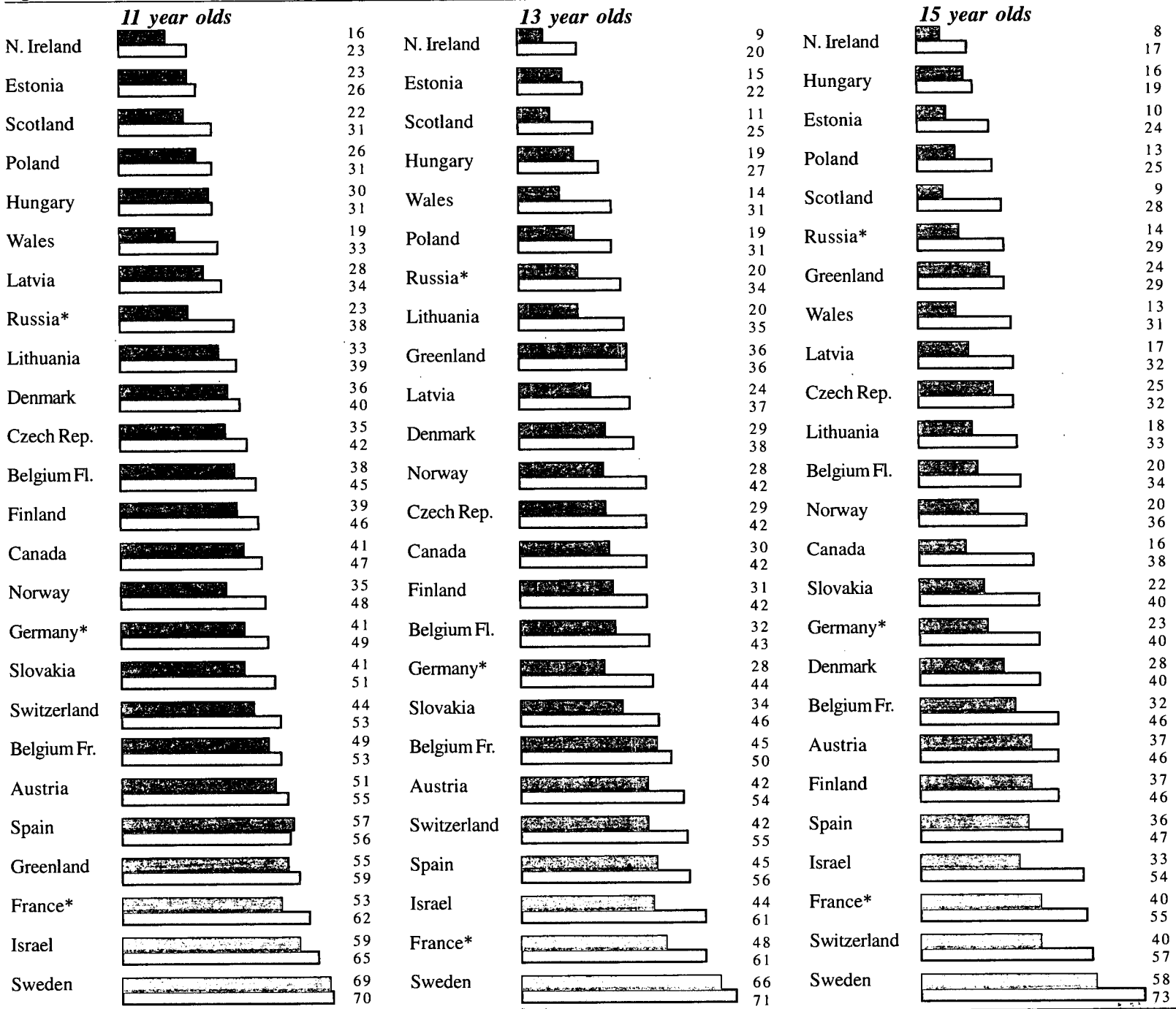
Although few students considered themselves not very healthy, the proportions of students who described themselves as very healthy varied widely from country to country (Figure 5.2). Swedish students, especially boys, were highly positive about their health while those in Northern Ireland were the least positive. Students from many eastern European countries – Estonia, Hungary, Latvia, Lithuania, Poland and Russia – were less likely than students from most other countries to feel very healthy. Conversely, more of the students in such disparate locations as Austria, France, Israel and Spain tended to feel very healthy.

Overall, boys were more likely than girls to indicate that they were very healthy, but this difference was more pronounced among the two older groups of respondents. Eleven-year-old boys and girls in Spain and Sweden, for example, were equally likely to feel healthy; however, substantially more of the 15-year-old boys than girls felt very healthy. In Canada, six percent more of the 11-year-old boys than girls said they were very healthy, but 22 percent more of the 15-year-old boys expressed this view.

Age as well as gender appeared to influence how healthy the students felt. In the majority of countries, the youngest group of students surveyed were more likely than both groups of older students to say they felt very healthy. It should be noted that by age 15, only in Sweden did more than 50 percent of girls feel very healthy and in only four countries – France, Israel, Sweden and Switzerland – did more than 50 percent of boys feel very healthy. This finding is supported by other health research (Connelly et al., 1993).

It is to be expected that students will occasionally feel tired when they go to school in the morning. However, chronic tiredness may be an indication of physical or emotional distress. Students who are in a constant state of fatigue may not perform well in school, not relate well to others or not feel like being part of extracurricular activities. Being physically tired in the morning may result from physical causes – hunger, a poor night's sleep, lack of exercise – or from mental distress, anxiety or depression. Later in this chapter, the proportions of students who frequently feel tired in the morning are compared with those who have difficulty getting to sleep.

Figure 5.2 Students who felt very healthy (%)



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

Figure 5.3 lists the main factors that are correlated with feeling tired in the morning. Significantly there is a relationship with liking school which may suggest that some young people feel tired in the morning because, for them, attending school is stressful. As one might expect feeling tired in the morning is directly related to having difficulty sleeping and the mental health problems of depression and irritability. It is also associated with physical health problems such as headaches, dizziness, stomachaches and backaches. Older youth who feel tired in the morning are more likely to have been drunk. For 11 year olds, there is a relationship between feeling tired in the morning and feeling unhappy and feeling like an outsider.

Austrian, Israeli and Scandinavian (especially 15-year-old Norwegians) students were more likely than other students to frequently feel tired in the mornings on school days (see Figure 5.4). Students in Greenland, Latvia, Lithuania, Poland and Spain were the least likely to feel tired four or more times a week. The range of responses from lowest to highest was substantial, between 4 and 34 percent for 11 year olds and between 3 and 50 percent for 15 year olds.

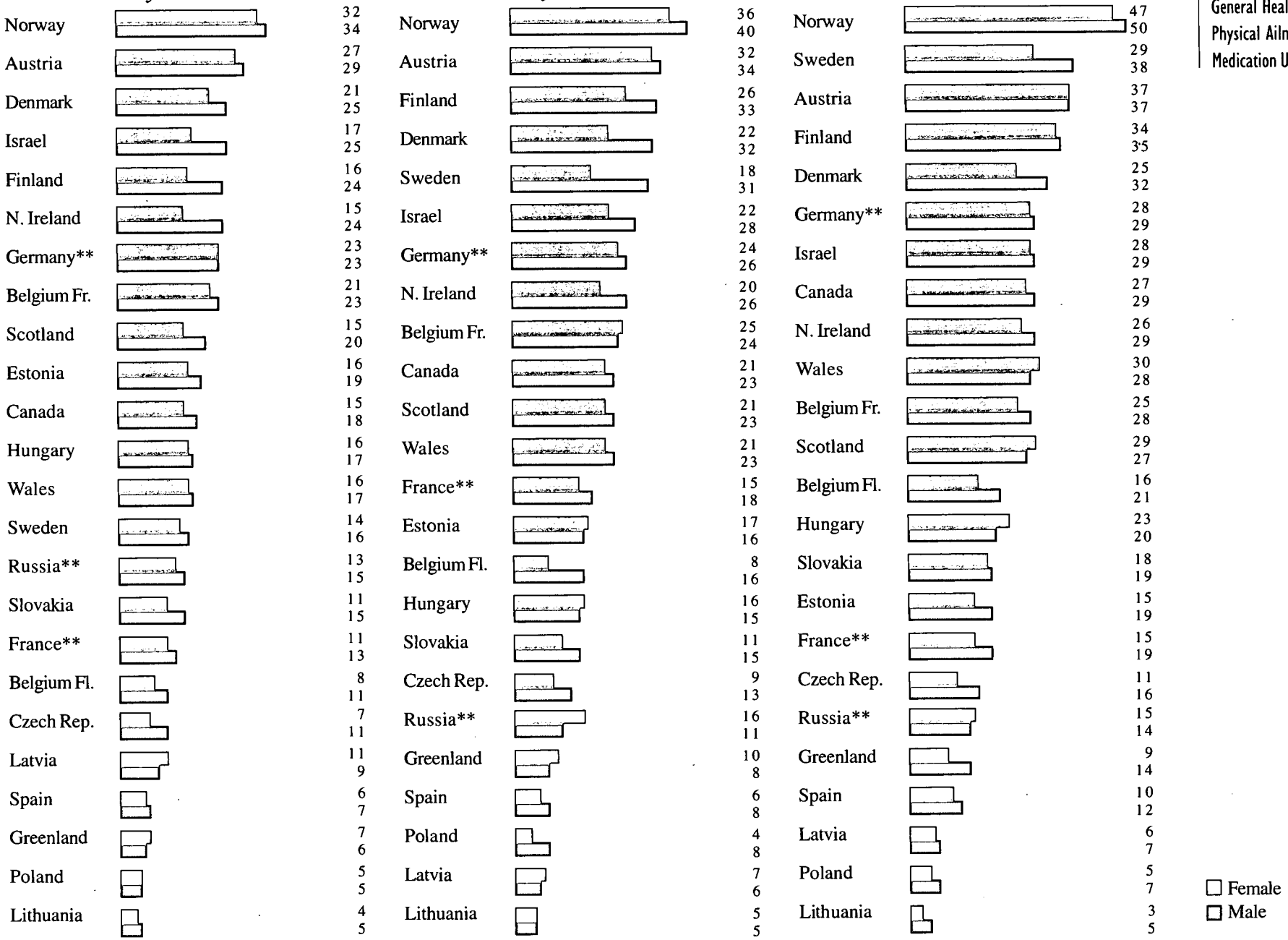
Generally more boys than girls felt tired at school frequently, but the differences in their responses were not large. Older students were more likely to report feeling tired when they went to school.

Figure 5.3 Factors associated with feeling tired in the morning

Students who are often tired in the morning are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Feel depressed	O	O	O	O	O	O
Be irritable	O	O	O	O	O	O
Have difficulty getting to sleep	O	O	O	O	O	O
Not like school	O	O	O	O	O	O
Have headaches	O	O	O	O	O	O
Have stomachaches	O	O	O	O	O	O
Feel dizzy	O	O	O	O	O	O
Have backaches	O	—	O	O	O	O
Feel stressed at school	O	O	O	—	O	O
Feel nervous	O	O	O	O	—	—
Have poor communication with their parents	—	O	—	O	O	O
Have been drunk	—	—	O	—	O	O
Be unhappy	O	O	—	—	—	—
Feel like an outsider	O	O	—	—	—	—

Correlation coefficient: O .15 to .19 O .20 to .29

Figure 5.4 Students who felt tired four or more times a week in the morning when they go to school* (%)



* *Switzerland did not include this item.*

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

C. Health problems

Health problems, such as headaches, stomachaches, backaches, dizziness or insomnia, among adolescents can be of organic origin or induced by stress. The frequency with which students have various aches and pains and other conditions, such as being in a bad mood and/or feeling nervous or dizzy, are useful general indicators of students' physical and emotional health.

Students were asked how often they had experienced these conditions during the previous six months: most days; more than once a week; about once every week; about once every month; and seldom or never. The proportion of males and females in each age group who reported that they frequently experience these health problems is presented and, in a later section, the proportion of respondents who indicated they had taken medication for these problems within the last month.

I. Headache

Headaches are a common complaint of young people in many parts of the world (Tynjälä et al., 1993; Kristjansdottier & Wahlberg, 1993). Research into the occurrence of childhood and adolescent headaches tends to focus on migraine headaches and there is some controversy over the incidence of tension headaches among young people. Eye strain, changes in weather, allergies, depression and a low level of physical activity have been associated with the onset of headaches in young people. Frequent headaches can affect many aspects of a young person's life and he or she may respond by not completing school work or avoiding challenging activities (Montgomery, 1994; Kaiser, 1992; Labbé, 1988).

Although survey data do not indicate a direct link to poor school performance, they show that the young people who complain of headaches are also more likely to have other physical problems such as stomachaches, backaches, nervousness and dizziness (see Figure 5.5). These symptoms are likely to have a negative influence on achievement and motivation. Such students are also more likely to be depressed and irritable. It is not surprising that they are less likely to feel healthy and are often tired in the morning. Girls who suffer from headaches also appear to be unhappy. The relationship with loneliness is worrisome and ambiguous: it may indicate either that the loneliness is contributing to health problems and/or the health problems are preventing some young people from fully integrating with their peers.

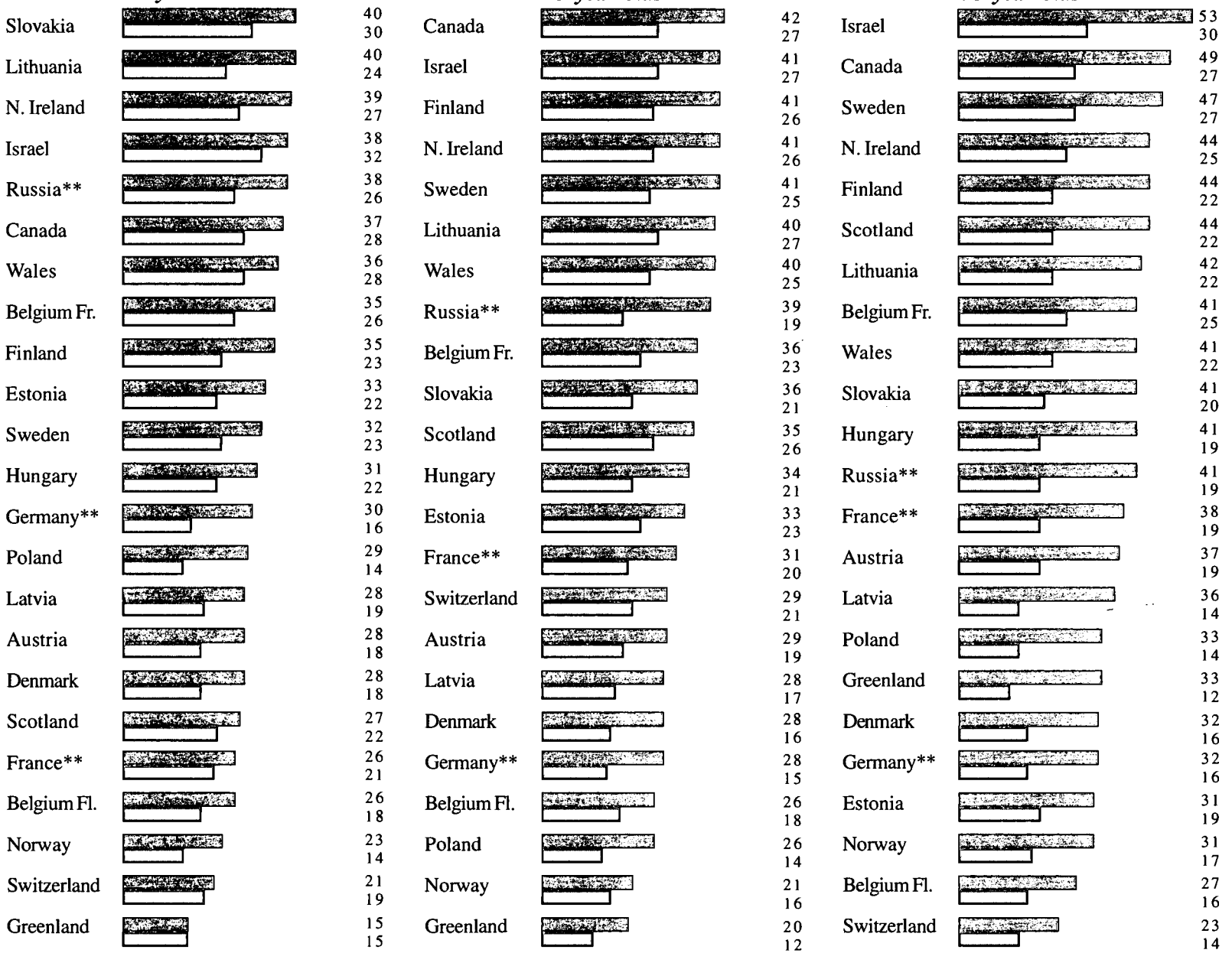
Frequent headaches were reported by a high proportion of students in several countries (Figure 5.6). In more than one-half of the countries between 30 and 40 percent of 11-year-old girls and between 20 and 30 percent of 11-year-old boys said they had headaches once a week or more in the previous six months. In all countries, except Estonia, there was an increase between age 11 and 15 in the proportion of girls who experienced headaches. For boys the figures were either lower by age 15 or remained relatively stable. Students in Canada, Finland, Israel, Northern Ireland and Sweden were more likely than those in other countries to have

Figure 5.5 Factors associated with having headaches

Students who often have headaches are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Have stomachaches	O	O	O	O	O	O
Feel dizzy	O	O	O	O	O	O
Be depressed	O	O	O	O	O	O
Have backaches	O	O	O	O	O	O
Be irritable	O	O	O	O	O	O
Feel nervous	O	O	O	O	O	O
Have difficulty getting to sleep	O	O	O	O	O	O
Be tired in the morning	O	O	O	O	O	O
Not feel healthy	—	O	O	O	O	O
Feel lonely	O	O	O	O	—	O
Not feel happy	—	O	—	O	—	O

Correlation coefficient: O .15 to .19 O .20 to .29 O .30 to .39

Figure 5.6 Students who had a headache once a week or more during the previous six months* (%)



* *Czech Republic and Spain did not include this item.*

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

headaches frequently. In many countries, girls were twice as likely as boys to report frequent headaches by age 15. The range of responses was also greater for girls than for boys.

2. Stomachache

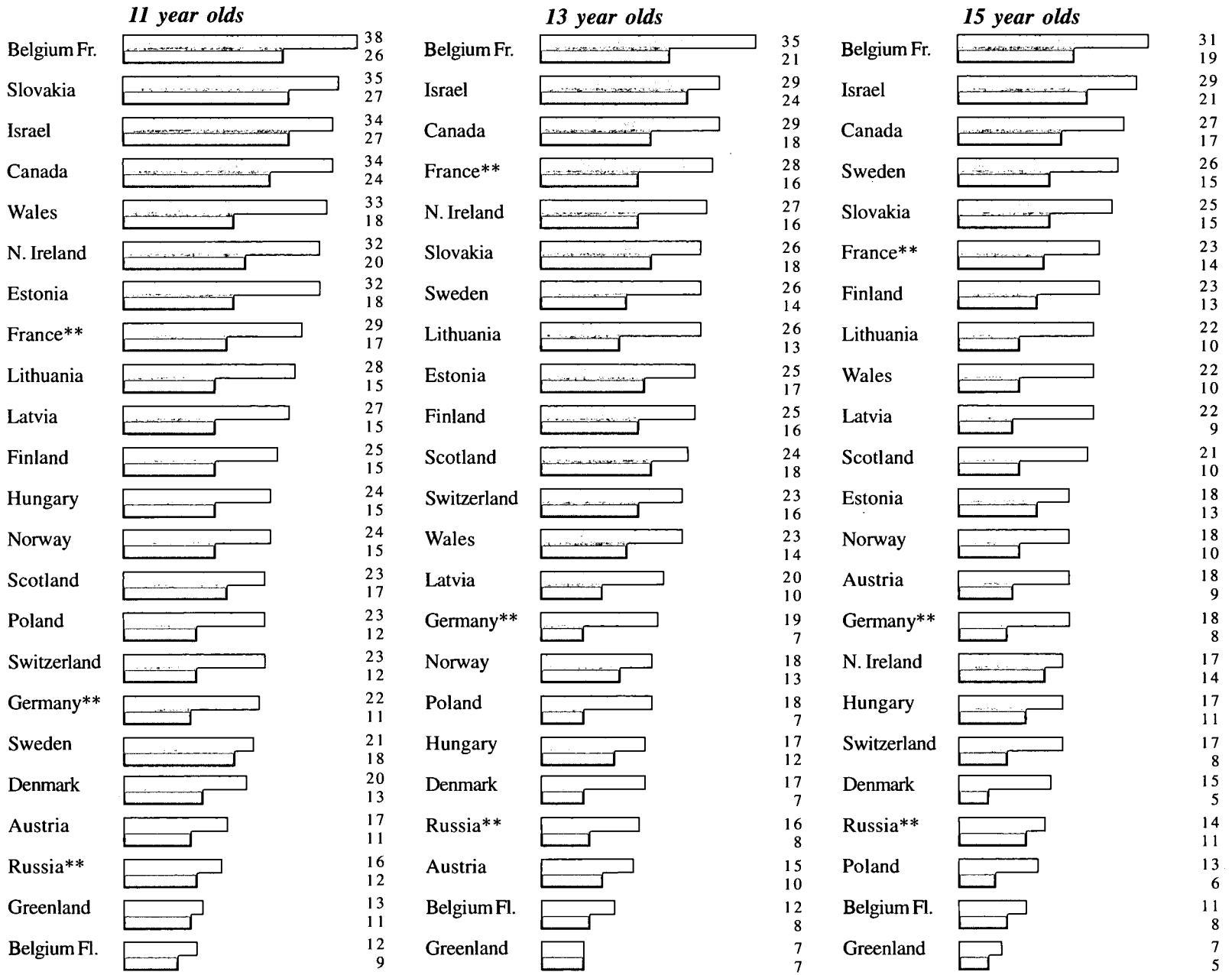
Recurring abdominal pain among young people has frequently been found to be a psychosomatic response to stress (Sharrer & Ryan-Wenger, 1991).

Lower percentages of students reported frequent stomachaches than was the case for headaches (Figure 5.7). For girls, proportions met or exceeded 25 percent in 11 countries for 11 year olds, in 10 countries for 13 year olds and in five countries for 15 year olds. It might be that for some adolescent girls stomachache was equated with menstrual cramps. The decrease in the proportion of older girls experiencing stomachaches may be because their menstrual cycle is more established.

For the most part, few boys complained of stomachaches. Only for 11-year-old boys in three countries did the proportion exceed 25 percent. There was no clear regional pattern to the countries where stomachaches were the most or least prevalent. Belgian (Fr.), Canadian, Israeli and Slovakian students were among the most likely to have stomachaches at all age levels. As noted previously, students in Israel and Canada were also among those most likely to have headaches. Stomachaches were least frequent in Belgium (Fl.), Denmark, Greenland and Russia. Three of these countries – Belgium (Fl.), Denmark and Greenland – also ranked low on the frequent headache item. Interestingly, Belgian students from the French-speaking and Flemish-speaking communities were at the extreme ends from each other on this measure.

In every country except Greenland and in each age group, girls were more likely than boys to report frequent stomachaches. The difference between girls and boys in their responses varied widely by country. The greatest difference between males and females was in Wales for 11 year olds (15%). The proportions of students with stomachaches tended to decline or remain relatively stable with age for both girls and boys in almost every country.

Figure 5.7 Students who had a stomachache once a week or more during the previous six months* (%)



* *Czech Republic and Spain did not include this item.*

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

3. Backache

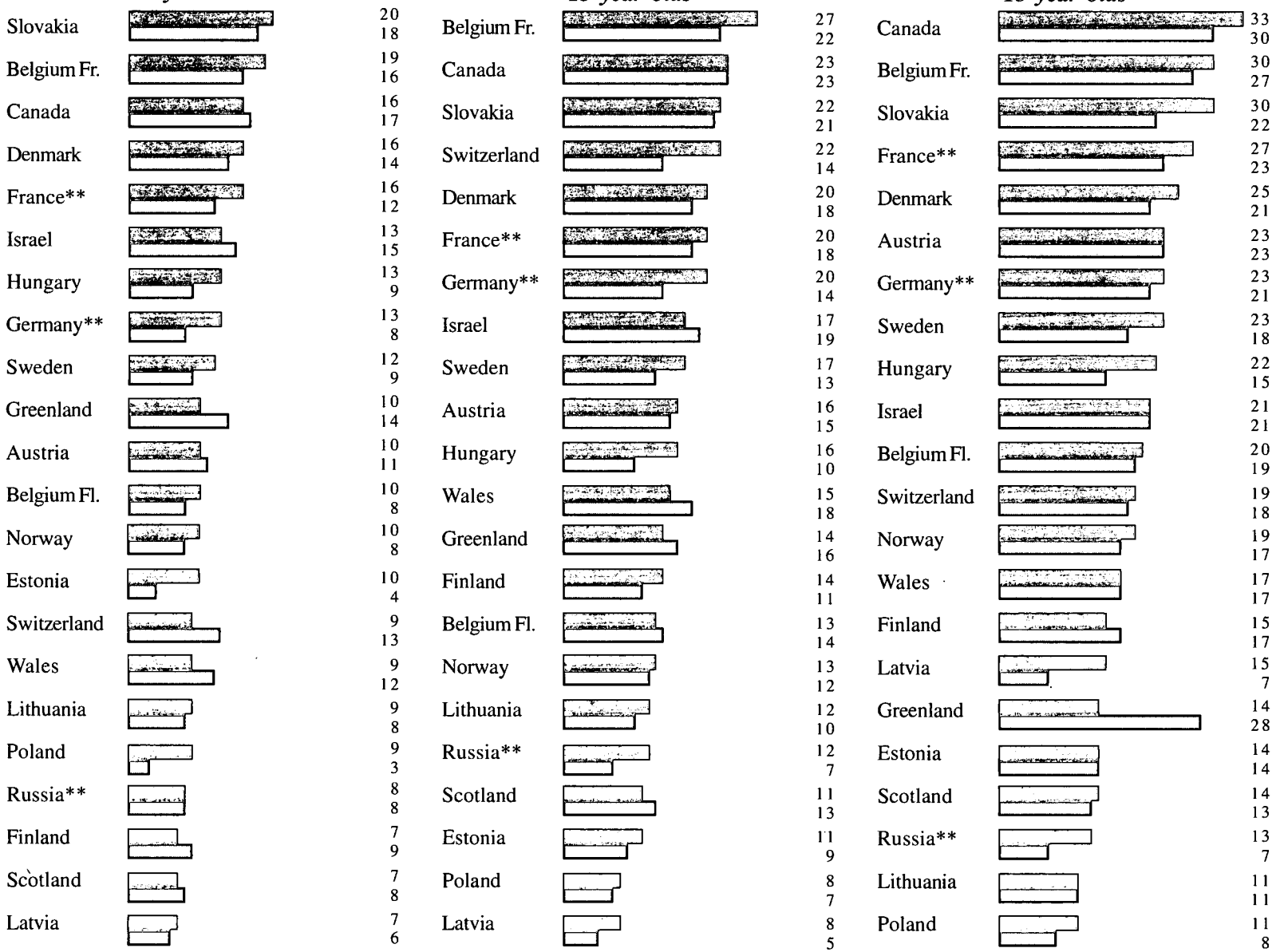
Having a backache is typically regarded as a common physical ailment of older people. Young people in this survey did seem to be less bothered by backaches than by either headaches or stomachaches but, in 13 countries, one-fifth or more of students, in at least one of the age groups surveyed, reported backaches at least weekly.

As was true for headaches and stomachaches, students in Belgium (Fr.), Canada and Slovakia were the most likely to complain of frequent backaches (Figure 5.8). Denmark and France also tended to rank high. Students from Latvia, Lithuania, Poland, Russia, and Scotland were consistently among the least likely to report backaches.

The incidence of backaches was similar for males and females across age groups with a few exceptions at age 15. Seven percent or more girls than boys in Hungary, Latvia and Slovakia said they had suffered backaches once a week or more in the past six months. In Greenland, twice as many boys as girls, 28 to 14 percent, reported backaches.

Also, fifteen year olds were more likely to have frequent backaches than 11 year olds with the largest increases being for girls in Canada (17%) and Austria (13%) and for boys in Greenland (14%), Canada and Germany (both 13%).

Figure 5.8 Students who had a backache once a week or more during the previous six months* (%)



* *Czech Republic, Northern Ireland and Spain did not include this item.*

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

4. Difficulty getting to sleep

Significant cultural differences in the sleeping habits of young people were found in the 1990 HBSC survey (Tynjälä et al., 1993). The proportion of participants reporting trouble falling asleep and getting too little sleep varied significantly among countries as well as among age groups. Students who have sleeping difficulties once a week or more may be reacting to problems in different areas of their lives, in their social relationships at home or at school (Wright & Wright, 1992). Insomnia is also linked to distress over school-related matters and is viewed as a response to the psychological distress that results.

Figure 5.9 indicates some of the factors associated with sleeping problems for the respondents in this survey. Of course, each child is affected by a different combination of factors. Physical problems, such as headaches and backaches, interfere with sleep. Nervousness and depression may be causes of sleeping difficulties or they may result from lack of sleep. Certainly youth who do not get enough sleep are more likely to be irritable. For some students loneliness may be the primary cause – for some girls, sleeping problems are clearly linked to poor communication with parents. These problem areas require further analysis.

Substantial proportions of students in Canada, France and Wales reported frequent sleeping difficulties (Figure 5.10): over 40 percent of girls in these countries and nearly as many boys had difficulty getting to sleep at least once a week. Students from Belgium (Fl.), Hungary, Lithuania and Poland were the least likely to have difficulty sleeping across the three age groups.

More girls than boys reported difficulty getting to sleep, but generally, there were not large differences between their responses except in some higher ranking countries, where differences of between 7 and 13 percent were common. Only in Israel did slightly more boys than girls find it difficult to sleep at all age levels.

There was no clear pattern of either an increase or decrease in sleeping difficulties with age. In nine countries, the proportions of students remained about the same from age to age; about equal

Figure 5.9 Factors associated with having difficulty getting to sleep

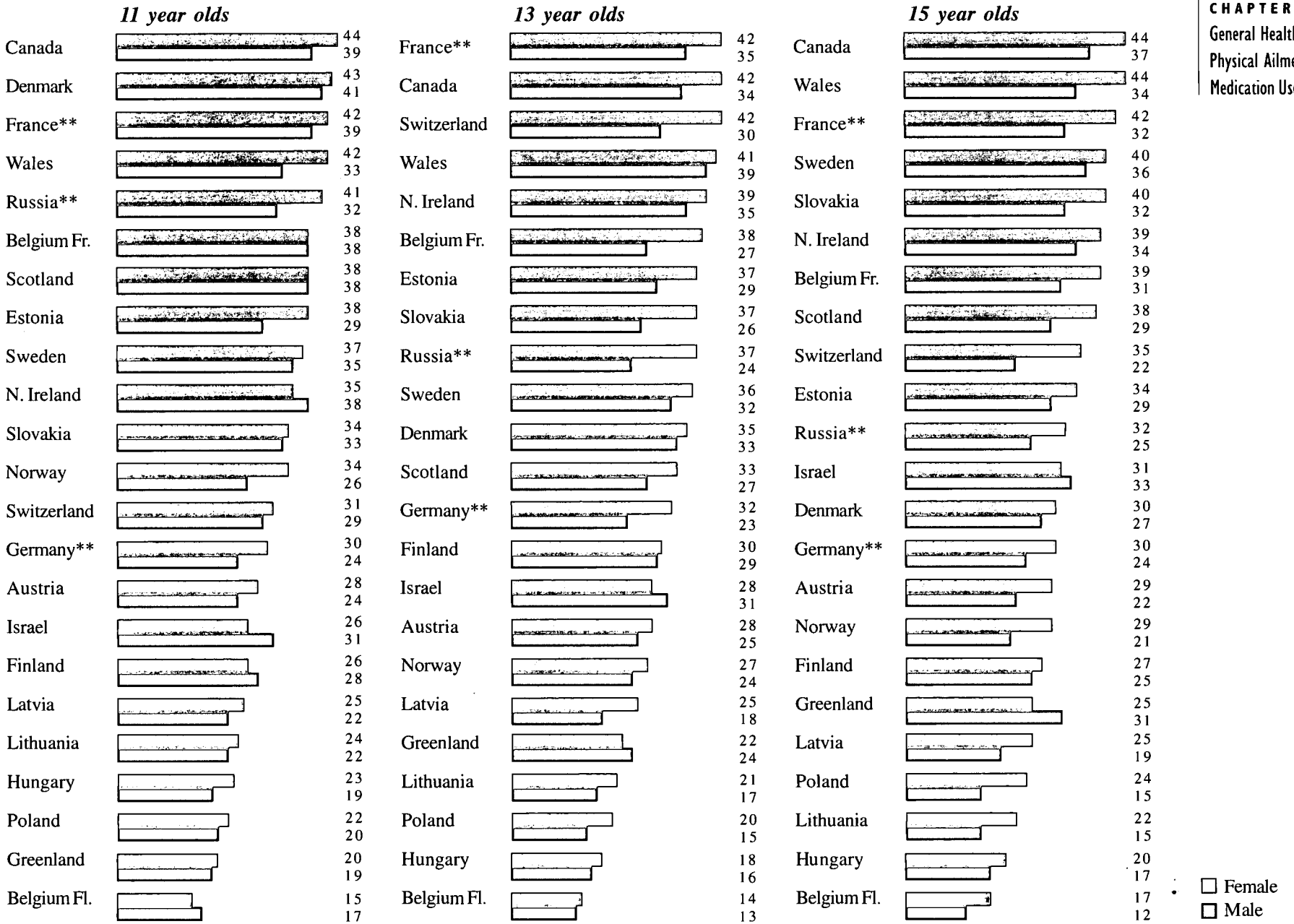
Students who often have difficulty getting to sleep are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Feel dizzy	O	O	O	O	O	O
Feel depressed	O	O	O	O	O	O
Be irritable	O	O	O	O	O	O
Feel nervous	O	O	O	O	O	O
Be tired in the morning	O	O	O	O	O	O
Have headaches	O	O	O	O	O	O
Have stomachaches	O	O	O	O	O	O
Have backaches	O	O	O	O	O	O
Feel lonely	O	O	O	O	O	O
Feel left out of things	O	O	O	O	—	—
Feel helpless	—	O	O	O	—	O
Have poor communication with parents	—	O	—	O	—	O
Be unhappy	—	O	—	O	—	O

Correlation coefficient: O .15 to .19 O .20 to .29 O .30 to .39

numbers of the other countries increased or decreased slightly from age 11 to age 15. The exception was Denmark where 11 year olds were far more likely than 15 year olds to have trouble getting to sleep.

In general, substantially higher proportions of students had difficulty sleeping than felt tired most days (Figure 5.4). Among 11 year olds, Belgium (Fr.), Denmark, Estonia, Northern Ireland and Scotland ranked among the top ten countries on both questions; for 15 year olds, those from Canada, Northern Ireland, Sweden and Wales were among the top ten. Students from Greenland, Lithuania, Latvia and Poland tended to be among the least likely to feel tired in the morning and the least likely to experience difficulty getting to sleep once a week or more often.

Figure 5.10 Students who had difficulty getting to sleep once a week or more during the previous six months* (%)



* *Czech Republic and Spain did not include this item.*

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

5. Being in a bad mood (irritable)

Perhaps one of the most widely recognized characteristics of teenagers is the frequent mood swings they experience. As Figure 5.11 shows, irritability seemed to be a frequent occurrence among the adolescent participants in this survey. Proportions of boys and/or girls who indicated they were irritable once a week or more exceed one-half in 10 countries for 11 year olds, 11 countries for 13 year olds and 15 countries for 15 year olds.

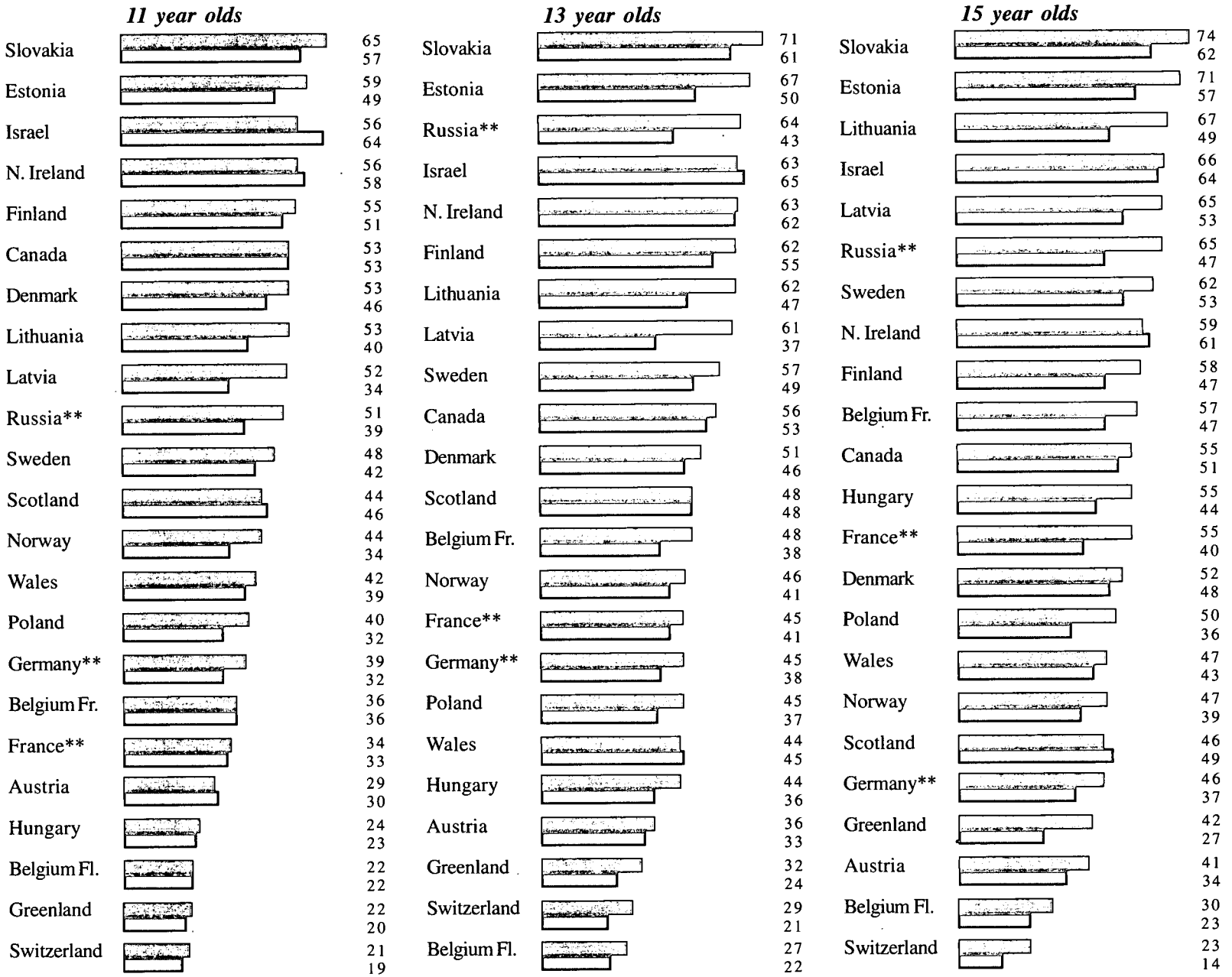
Estonian, Israeli and Slovakian students in all age groups were the most likely to say they were in a bad mood once a week or more. In the 13- and 15-year-old groups, Lithuanian and Russian girls were also among the most likely to be irritable. Students in Greenland, especially 11 and 13 year olds, Belgium (Fl.), Austria and Switzerland were among the least likely to be in a bad mood once a week or more.

Overall, girls were more likely to report being irritable. There were larger gender differences on this item among all age groups in Estonia, Latvia, Lithuania and Russia. There was no difference between 11-year-old girls and boys in France, but a 15 percent difference between 15 year olds in that country. Only 11 year olds in Israel reversed the pattern to any extent, with eight percent more boys than girls indicating they had been irritable at least once a week in the past six months.

Lithuania

In most countries, 15 year olds were more likely than students in other age groups to be in a bad mood once a week or more. The difference is very slight in Canada, Denmark, Norway and Scotland; it is larger for girls in France and Greenland and among both boys and girls in Belgium (Fr.) and Hungary.

Figure 5.11 Students who were in a bad mood (irritable) once a week or more during the previous six months* (%)



* *Czech Republic and Spain did not include this item.*

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

6. Nervousness and dizziness

The students were asked to indicate how often they felt nervous (uneasy) and dizzy. Unlike such ailments as headache and stomachache, nervousness and, to a lesser extent, dizziness often appear as vague symptoms. As well, the terms may be understood differently across cultures and a cautious approach should be taken to national comparative data. Tension, strain or worry usually produce a sense of uneasiness which may or may not be referred to as nervousness by those who experience it. In a similar way, respondents may consider dizziness the vague feeling of light-headedness associated with hunger or lack of sleep or only more severe forms of disorientation such as vertigo.

The proportion of students who said they frequently feel nervous was quite high in some countries. In Israel, Poland and Slovakia, high proportions of students across age levels felt nervous once a week or more (Figure 5.12). In many countries, one-third or more of males and /or females said they had felt nervous once a week or more. In Denmark, Greenland, Norway and Scotland less than one-quarter of students reported nervousness weekly or more often.

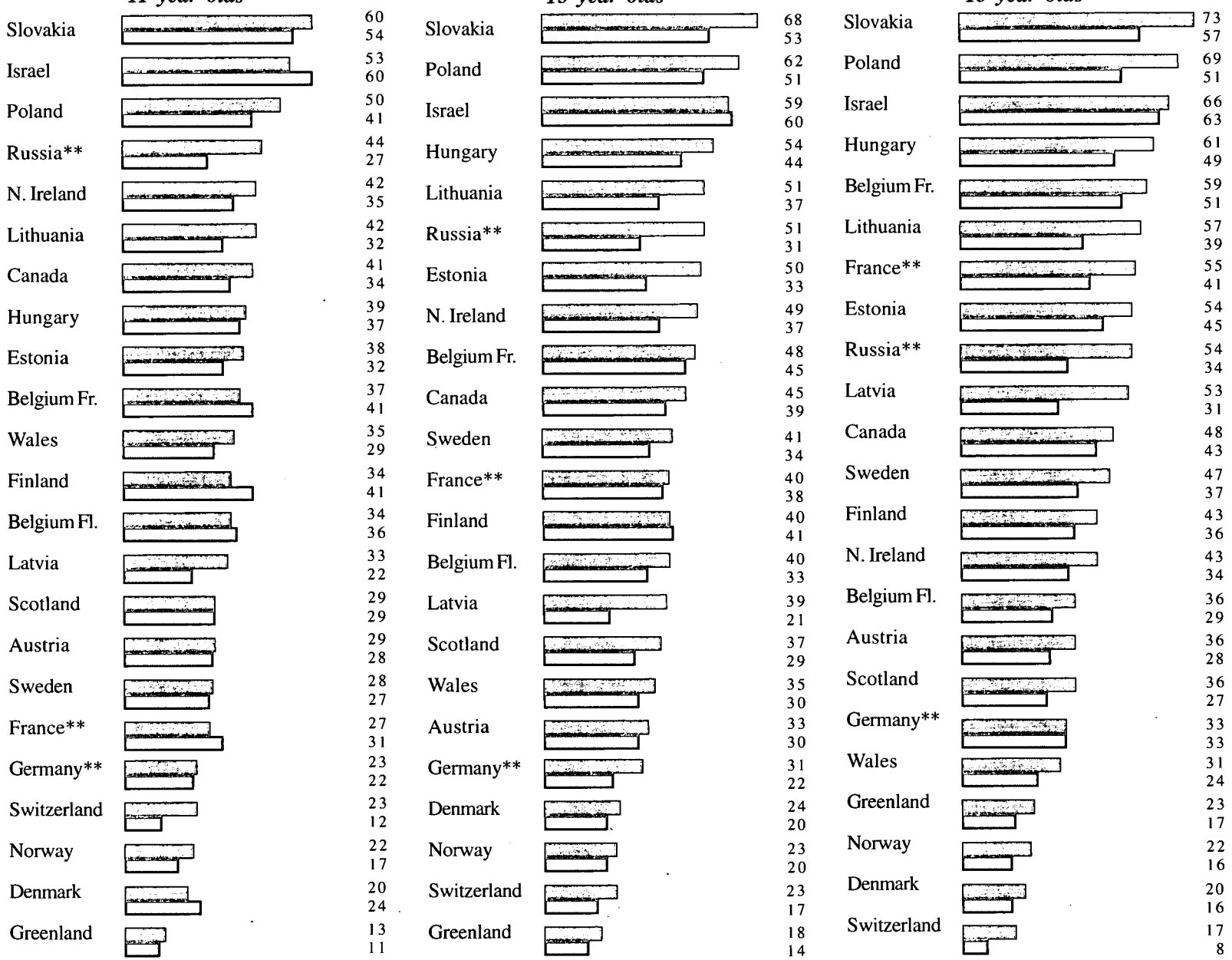
As with other health problems described, girls were more likely to feel nervous once a week or more. This was consistently true for 13 and 15 year olds. Among 11 year olds in six of the countries, boys were more likely than girls to feel nervous (Belgium [Fl.], Belgium [Fr.], Denmark, Finland, France and Israel), but overall the differences were very small.

Feeling nervous increased from age 11 to 15 in most countries. The range of responses is consistently wide within each age group, from 11 to 60 percent for 11 year olds; 14 to 68 percent for 13 year olds and 8 to 73 percent for 15 year olds.

Although feeling dizzy is not a major health problem among adolescents, it does seem to be a cause for concern in some countries. In Estonia, a very large proportion of students (over 40 percent of girls and one-third of the boys at all age levels) reported that they felt dizzy once a week or more. This is substantially higher than in any other country. For all the other countries, the range of responses for males in all age groups is 5 percent to 24 percent; for females it is 10 percent to 32 percent. Similar to other health disorders, girls were more likely than boys to feel dizzy at least once a week. Generally, the differences were not great. Along with Estonia, Canada, Israel, Northern Ireland and Wales tended to rank among the top countries on this measure.

There was not a great deal of consistency across age levels in the countries where students responded most positively on this item and no clear overall pattern in the responses of students of different ages. In some countries, there was a steady increase from 11 to 13 to 15 year olds, mainly for girls. In the majority of countries (15 for boys, 12 for girls), the proportions of 11 and 15 year olds who frequently felt dizzy were within three percentage points. Finnish girls' responses showed the greatest difference between ages 11 and 15 – from 13 percent to 24 percent. Only the Belgium (Fr.) responses were consistently low across age groups.

Figure 5.12 Students who felt nervous once a week or more during the previous six months* (%)



* *Czech Republic and Spain did not include this item.*

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

D. Use of medication

The use of medication by students for the various physical ailments described in the previous section is considered here. It is important to note that the cost and availability of medication in individual countries may influence its use. As well, the general attitude of the adult population towards medication could have a bearing on whether or not students choose to take pills or other medicine. Although the survey question did not distinguish between prescription and over-the-counter (OTC) drugs, we assume that in most of the cases, it is the latter that are referred to by the respondents.

I. Headache medication

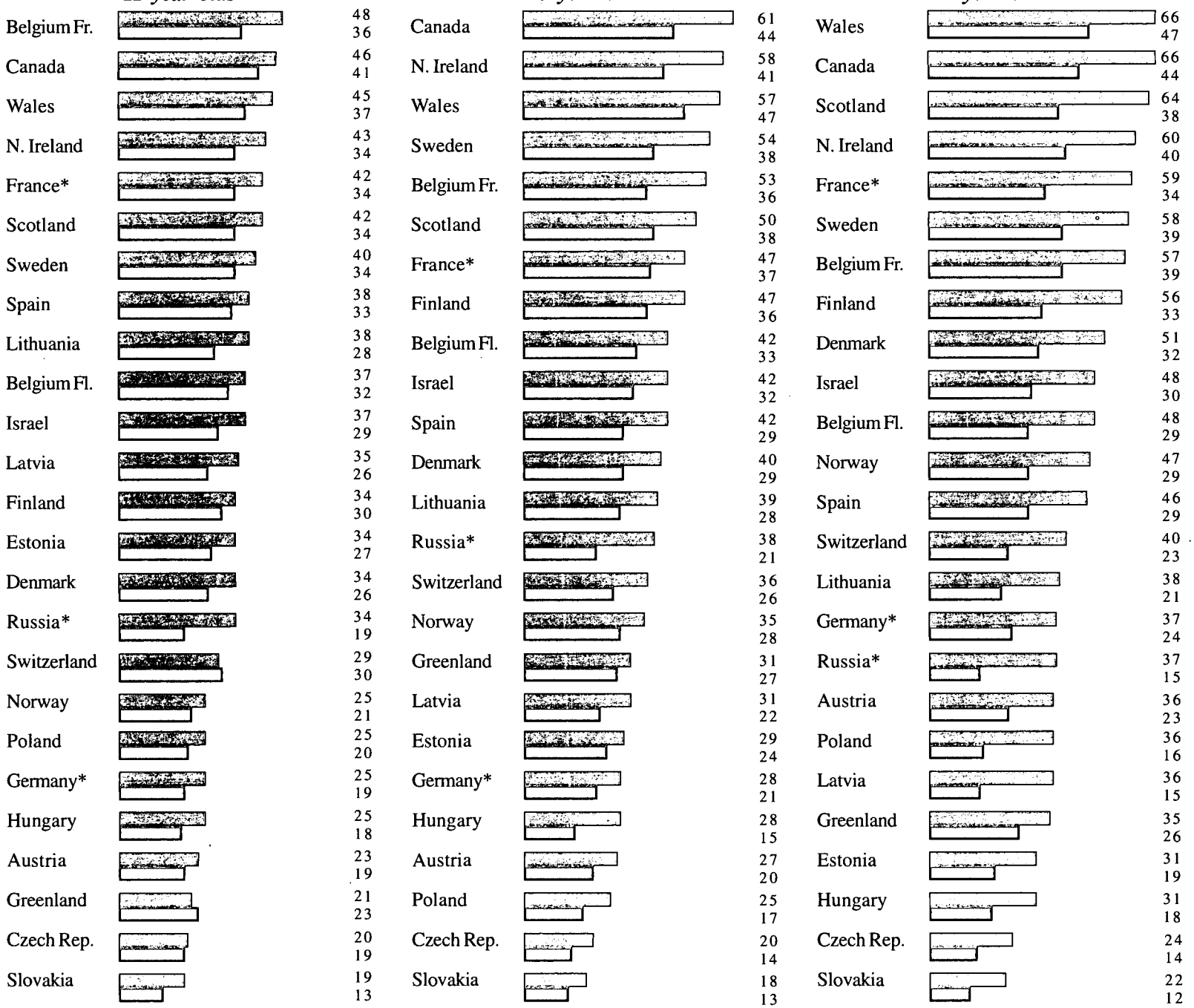
Advertisements for OTC headache medications are pervasive. In many countries, headache pills are probably one of the most readily available OTC drugs. Among the top countries in student use of headache medication were Canada, Northern Ireland and Wales in all age groups (Figure 5.13). Belgium (Fr.), France, Scotland and Sweden also tended to be among the top third of high utilization countries. It is interesting to note that among some of the high-use countries, there are common cultural roots, for example, the three United Kingdom countries and Canada, and Belgium (Fr.) and France.

Young people in all three age groups were consistently less likely to take medication in Austria, the Czech Republic, Germany, Greenland, Hungary, Poland and Slovakia.

There was, as expected, a relationship between the use of headache medication and frequency of headaches. For each age group, more than one-half of the countries in the top 10 on this item are also in the top 10 among countries where respondents reported frequent headaches. Canada, Belgium (Fr.), Northern Ireland and Wales students at each age were among the 10 highest ranking countries on both measures. Only Austria, Greenland (girls) and Poland were consistently within the lowest 10 ranking countries for both items. For the 13 and 15 year olds overall, 14 countries showed consistency, eight in the higher ranking countries and six in the lower ranking countries. One major anomaly was Slovakia where the fewest students in all age groups indicated they took medication, but where the most 11 year olds indicated they suffered from headaches. The 13 and 15 year olds were in the middle ranges.

Using headache medication was more common among girls than boys. This was true in all countries at all age levels except among 11 year olds in Greenland and Switzerland, where almost equal proportions of boys and girls had taken medicine for a headache in the previous month. Medication usage tended to increase with age, particularly among female students; the greatest increase occurred between 11 and 13 years of age.

Figure 5.13 Students who took medicine or pills for a headache during the previous month (%)



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

2. Stomachache medication

As we have seen, stomachaches were a less common health problem than headaches for young people, but some students, especially older girls, did take stomach medication (Figure 5.14). It is difficult to understand this response because fewer older girls complained of stomachaches. Possibly they took medication for menstrual pain. Also, parents may have more control over the use of pills by younger children.

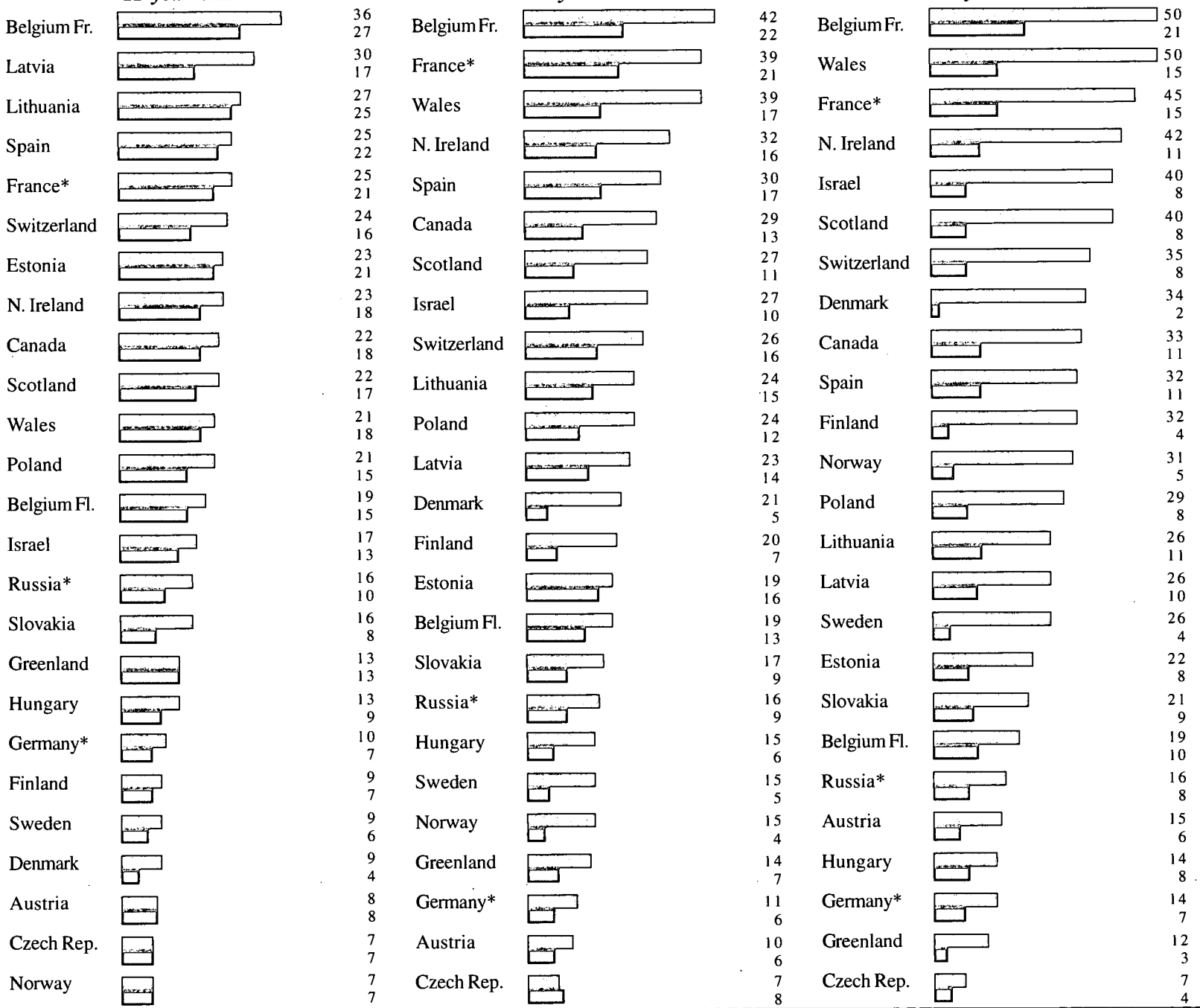
In three countries, more than one-quarter of 11-year-old girls reported having taken stomach medication in the previous month. This was true in nine countries for 13-year-old girls and in 16 countries for 15-year-old girls. The proportion of boys who reported that they had taken medicine for a stomachache exceeded 25 percent only for 11 year olds in Belgium (Fr.).

Taking medicine for stomachaches was most common in Belgium (Fr.) in all age groups. Girls, there, were also the most likely to report frequent occurrences of this ailment. Students in France, as well as 13 and 15 year olds in Wales and Northern Ireland, were also more likely than most others in their age groups to take stomachache medication. Students from Austria, the Czech Republic, Germany, Greenland, Hungary and Sweden were consistently among the least likely.

The relationship between the incidence of stomachaches and the use of medication for stomachaches is tenuous at best. There is very little consistency between the countries reporting the highest or lowest use of medication with those reporting similar incidence of stomachaches. Only the students in French-speaking Belgium reported both high medication use and high incidence of stomachaches. Greenlandic students were at the low end on both measures.

Sweden

Figure 5.14 Students who took medicine or pills for a stomachache during the previous month (%)



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

3. Medicine for difficulty getting to sleep

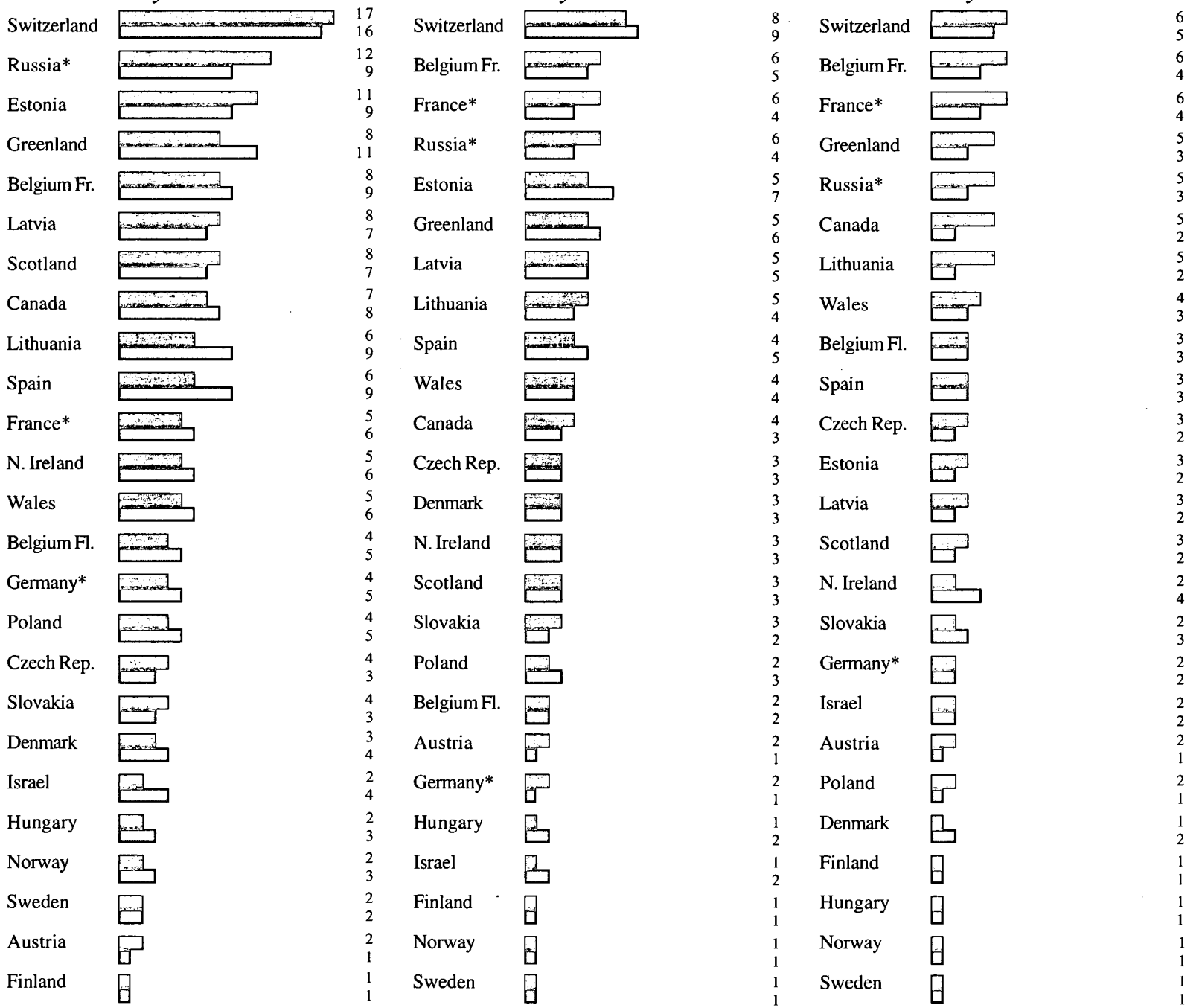
For the most part, extremely low percentages of students took medication or pills to help them sleep (Figure 5.15). Students in Belgium (Fr.), Russia and Switzerland were among the most likely in each age group to take medicine for this purpose, but, even in these countries, reported usage was low. Only for 11 year olds in Switzerland was it above 15 percent (17% for girls and 16% for boys) and in the vast majority of countries it was below five percent. Use of medication for sleeping difficulties by all age groups was almost negligible in Austria, Finland, Hungary, Norway and Sweden. Generally, very few students took medication to help them sleep compared with the proportion who reported some sleeping difficulties.

Boys and girls were almost equally likely to report taking medication for sleeping problems. The proportion of young people who took medication or pills to help them sleep either remained the same or declined from age 11 to 15.

4. Medicine for nervousness

Very few students reported that they take medicine for nervousness, the highest proportion being 12 percent. Between 10 and 12 percent of 11-year-old boys and girls in Estonia, Lithuania, Spain and Switzerland along with 11-year-old girls in Latvia and Russia said they had taken medicine for nervousness in the previous month. Although the proportions of students who indicated that they took medication tended to decrease between ages 11 and 15, students in the above countries remained among those who reported the highest incidence of usage. There was little correlation between countries where students often felt nervous and those where students took medicine for nervousness. Swiss students reported a low incidence of feeling nervous and Estonian and Lithuanian students were in the middle range. Gender differences in the use of medication were very small, but there was a tendency for more 11-year-old boys than girls to take medicine for nervousness and more 15-year-old girls than boys to do so.

Figure 5.15 Students who took medicine or pills for difficulty getting to sleep during the previous month (%)



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

5. Cough/cold medication

Overall, higher proportions, ranging from one-fifth to one-half, of students had taken medicine for coughs and/or colds (Figure 5.16) in the previous month than had taken medicine to treat headache or stomachache. Across all age groups, students in Canada, the Czech Republic, Poland and Wales were among the most likely to have taken cold/cough medicine and students in Austria, Denmark and Israel the least likely. All of the higher ranked countries administered the survey in the winter months, generally considered to be the season for coughs and colds; however, Denmark also administered the survey at this time, as did several other countries in which less medication was used. Austria, Israel and Spain administered their surveys in May, but Spain ranked relatively high on the use of cough/cold medicine.

The proportions of students who had taken medicine for colds or coughs changed very little with age; percentages are slightly lower among the oldest students surveyed in half of the countries. In virtually all age groups and all countries more of the girls had used cold/cough medicine, but the difference was more than 10 percent in only six countries and in only one age group in each of those countries.

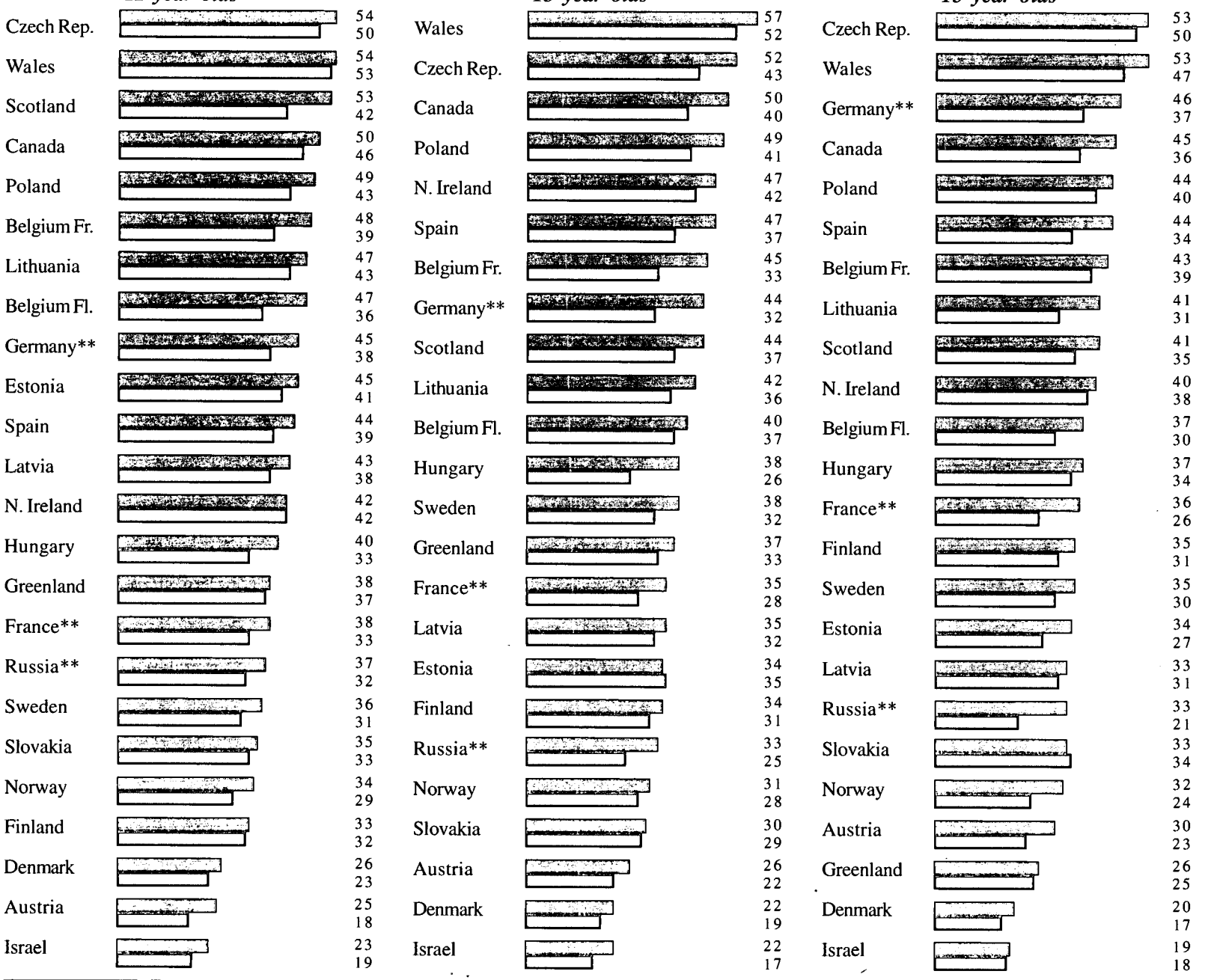
E. Summary

High proportions of adolescents in many countries do not feel that they are very healthy. Many are troubled by physical ailments, especially girls. In fact, the overall portrait of the health of girls that emerges from the findings is cause for particular concern. Boys have a more positive perception of their health and girls are more likely to report health problems such as headaches, stomachaches, dizziness and sleeping difficulties, and to take medication or pills for their physical aches and pains.

Younger students tend to feel more positive about their health than older students. Fewer 11 year olds feel tired in the morning when they go to school. Age also appears to be associated with the health problems young people report: while younger students have fewer symptoms of headache, backache, nervousness or dizziness, they tend to get more stomachaches.

Medication for headaches and coughs/colds are the most common type of medicine students use. Few students take medication for sleeping difficulties or nervousness. The presence of physical symptoms does not always mean that students take medicine. More students reported stomachaches, backaches, dizziness and nervousness than treated them with medicine.

Figure 5.16 Students who took medicine for coughs and/or colds during the previous month* (%)

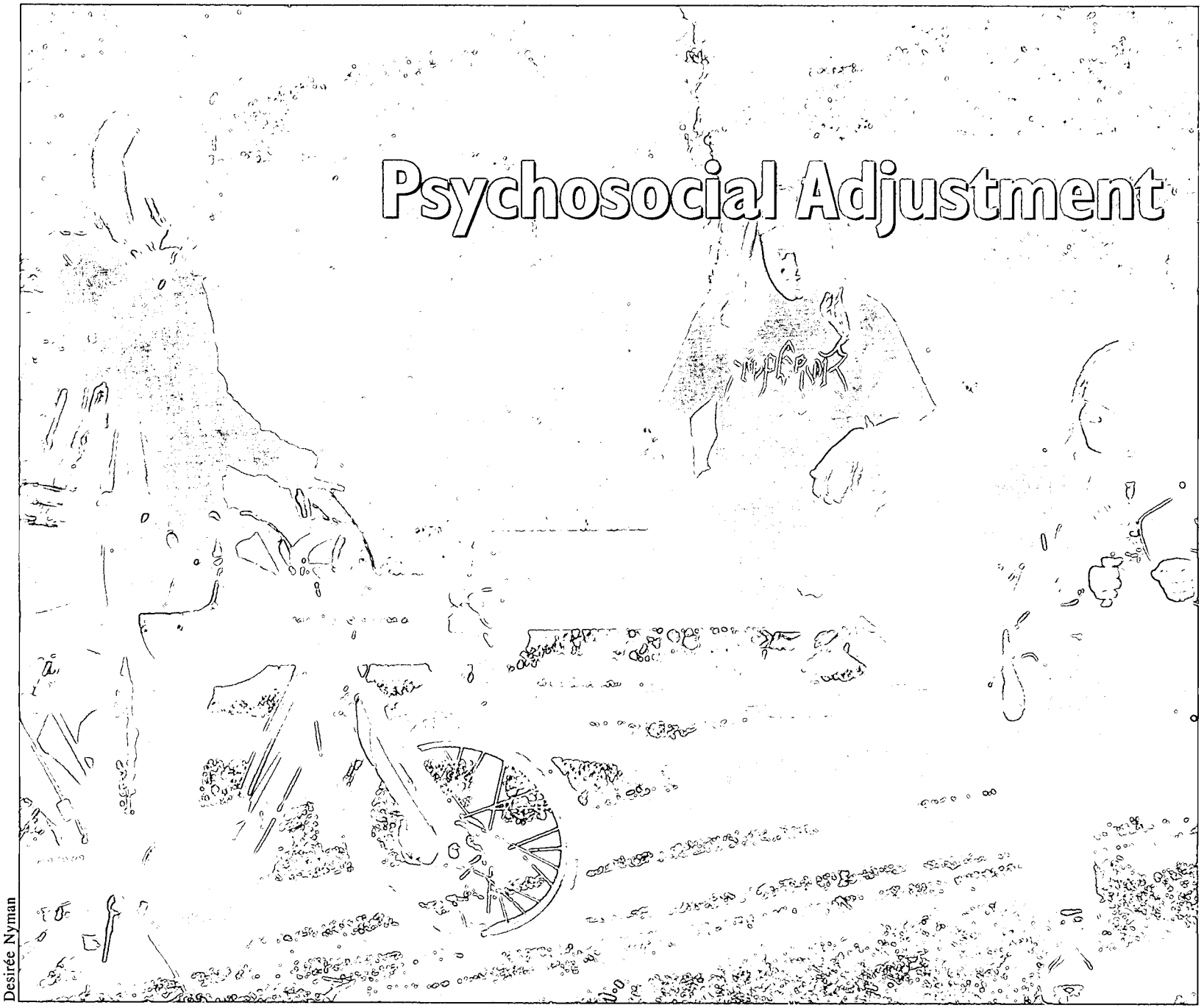


* *Switzerland did not include this item.*

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

CHAPTER 6

Psychosocial Adjustment



Desirée Nyman

Sweden

CHAPTER

6

Pyschosocial Adjustment

A. Introduction

Good health practices include not only those that contribute to physical well-being, but also those that facilitate the development of sound emotional, social and mental health. Psychological well-being is closely linked with the quality of social relationships young people are able to establish with family members and peers. Two of the critical components of sound mental health are a caring and supportive family and accepting and understanding friends, both of which contribute to the development of self-esteem and a positive self-concept. A good self-image contributes to the healthy maturation of a young person. It is also true that young people who do not feel good about themselves are more likely to experience emotional problems.

Problems in establishing and maintaining good relationships with parents and friends are among the most common difficulties young people experience. Many studies have focused on the quality of the parent-child relationship and its influence on the peer relationships, school experience and risk-taking behaviours of young people. Open communication is the basis for positive parent-child interaction. Young people who believe they are not accepted by their peers may be lonely and become depressed, especially if they suffer extreme forms of exclusion such as bullying and avoidance (Ramsey, 1994; Vara, 1994; Kafka & London, 1991).

In this chapter, we attempt to provide answers to the following questions:

- What is the mental health status of the young people surveyed?
- Do they find it easy to make friends and to talk to their friends?
- How much time do they spend with their friends?
- How well do young people communicate with their parents?

B. Mental health

The mental health status of young people both influences and is influenced by all other areas of their life: relationships with others, adjustment at school and the risks they may take with their health. For this survey five items were used to assess students' mental health: how happy they said they were and how often they felt lonely, helpless, confident and depressed.

I. Happiness

The concept of being "very happy about your life" captures the level of contentment young people feel when they are satisfied with the most important areas in their life – school, family, friends and their own personality and physical characteristics. To the question, "In general, how do you feel about your life?" students could respond: very happy; quite happy; not very happy; or not happy at all. Happiness, or subjective well-being, is an attitude suggesting the absence of worry, anxiety and depression and a general satisfaction with life as a whole (Robinson et al., 1991). In Figure 6.1, the factors that are most strongly correlated with happiness in this survey are listed. Good health and happiness tended to be linked together, which suggests that health is an important component of happiness. Satisfaction with school and good relationships with parents and peers were associated with happiness. It is also important to note that happy children were less likely to have periods of irritability, nervousness and helplessness and more likely to be confident and satisfied with their appearance. They were also less likely to have headaches, to be dizzy, to have difficulty getting to sleep and to be tired in the morning.

Figure 6.1 Factors associated with happiness

Students who are happy are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Be well integrated socially	O	O	O	O	O	O
Feel healthy	O	O	O	O	O	O
Have a positive attitude toward school	O	O	O	O	O	O
Not feel depressed	O	O	O	O	O	O
Not be irritable	O	O	O	O	O	O
Not feel nervous	O	O	O	O	O	O
Feel confident	O	O	O	O	O	O
Have good communication with parents	O	O	O	O	O	O
Not feel helpless	O	O	O	O	O	O
Be satisfied with their appearance	O	O	O	O	O	O
Say parents are willing to come to school to talk with teachers	O	O	O	O	O	O
Say parents are willing to help them with problems at school	O	O	O	O	O	O
Say parents encourage them to do well at school	O	O	O	O	O	O
Believe their family is well off	O	O	O	O	O	O
Achieve well in school	O	O	O	O	O	—
Not want to change anything about their body	O	O	O	O	O	—
Not feel stressed at school	O	O	O	O	—	—
Not have headaches	—	O	—	O	—	O
Not have difficulty getting to sleep	—	O	—	O	—	O
Not feel dizzy	—	O	—	O	—	O
Not be tired in the morning	O	O	—	—	—	—

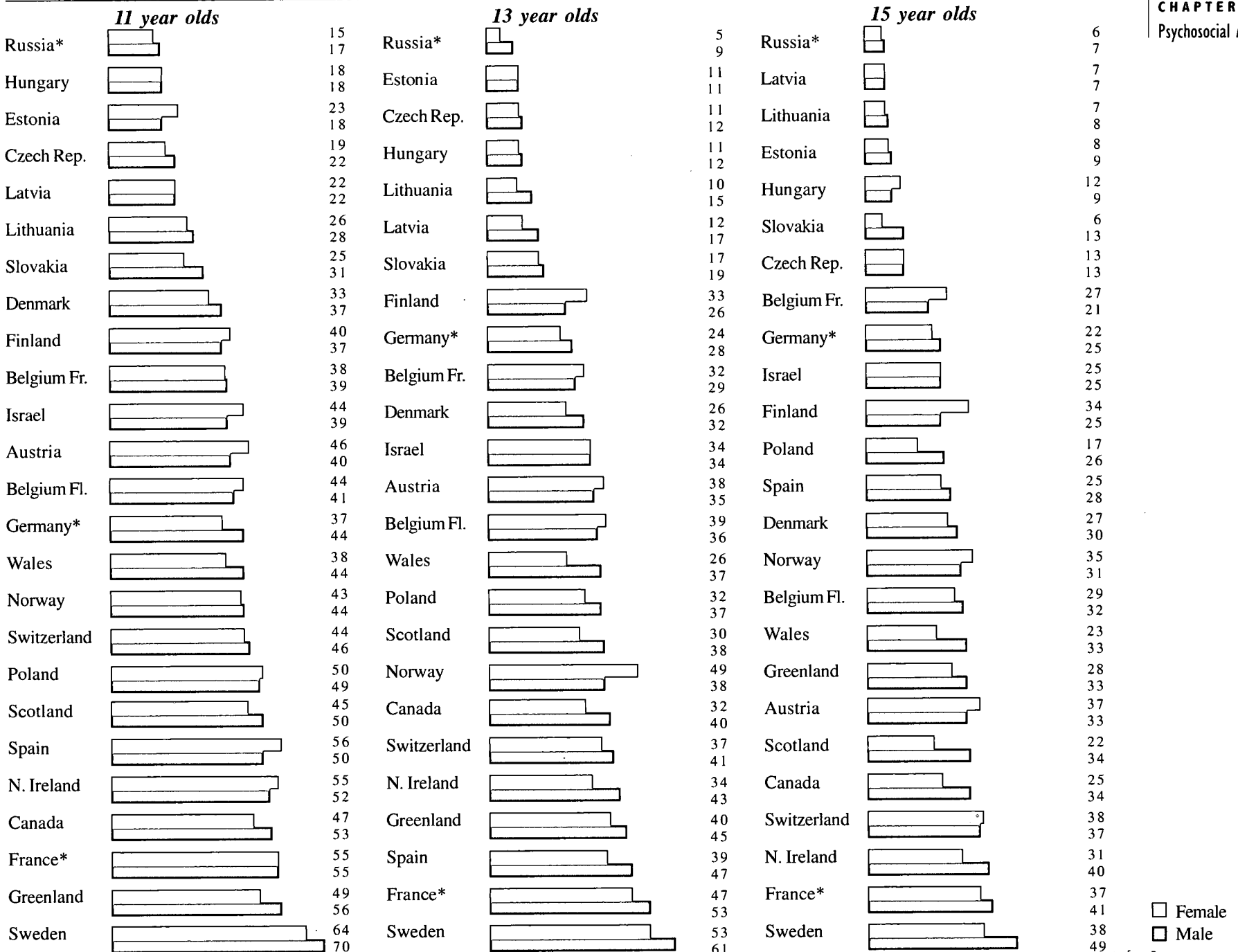
Correlation coefficient: O .15 to .19 O .20 to .29 O .30 to .39

The majority of students said they were either very or quite happy, but, as can be seen in Figure 6.2, there were pronounced differences from country to country in the proportion who said they were very happy. More students from Sweden than from other countries in each age group indicated they were very happy. Students in Canada France, Greenland, Northern Ireland and Scotland were among the more positive respondents at all ages. Students in the eastern European countries of the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Russia, and Slovakia tended to be the least likely to say they were very happy. These countries are also those where students were the most likely to say they were not happy at all.

Slightly more boys than girls felt very happy in most countries. There were some exceptions: in Austria and Finland, girls' responses were more positive than boys' across age groups, and in Norway 11 percent more of the 13-year-old girls than boys were very happy with their life. Israeli boys and girls at age 13 and 15 were equally likely to be very happy.

The youngest students tended to have the most optimistic outlook. Even in some of the countries where comparatively higher proportions of respondents said they are very happy, for example, in France, Greenland and Sweden, the proportion of students who felt very happy declined, sometimes substantially, by age 15. In Sweden, 64 percent of 11-year-old girls and 70 percent of 11-year-old boys felt very happy, but by age 15 only 38 and 49 percent, respectively, felt this way.

Figure 6.2 Students who felt very happy about their life (%)



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

2. Loneliness

Although most adolescents feel lonely occasionally, young people who are frequently lonely may have difficulty relating to others, may feel rejected or may be experiencing other serious emotional distress. Generally speaking, teenagers want to be accepted and do not want to be regarded as loners by others.

Loneliness indicates an absence of satisfying social and interpersonal relationships and can have a profound impact on emotional and physical well-being (Page et al., 1986; Young, 1982). Many studies have found lonely youth to be highly susceptible to participating in health-risk behaviours compared with youth who are not lonely (Page et al., 1994; Page, 1990; Mijuskovic, 1986). These adolescents are more likely to use marijuana, smoke cigarettes, be physically inactive and have eating disorders (Torres Rivas & Fernandez Fernandez, 1995; Page, 1990). Social isolation and rejection by one's peers can have a devastating effect on both the mental and physical health of adolescents (Brage et al., 1993).

Not surprisingly, the lonely student was more likely to feel left out of things (Figure 6.3) and to be an easy target for bullies. Of great concern are the physical and emotional problems these data show to be associated with loneliness. Echoing the results of the studies cited above, those adolescents who felt lonely were more likely to experience physical problems and various forms of psychosocial distress. They were more likely to be depressed, helpless, irritable, nervous and to lack confidence; they also tended to suffer from headaches, stomachaches and dizziness. However, unlike lonely students reported in other research studies, the youth in this study who described themselves as lonely were no more likely to smoke and drink to excess than their peers.

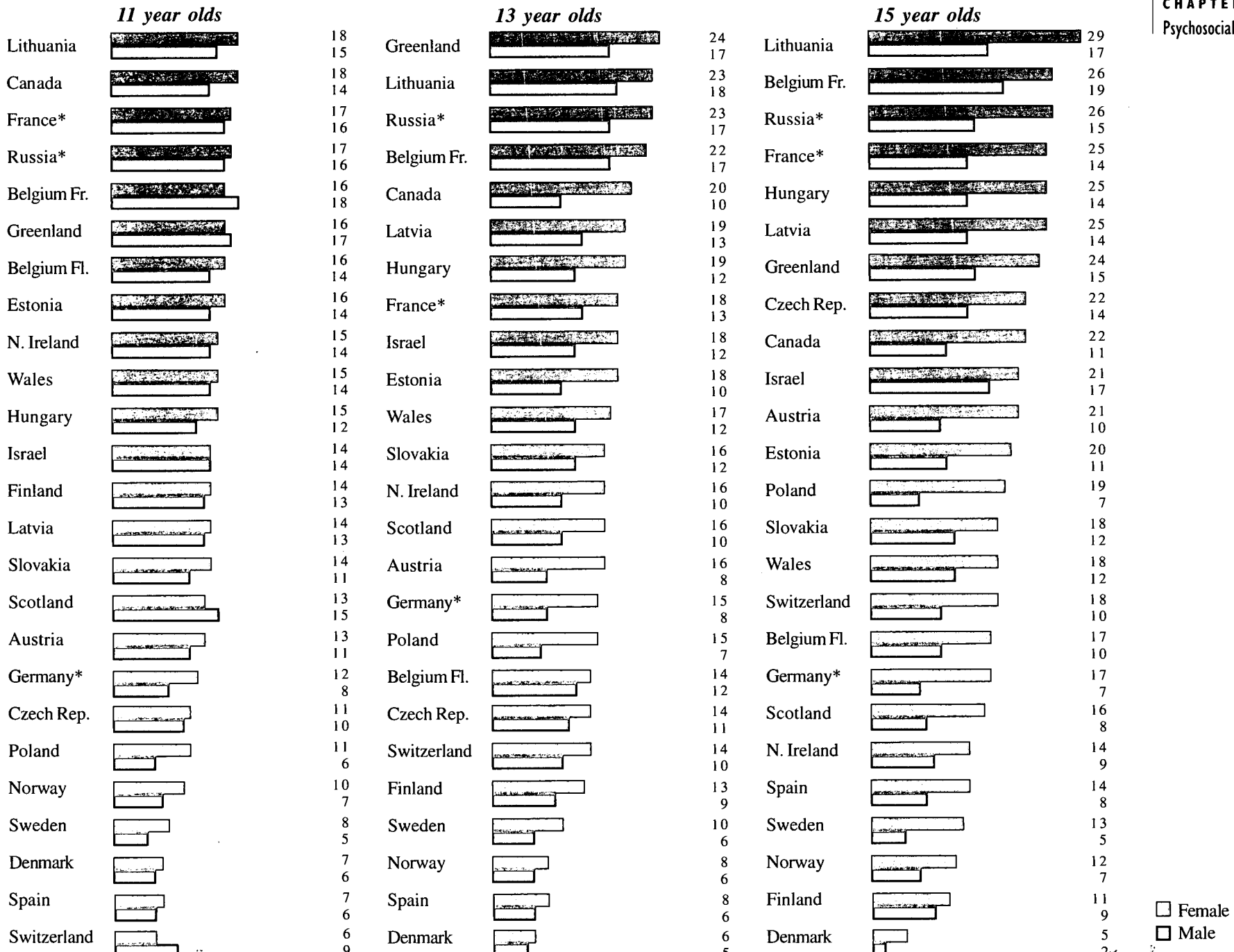
Frequent feelings of loneliness, with a few exceptions, did not seem to be a major problem for the majority of students. In most countries, 15 percent or less of 11 and 13 year olds and less than one-fifth of 15 year olds suffered from loneliness very or quite often (Figure 6.4).

Figure 6.3 Factors associated with feeling lonely

Students who are lonely are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Feel left out of things	○	○	○	◎	○	○
Feel unhappy	○	○	○	○	○	◎
Feel depressed	○	○	○	○	○	○
Feel helpless	○	○	○	○	○	○
Feel alone at school	○	○	○	○	○	○
Be irritable	○	○	○	○	○	○
Feel nervous	○	○	○	○	○	○
Find it difficult to make friends	○	○	○	○	○	○
Feel other students do not accept them as they are	○	○	○	○	○	○
Have been bullied	○	○	○	○	○	○
Lack confidence	○	○	○	○	○	○
Have poor communication with their parents	○	○	○	○	○	○
Have difficulty getting to sleep	○	○	○	○	○	○
Have headaches	○	○	○	○	—	○
Feel dizzy	○	○	○	○	—	○
Say parents are not willing to help them with problems at school	—	○	—	○	○	○
Have stomachaches	○	○	—	○	—	○
Feel stressed at school	○	○	○	○	—	—
Feel unhealthy	—	○	○	○	—	○
Want to change something about their body	○	○	○	—	○	—
Be dissatisfied with their appearance	—	○	○	—	○	—
Have few or no close friends	—	—	—	○	○	○
Have a negative attitude toward school	—	○	—	○	—	○

Correlation coefficient: ○ .15 to .19 ○ .20 to .29 ○ .30 to .39 ● .40+

Figure 6.4 Students who felt lonely very or quite often (%)



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

Of the countries with the highest proportions of lonely students in each age group, Belgium (Fr.), Greenland, Lithuania and Russia appeared in all three groups. Students in the Scandinavian countries – Denmark, Finland, Norway and Sweden – and Spain were the least likely to experience loneliness.

Girls were more likely than boys to frequently feel lonely – in some countries, twice as likely, especially among the 13 and 15 year olds. In Poland, for example, at all ages, twice as many of the girls felt lonely. Pronounced gender differences also occurred in Canada for 13 and 15 year olds, and in Austria, France, Germany, Greenland, Hungary, Latvia and Lithuania for 15 year olds.

Generally, the proportion of girls who frequently felt lonely increased from age 11 to 15 while boys' responses decreased or remained about the same. In a few countries, such as the Czech Republic and Israel, the responses of both boys and girls increased with age.

3. Helplessness

A feeling of helplessness is characterized by a sense of being vulnerable and powerless to influence the form and direction of one's life. Students who frequently feel helpless may believe they cannot influence what goes on around them. They may feel alone and unprotected. Such feelings would certainly negatively affect their self-image and their interactions with others.

A number of researchers have associated helplessness or powerlessness with social isolation (Robinson et al., 1991), which was also found in this survey. Young people may feel helpless for a variety of reasons: their appearance, traumatic experiences (e.g., the death of a loved one, the separation of parents) and stressful relationships at home or at school.

The factor most highly correlated with feeling helpless in this survey is poor social integration (Figure 6.5). Helplessness was associated with poor relationships with peers and parents, periods of depression and general unhappiness. Students who often felt helpless were also more likely to lack confidence, feel nervous and generally unhealthy. Younger students were more likely to want to change something about their body. Girls and younger boys were likely to feel stressed at school and younger girls to have a poor attitiude toward school.

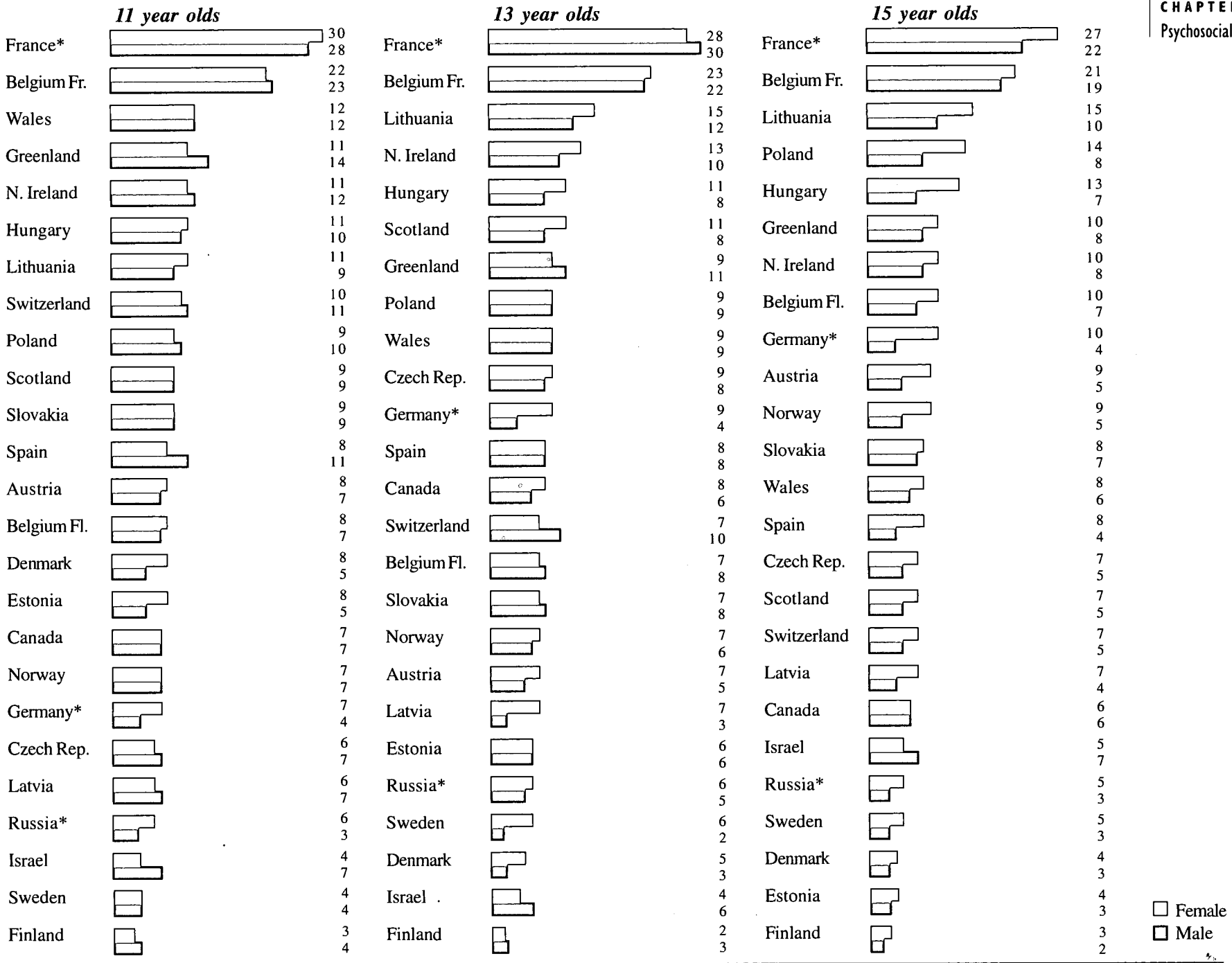
Figure 6.5 Factors associated with helplessness

Students who feel helpless are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Not be well integrated socially	○	○	○	○	○	○
Lack confidence	○	○	○	○	○	○
Feel depressed	○	○	○	○	○	○
Feel unhappy	○	○	○	○	○	○
Feel nervous	○	○	○	○	○	○
Be irritable	○	○	○	○	○	○
Have poor communication with their parents	○	○	○	○	○	○
Feel stressed at school	○	○	○	○	—	○
Be dissatisfied with their appearance	—	○	○	○	○	○
Have difficulty getting to sleep	—	○	○	○	—	○
Feel unhealthy	—	—	○	○	○	○
Want to change something about their body	○	○	○	○	—	—
Have a negative attitude toward school	—	○	—	○	—	—

Correlation coefficient: ○ .15 to .19 ○ .20 to .29 ○ .30 to .39

Relatively few students – 10 percent or fewer in each age group – always or often felt helpless (Figure 6.6). In France and Belgium (Fr.), however, two to three times this number of students frequently had feelings of helplessness. This may be explained in part by a different interpretation of the term helplessness in the French language. Thirteen and 15 year olds in Lithuania were more likely than most other students to feel helpless as were 11-year-old boys in Greenland, 13-year-old girls in Northern Ireland and 15-year-old girls in Hungary and Poland.

Figure 6.6 Students who felt helpless always or often (%)



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

Six percent or less of students in Finland, Sweden and Russia said that they always or often felt helpless. Other countries with relatively low proportions of youth who often felt helpless across age groups are Denmark, Latvia, Estonia (13 and 15 year olds), and Canada and the Czech Republic (11 and 15 year olds). There was a high degree of similarity between the responses of boys and girls. The largest gender differences – only 5 to 6 percent – occurred for 15 year olds in France, Germany, Hungary, Lithuania, and Poland. Only in Israel did slightly more of the male respondents in every age group say they often or always feel helpless. There were only small differences by age.

4. Confidence

Researchers have studied confidence as a component of self-esteem or self-concept. The literature presents evidence for strong associations between confidence and friendship (Torres Rivas & Fernandez Fernandez, 1995; Connolly & Konarski, 1994; Connor, 1994) and between confidence and perceptions of appearance (Fox et al., 1994). The latter association was found to be particularly strong among girls. These findings, including the gender differences noted, are borne out in this study: for the students surveyed, the main factors that contribute to a sense of confidence included good friends with whom they can communicate effectively and satisfaction with their looks (Figure 6.7). The findings also showed that confident children are more likely to have a positive attitude toward home and school, and a good relationship with parents, and they are less likely to manifest problems associated with depression, nervousness and irritability.

The greatest proportion of students who said they always feel confident were from France and Spain (Figure 6.8). Students in Belgium (Fr.), Germany, Poland and Sweden were also more inclined to say they were always confident. Estonia, Northern Ireland, Scotland, Slovakia and Wales were among the countries whose students were less likely to always feel confident. Girls were substantially less likely than boys to always feel confident with differences up to 25 percent for 11 year olds in France. The difference between the genders is most pronounced by age 15 when, in the majority of countries, between 10 and 22 percent more boys than girls always feel confident.

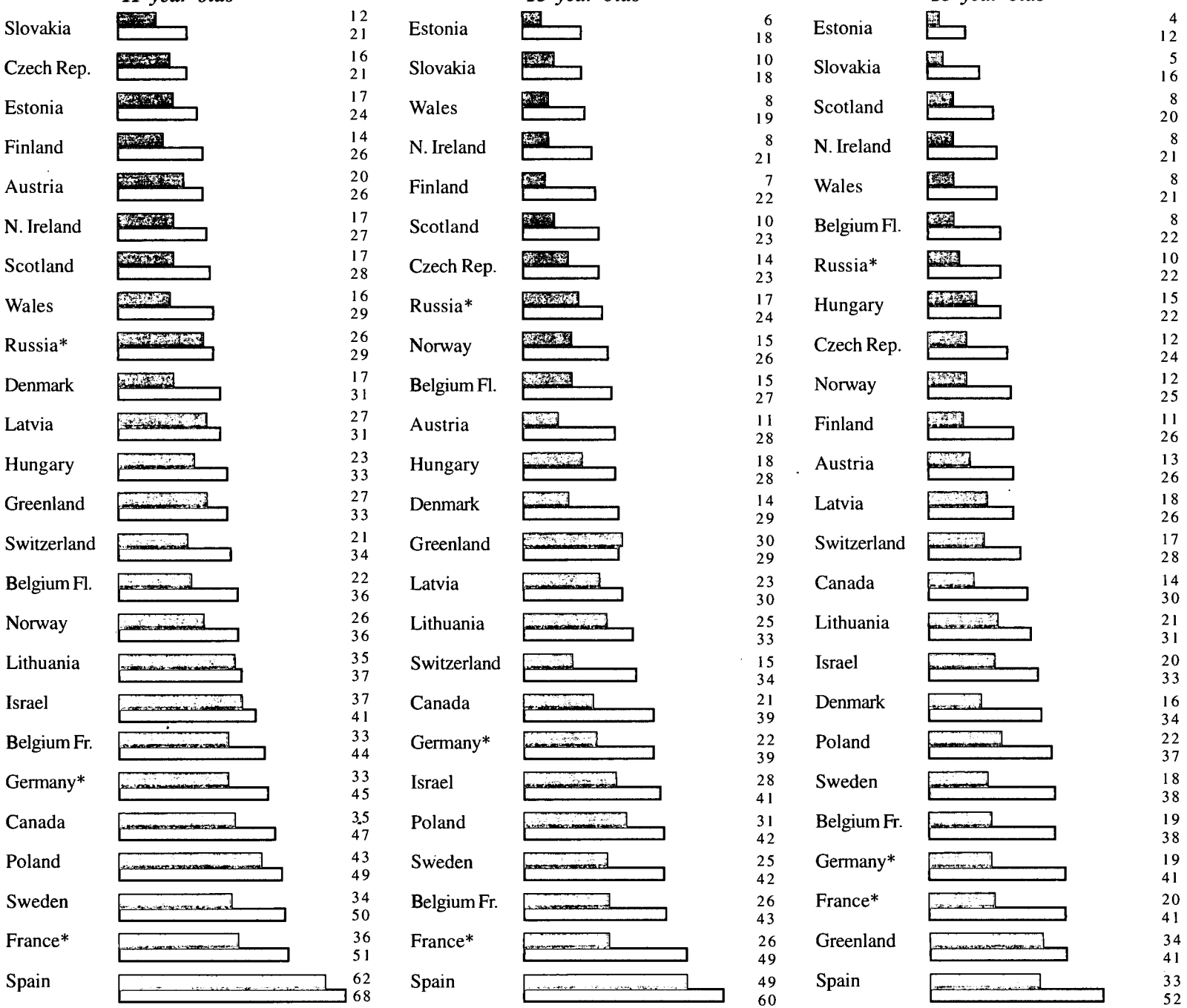
Figure 6.7 Factors associated with feeling confident

Students who are confident are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Be well integrated socially	O	O	O	O	O	O
Like their appearance	O	O	O	O	O	O
Not feel helpless	O	O	O	O	O	O
Feel happy	O	O	O	O	O	O
Feel healthy	O	O	O	O	O	O
Have good communication with their parents	O	O	O	O	O	O
Not feel stressed at school	O	O	O	O	O	O
Have a postitive attitude toward school	O	O	O	O	—	O
Not feel depressed	—	—	O	O	O	O
Achieve well in school	O	O	—	O	—	—
Not be irritable	—	—	—	O	O	O
Not feel nervous	—	—	—	O	O	O
Say parents are willing to help them with problems at school	O	O	—	O	—	—

Correlation coefficient: O .15 to .19 O .20 to .29 O .30 to .39

In general, the proportion of students' who always feel confident decreased as they got older: 13 and 15 year olds were less likely than 11 year olds to always feel confident. Although the proportions of both boys and girls tended to decrease with age, the decrease was more pronounced for girls. The exception is in Greenland where 15-year-old boys and girls were more likely than either of the other age groups surveyed to have confidence in themselves. The responses of Danish girls were similar at age 11 and 15. The decrease in the proportion of girls who always felt confident was substantial in Canada, France, Poland, Spain and Sweden.

Figure 6.8 Students who always felt confident (%)



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

5. Depression (feeling low)

Depression among young people is frequently linked to other problems such as insomnia, poor self-image and a lack of achievement in school (Morrison et al., 1985). Depression can occur in varying degrees of intensity, from a general feeling of "sadness" to a mental state characterized by thoughts of suicide (Dixon, 1987). Some studies have found over a quarter of young teens suffer from depression at some level, although relatively few are severely depressed (Connelly et al., 1993). Boys and girls who are depressed appear to react differently (Baron & Campbell, 1993). While boys may be irritable, withdraw socially and suffer from insomnia, girls become less positive about their body image; they lose their appetite, and consequently lose weight and become sad and unhappy.

In this study the students who described themselves as depressed tended to have other problems as well, with gender differences similar to those reported in other studies (Figure 6.9). At all grade levels and for both genders, they were more likely to have headaches, backaches and stomachaches, and be irritable, nervous, dizzy and tired in the morning. They tended to feel isolated from other students and to be unhappy overall. The relationships were stronger for females. This combination of physical and emotional problems is clearly a serious issue that requires the attention of health educators and health professionals.

Students in Canada, France, Finland, Israel and Northern Ireland were consistently among those more likely to report being depressed once a week or more (Figure 6.10). Eleven and 13 year olds in Denmark and 13 and 15 year olds in Hungary and Sweden were also more likely than most other students to feel depressed frequently.

Across the three age groups, students in Austria, Germany, Greenland, Poland and Switzerland were the least likely to feel depressed. There is a wide range of responses for different groups of students. For girls, there is a difference of 35 percent between the countries ranking highest and lowest for each age group. For boys, the differences between highest and lowest are 31, 29 and 28 percent for the three age groups. Girls in almost every age group in every country were more likely than boys to feel depressed, with the difference widening as age increased. In Denmark, for example, three times as many 15-year-old girls as boys said they were depressed at least once a week. Minor exceptions were found among 11-year-old respondents.

Figure 6.9 Factors associated with feeling depressed

Students who feel depressed are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Be irritable	O	O	O	O	O	O
Feel nervous	O	O	O	O	O	O
Feel lonely	O	O	O	O	O	O
Feel dizzy	O	O	O	O	O	O
Not feel happy	O	O	O	O	O	O
Have headaches	O	O	O	O	O	O
Have stomachaches	O	O	O	O	O	O
Have backaches	O	O	O	O	O	O
Have difficulty getting to sleep	O	O	O	O	O	O
Feel left out of things	O	O	O	O	O	O
Feel helpless	O	O	O	O	O	O
Feel tired in the morning	O	O	O	O	O	O
Feel alone at school	O	O	O	O	O	O
Feel stressed at school	O	O	O	O	O	O
Not feel healthy	—	O	O	O	O	O
Have a negative attitude toward school	—	O	O	O	O	O
Lack confidence	—	—	O	O	O	O
Have been bullied	O	O	O	O	—	—
Want to change something about their body	O	O	O	O	—	—

Correlation coefficient: O .15 to .19 O .20 to .29 O .30 to .39 O .40+

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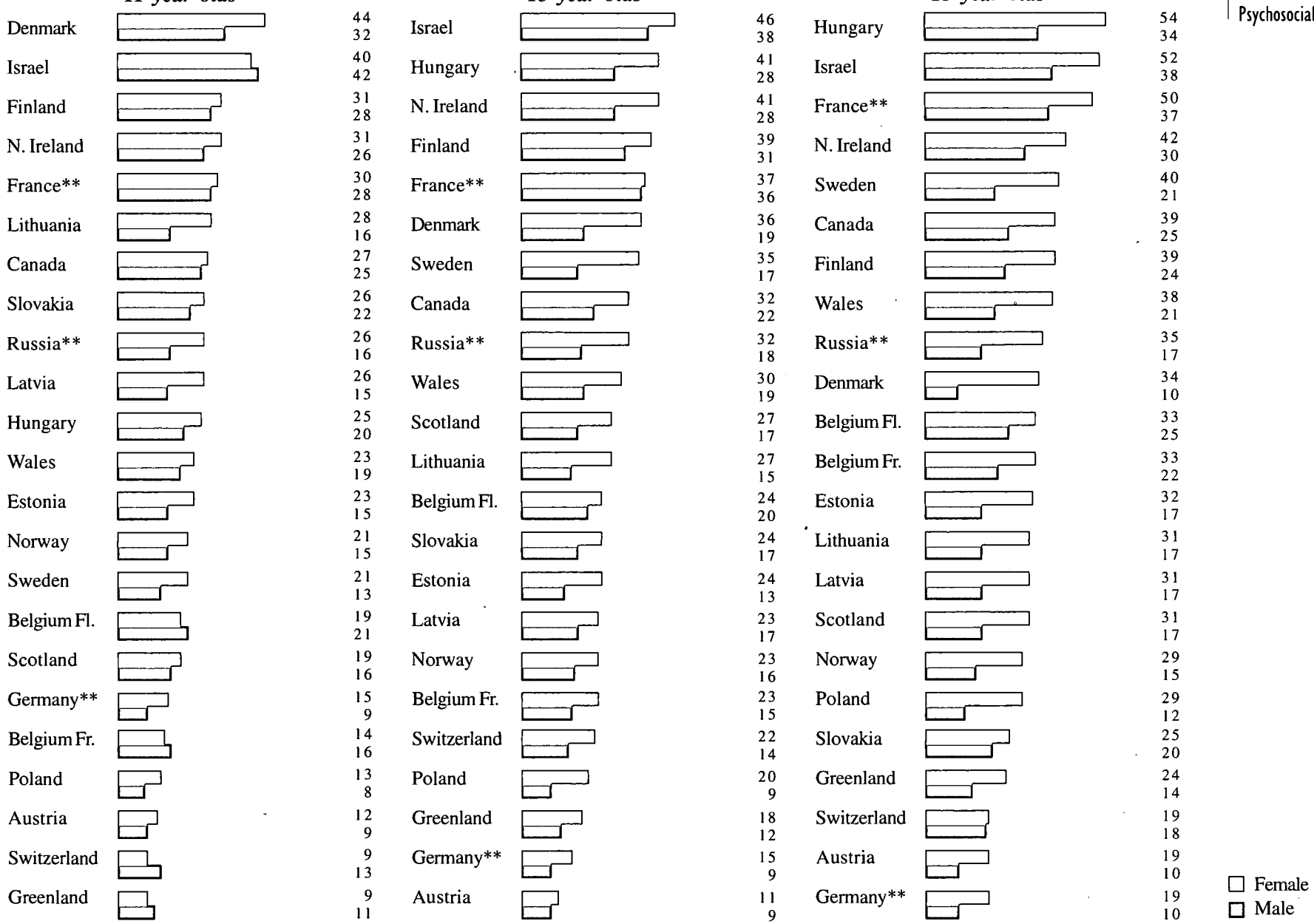
Figure 6.10 Students who felt low or depressed once a week or more* (%)



* *The Czech Republic and Spain did not include this item.*

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

Fifteen year olds were more likely than younger students to feel depressed. In only Denmark and Slovakia did more 11 year olds than 15 year olds report being depressed among both boys and girls. In the majority of countries, the proportion of girls who said they were depressed increased with age; in 18 countries, the increases were 7 percent or more with Hungarian girls registering a 29 percent increase between age 11 and 15. Boys' responses tended to increase slightly or remain about the same, the most notable exception being Hungary where they increased 14 percent and in Denmark where they dropped 22 percent.

C. Peer relationships

A number of dimensions of peer relationships are examined in this section, including friendships, time spent with friends and whether young people feel they are included or excluded from their peer group. Studies of peer relationships suggest that having friends and having supportive friends are associated with a good self-concept, a sense of belonging, a positive outlook and success in future relationships (Hartup, 1993). Other aspects of peer relationships, including bullying behaviour, are examined in Chapter 8, The School Experience.

I. Friendships

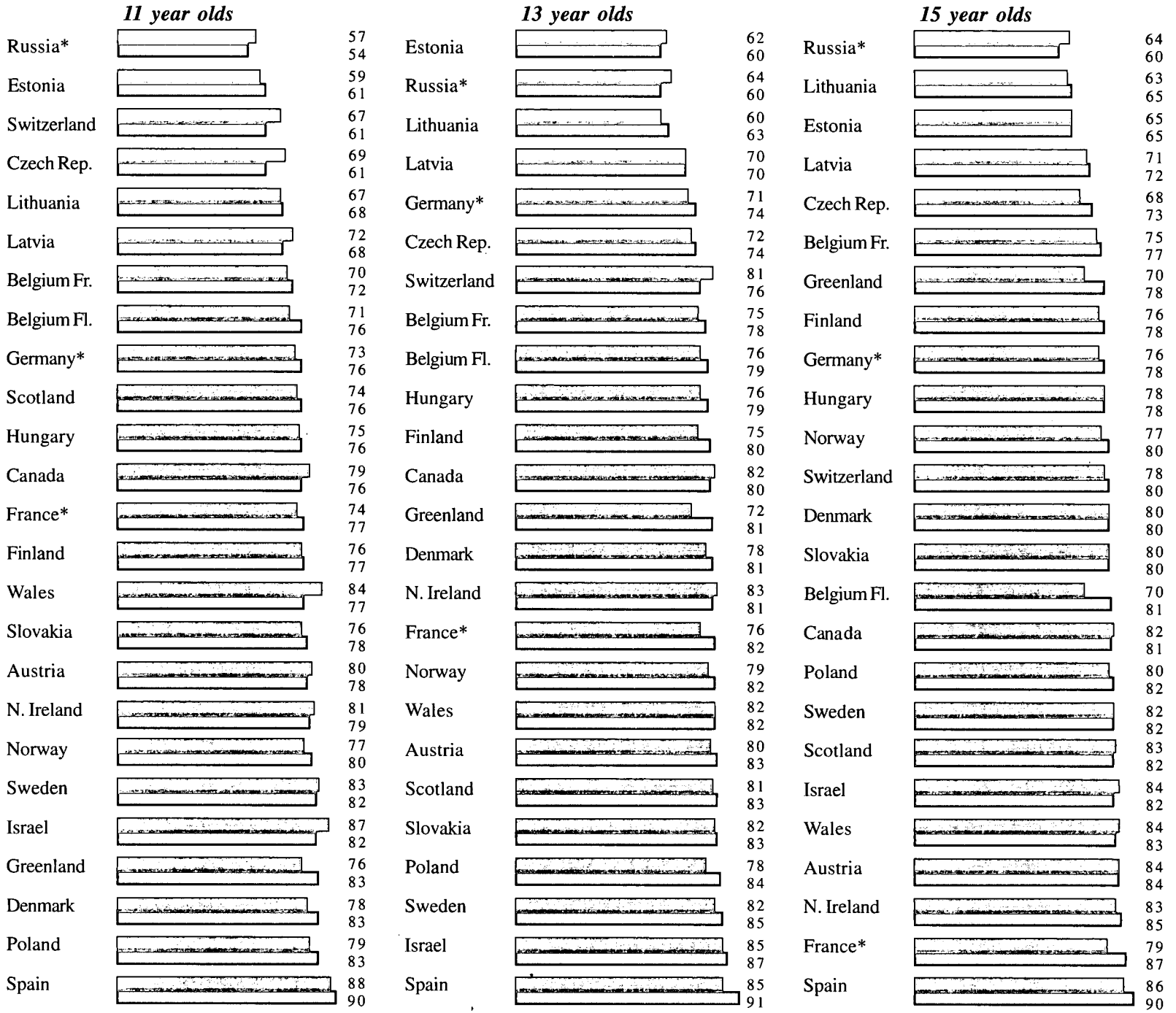
For many young people, having friends indicates that they are accepted; it is an important indicator of their self-worth. Friends can shape the lives of some young people as much as family members, and they can help move them toward or away from health-promoting behaviour (Connolly & Konarski, 1994; Hartup, 1993; Shulman, 1993; Parkhurst & Asher, 1992; Youniss & Haynie, 1992).

a. Making new friends

The proportion of students who responded that they find it easy to make new friends is below three-quarters in only a very few countries; however, there were interesting differences from country to country (Figure 6.11). For example, students in most eastern European countries were less likely to find it easy to make friends, while students in other European regions and in Israel were more likely to say they make friends easily. About 80 percent or more of students in Israel, Northern Ireland and Sweden in each age group found making new friends easy, as did almost 90 percent of Spanish students. Less than 70 percent of students in Estonia, Lithuania and Russia in each age group said they find it easy to make friends. In Russia, the country ranked lowest, about 60 percent of students or less made friends easily.

Overall, boys were slightly more likely than girls to feel that they could make new friends easily. The difference in the responses of boys and girls by country is typically small; only in the Czech Republic and Wales did a substantially higher proportion of 11-year-old girls say they made friends easily. The general tendency is for students' responses to increase slightly from age 11 to 15; however, differences are not great.

Figure 6.11 Students who found it easy or very easy to make new friends (%)



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

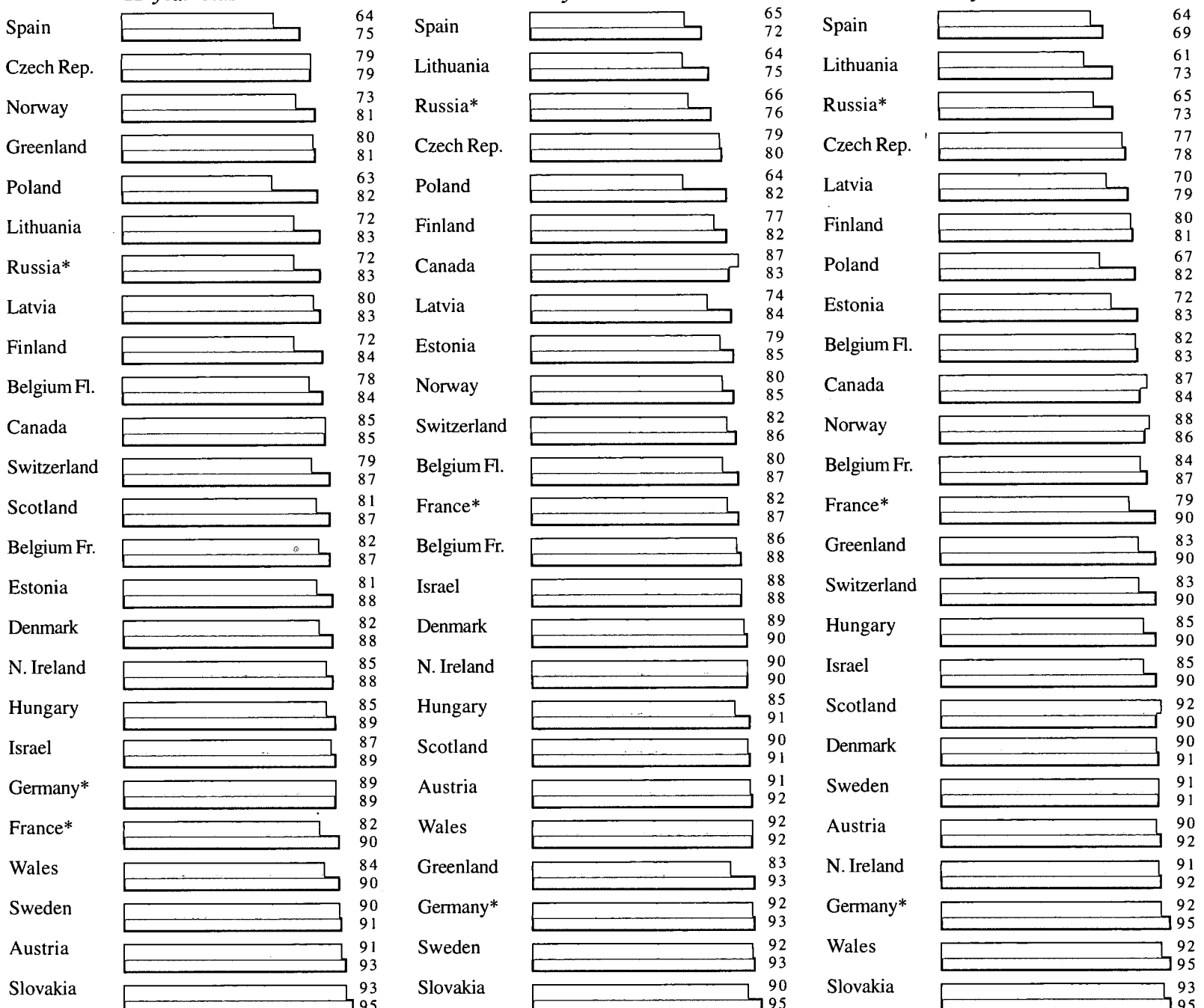
Spain

b. Close friends

The vast majority of students had two or more close friends (Figure 6.12). The students most likely to have more than one close friend were from Austria, Germany, Slovakia, Sweden and Wales. In some of these countries, 90 percent or more students had more than one close friend. In the Czech Republic, Lithuania, Poland, Russia and Spain, fewer students than in most other countries reported having two or more close friendships. Interestingly, although Spanish students were the most likely to feel they could make new friends easily, they were the least likely to have more than one close friend.

In most countries, boys were more likely than girls to have a number of close friends, but gender differences are small. The greatest gender difference is in Poland where 15 percent or more male than female students in each age group had more than one close friend. There was no clear age pattern in students' responses. In some countries – Austria, the Czech Republic, Hungary and Israel – the three age groups are within a few percentage points of each other. The largest decrease from age 11 to 15 is in Lithuania – about 10 percent for both girls and boys. The responses of girls increased from age 11 to 15 in Norway by 15 percent and in Scotland by 11 percent.

Figure 6.12 Students who had two or more close friends (%)



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

c. Talking to friends of the same gender

It is difficult for some young people to share their thoughts and feelings with their friends, even those of the same gender. For boys, ease in talking to friends of the opposite gender was more strongly correlated with ease in talking to friends of the same gender than was the case for girls (Figure 6.13). These findings reinforce those from other studies that show an association between good social skills and a sense of belonging (Hartup, 1993). At all grades, ease in talking with friends was linked to acceptance by others and for females in all age groups it is linked with not feeling alone at school. For the younger students, it was correlated with effective communication with parents.

Belgian (Fr.) and Estonian students at all ages were the most likely to report difficulty talking to their same-gender friends (Figure 6.14). Girls in France and Greenland and boys in Norway were also more likely than most other students to say they find it difficult to talk with friends of the same gender.

Countries in the United Kingdom – Scotland, Northern Ireland and Wales – as well as Finland had higher proportions of girls who said they found it easy to talk with friends of the same gender in all age groups. Thirteen and 15-year-old girls in Canada, Spain and Switzerland and 15 year olds in Sweden were also more likely than most others in their age group to indicate that they have little difficulty, but in Hungary, Lithuania, Russia and Spain, boys found it easier to talk to same-gender friends.

Girls obviously found it easier to talk with their female friends than boys did with their male friends. At age 11, only in Spain did substantially more boys (8%) find it easier to talk with their male friends. By age 15, the same proportion of boys as girls in Greenland and Spain could do so, but in no country did the proportion of boys who found it easy to talk with same-gender friends exceed that of the girls.

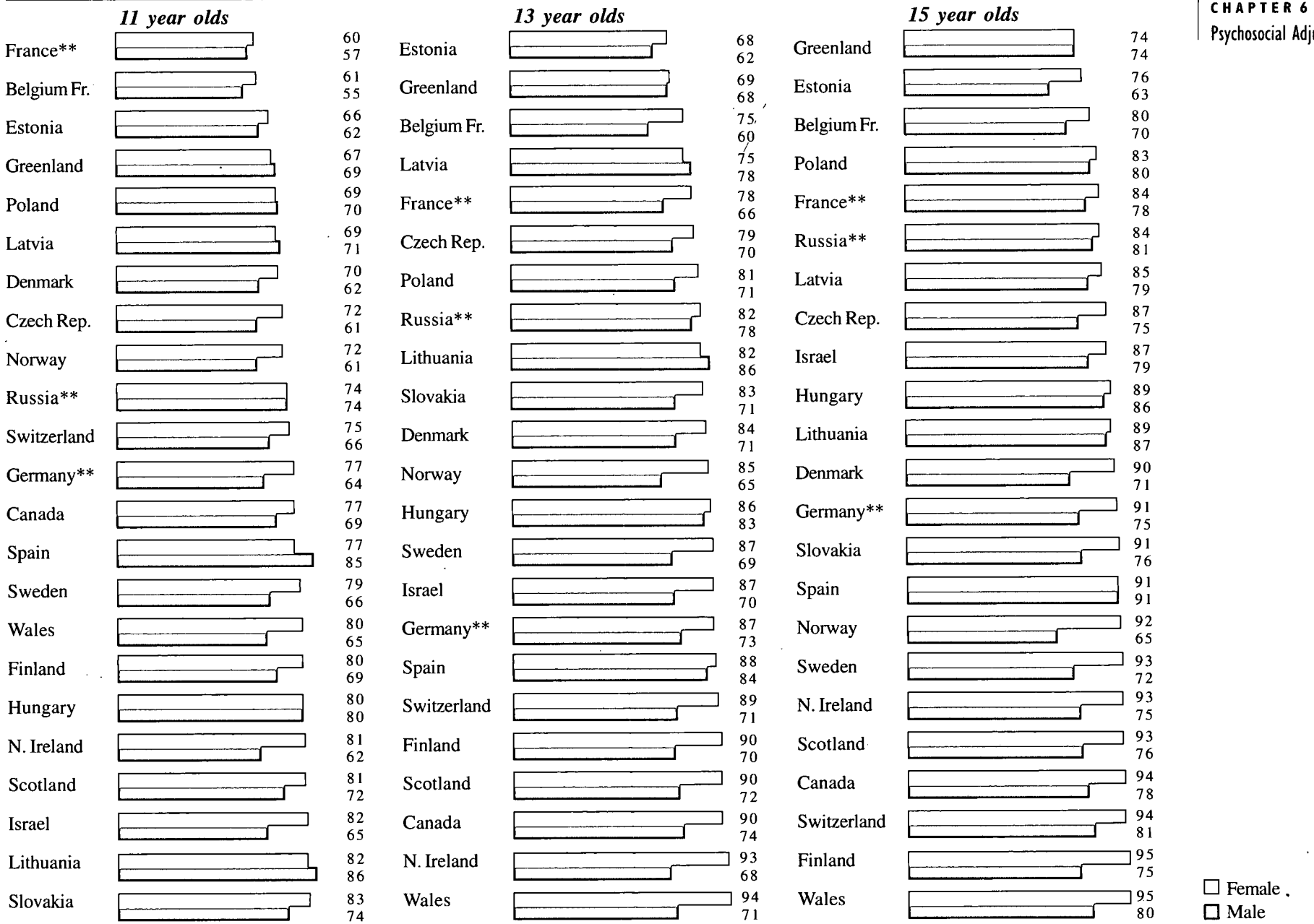
Figure 6.13 Factors associated with ease of talking to same-gender friends

Students who find it easy to talk to same-gender friends are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Find it easy to talk to friends of the opposite gender	◉	○	◉	○	◉	○
Find it easy to make new friends	○	○	○	○	○	○
Feel that other students accept them as they are	○	○	○	○	○	○
Spend time with friends after school	—	○	○	○	○	○
Have good communication with their parents	○	○	—	—	○	—
Spend evenings away from home with friends	—	○	—	○	—	○
Not feel alone at school	—	○	—	○	—	○
Have more close friends	—	—	—	○	—	○

Correlation coefficient: ○ .15 to .19 ○ .20 to .29 ○ .30 to .39 ◉ .40+

The proportions of boys and girls in all countries who replied that they found it easy to talk with friends of the same gender rose between age 11 and 15 and, in almost all countries, there was a gradual increase from 11 to 13 to 15 years of age. The greatest increases for boys and girls between age 11 and 15 were in Belgium (Fr.), France, Switzerland and Wales and, for girls, in Denmark and Norway.

Figure 6.14 Students who found it very easy or easy to talk to friends of the same gender* (%)



* *Austria and Belgium (Fl.) did not include this item.*

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

d. Talking to friends of the opposite gender

Becoming comfortable conversing with friends of the opposite sex is one of the main challenges of adolescence and a sign of growing self-confidence and the development of important social skills. Like finding it easy to talk with same-gender friends, it was associated with sociability and sense of acceptance or belonging (Figure 6.15). However, ease of talking to opposite-gender friends was also associated with drinking to excess and, among older students, smoking. Both males and females were more likely to spend time after school and in the evening with friends. Several studies show adolescent friends are very similar in attitudes and behaviours that are important to teenage culture, such as smoking and drinking (Hartup, 1993).

Boys and girls from all three age groups in the Czech Republic, Estonia and France were the least likely to find it easy to talk to friends of the opposite gender (Figure 6.16). In Hungary and Spain, students in each age group were among the most likely to feel comfortable talking to friends of the other gender. Thirteen and 15 year olds in Canada were also more likely than most other students in their age group to find it easy to talk to opposite-gender friends.

In contrast to the pattern for same-gender friends, boys were more likely to find it easy to talk to female friends than girls were to talk to male friends. However, by age 15, differences were not pronounced. Only in France, Lithuania and Poland did the differences exceed 10 percent. In Denmark this pattern was reversed, as 10 percent more girls than boys found it easy to talk to opposite-gender friends. Most 11-year-old girls tended to be reticent about talking with friends of the opposite sex. By age 15, girls were most likely to report ease in talking to opposite-gender friends in Canada, Spain and Wales.

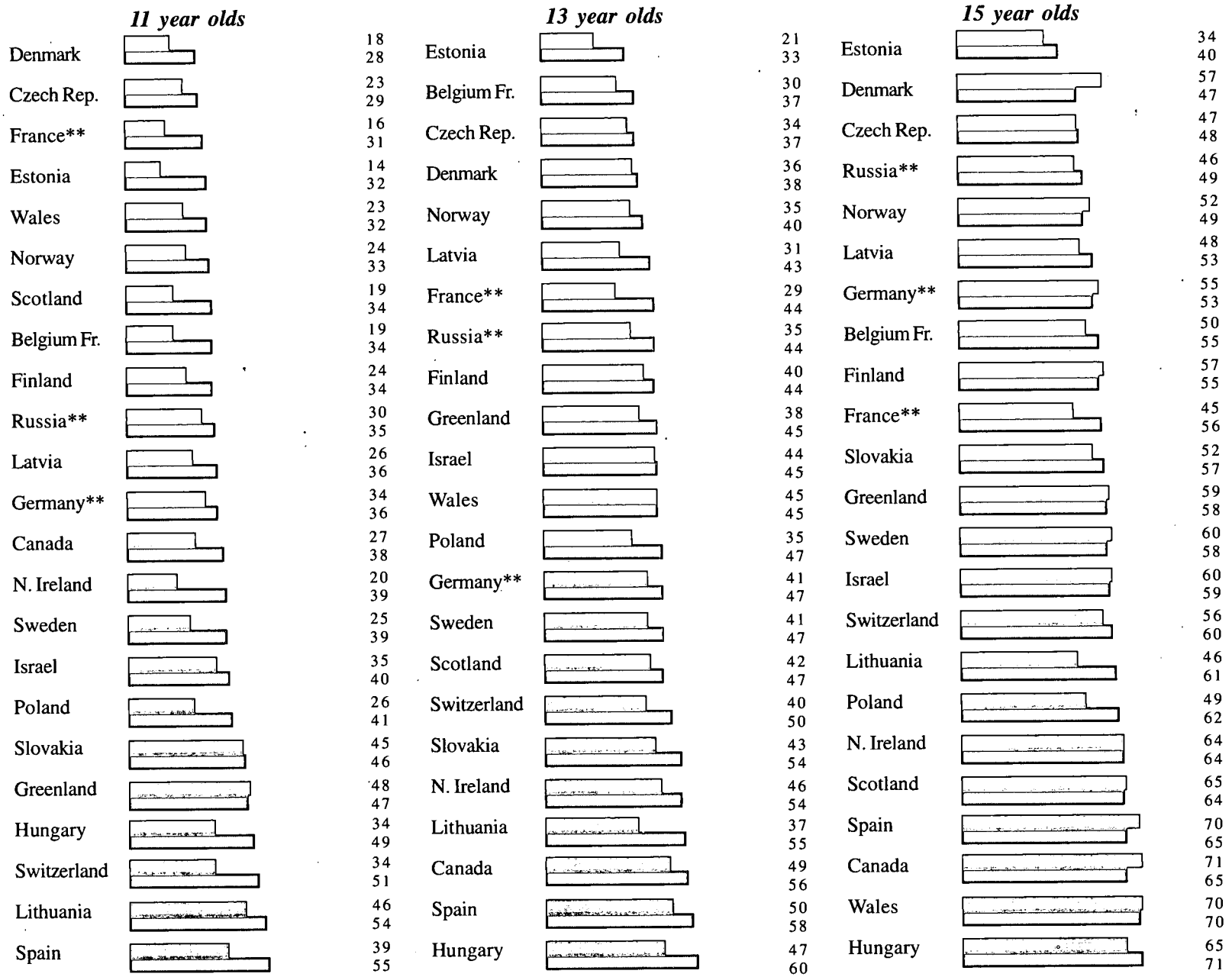
Students' capacity to talk easily with the opposite gender generally increased steadily from age 11 to 13 to 15, especially in Wales which showed an increase of 38 and 47 percent for males and females, respectively.

Figure 6.15 Factors associated with ease of talking to opposite-gender friends

Students who find it easy to talk to opposite-gender friends are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Find it easy to talk to friends of the same gender	○	○	○	○	○	○
Find it easy to make new friends	○	○	○	○	○	○
Spend evenings away from home with friends	—	—	○	○	○	○
Spend time with friends after school	—	—	○	○	○	○
Feel other students accept them as they are	—	—	○	○	○	○
Have been drunk	—	—	—	○	○	○
Smoke cigarettes	—	—	—	—	○	○
Have more close friends	—	—	—	○	—	○

Correlation coefficient: ○ .15 to .19 ○ .20 to .29 ○ .30 to .39 ○ .40+

Figure 6.16 Students who found it very easy or easy to talk to friends of the opposite gender* (%)



* *Austria and Belgium (Fl.) did not include this item.*

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

2. Time spent with friends

Spending time with friends is a common pastime for young people and the amount of time spent in the company of friends typically increases through adolescence (Larson & Richards, 1991; Brown, 1990). The amount of time young people spend together outside of school time gives an indication of their level of socialization and may indicate whether or not the time they spend with friends interferes with other aspects of their life, such as time with family members and homework. Here, the focus is on those who spend time with friends after school and during the evening most days of the week.

a. Time spent with friends after school

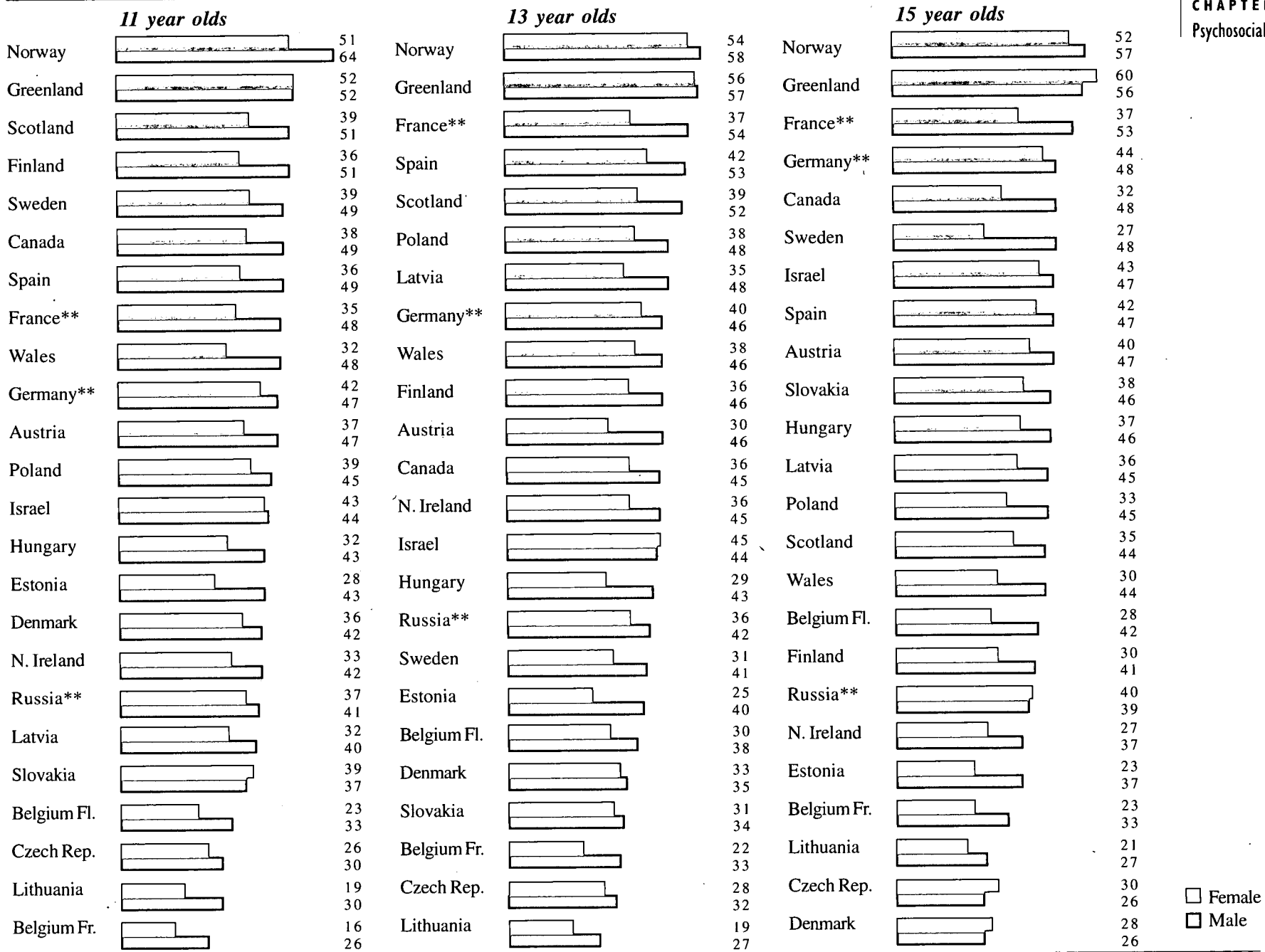
Almost all students surveyed spent time after school with their friends at least once a week. Figure 6.17 shows the proportion of students who spent almost every day – four or five days a week – with their friends after school.

The responses of students in most of the countries are clustered in the 40 to 50 percent range for boys and the 30 to 40 percent range for girls. Over half of students in Greenland and Norway spent time with friends after school most days. Girls in Israel at all three age levels, and 13- and 15-year-old French boys were also highly likely to socialize with friends almost daily after school. The least likely students to spend four or five days a week with friends after school were from Belgium (Fr.), the Czech Republic and Lithuania.

In general, more of the boys than the girls reported spending time with friends after school several days a week. In several countries there is a substantial difference between the responses of girls and those of boys; that is, 10 percent or more boys than girls spent time with friends after school four or five days a week. This occurred across the age groups in Belgium (Fr.), Estonia, Finland, France and Sweden.

Although many students' responses were similar from age to age by country (e.g., Canada, Germany, Israel), there is no consistent pattern. The greatest decrease in response between age 11 and 15 among girls was in Sweden (12% fewer 15 year olds than 11 year olds); in Denmark, 16 percent fewer 15-year-old boys than 11-year-old boys spent four to five days a week with friends after school.

Figure 6.17 Students who spent time with friends after school four or five days a week* (%)



* *Switzerland did not include this item.*

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

b. Time spent with friends in the evenings

Again and again in this report it has been noted that a significant amount of time spent with friends in the evenings appears associated with health-risk behaviours. Figure 6.18 summarizes these relationships. While the student who spends a great deal of time with friends was more likely to have good communication skills, he/she was also more likely to smoke and drink to excess. Other relationships involved poor eating habits, watching videos and playing computer games. Parents should be concerned when their teenagers begin to spend a great deal of time with their friends in the evenings.

Figure 6.19 presents the proportions of students in each country who said they spend five or more evenings a week with friends. Some countries stand out as having high proportions of students who reported this behaviour across age groups: Finland, Greenland, Northern Ireland, Norway, Scotland and Wales. Far fewer students in Austria, Belgium (Fr.), the Czech Republic, France, Lithuania and Switzerland reported that they spent five evenings or more a week with friends – fewer than five percent of Belgian (Fr.) students.

Similar to after-school socializing, more boys than girls spent five or more evenings a week with friends in almost every country.

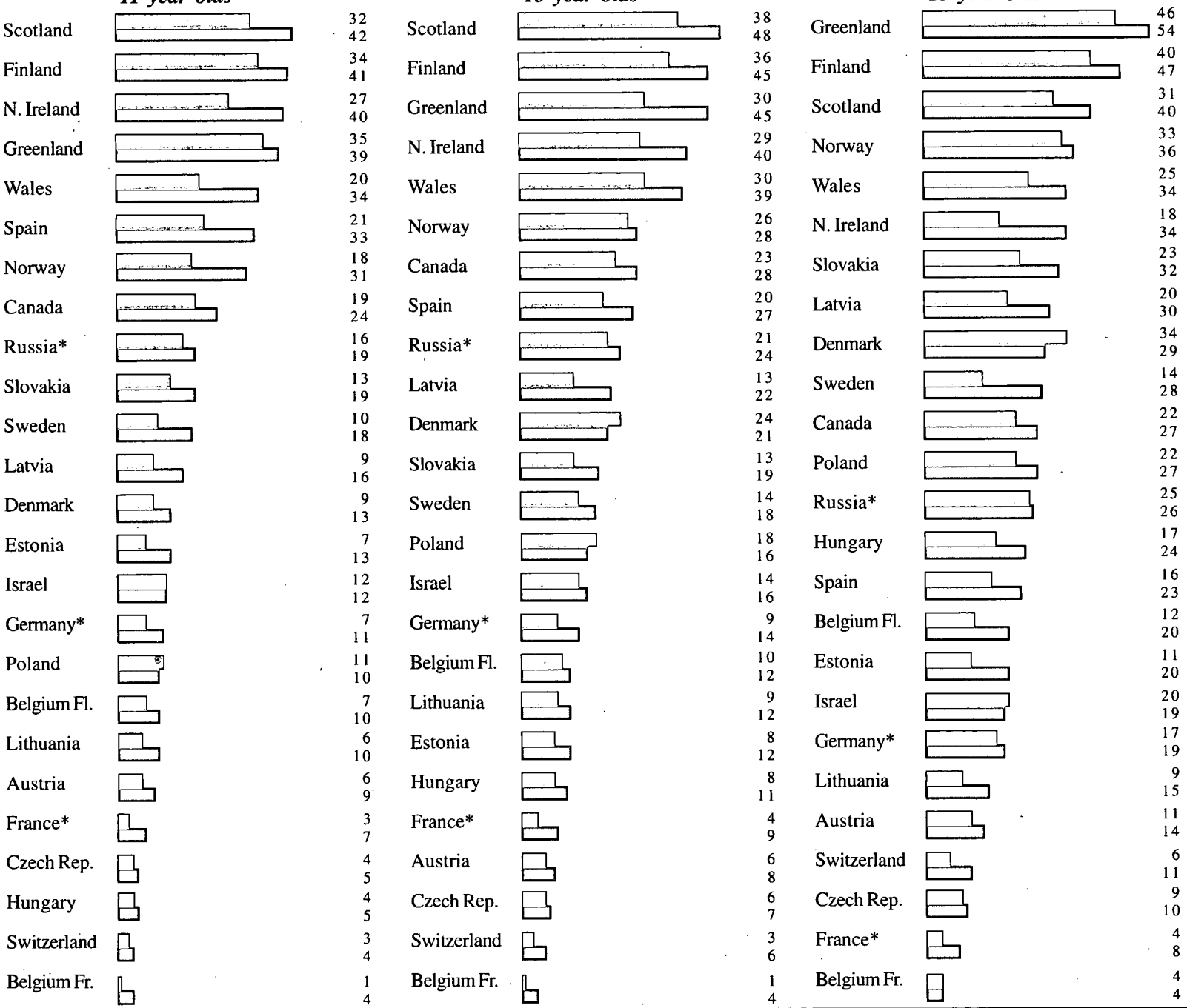
Fifteen year olds were more likely than younger students to spend at least five evenings a week with friends. The largest difference is in Denmark where between ages 11 and 15, 25 percent more girls and 16 percent more boys spent five to seven evenings a week with friends. There were also notable increases in Greenland, Hungary, Latvia, Poland and Slovakia (boys and girls), and in Norway (girls). In Northern Ireland, Scotland and Spain, the responses of both boys and girls actually decreased as age increased.

Figure 6.18 Factors associated with spending evenings away from home with friends

Students who spend evenings away from home with friends are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Be well integrated socially	O	O	O	O	O	O
Eat potato chips	O	O	O	O	O	O
Watch videos	O	O	O	O	O	O
Eat hamburgers/hot dogs	O	O	O	O	O	—
Smoke cigarettes	—	—	O	O	O	O
Have been drunk	—	—	O	O	O	O
Drink sweet soft drinks	—	—	O	O	O	O
Play computer games	O	O	—	—	—	—

Correlation coefficient: O .15 to .19 O .20 to .29 O .30 to .39

Figure 6.19 Students who spent five to seven evenings per week with friends away from home (%)



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

D. Relationship with parents

In studies of adolescents, among the variables shown to be related to positive relationships with parents are higher self-esteem, less depression, lower risk-taking scores (Field et al., 1995; Ryan et al., 1994), greater involvement in school and community activities (Chubb & Fertman, 1992) and better school performance (Ryan et al., 1994). The basis of an effective parent-child relationship is open communication. The quality of the relationship in families where children find it easy to talk with their parents will almost certainly be better than those where children find communicating difficult.

For the items on communication with mother and father, students had four response choices: very easy; easy; difficult; and very difficult. The very easy and easy responses have been combined for this analysis. These data reinforce other researchers' findings that young people tend to find it easier to communicate with their mother (Shulman, 1993).

A parent communication scale was developed that included items related to ease of talking to mother and ease of talking to father. Scale scores were correlated with the other survey items and the results are summarized in Figure 6.20. In comparison with other research, these findings tend to show a similar relationship with attitude toward school and other sound relationships, but not the same associations with risk-taking behaviours. Perhaps the most important factors found to be associated with effective communication with parents were good relationships with peers and satisfaction with school. Poor relationships with parents were associated with loneliness, a lack of confidence, helplessness, irritability, sleep problems and, among girls, depression. For the younger two groups of students, perceived family economic status was associated with effective parent-student relationships.

Figure 6.20 Factors associated with parent-child communication

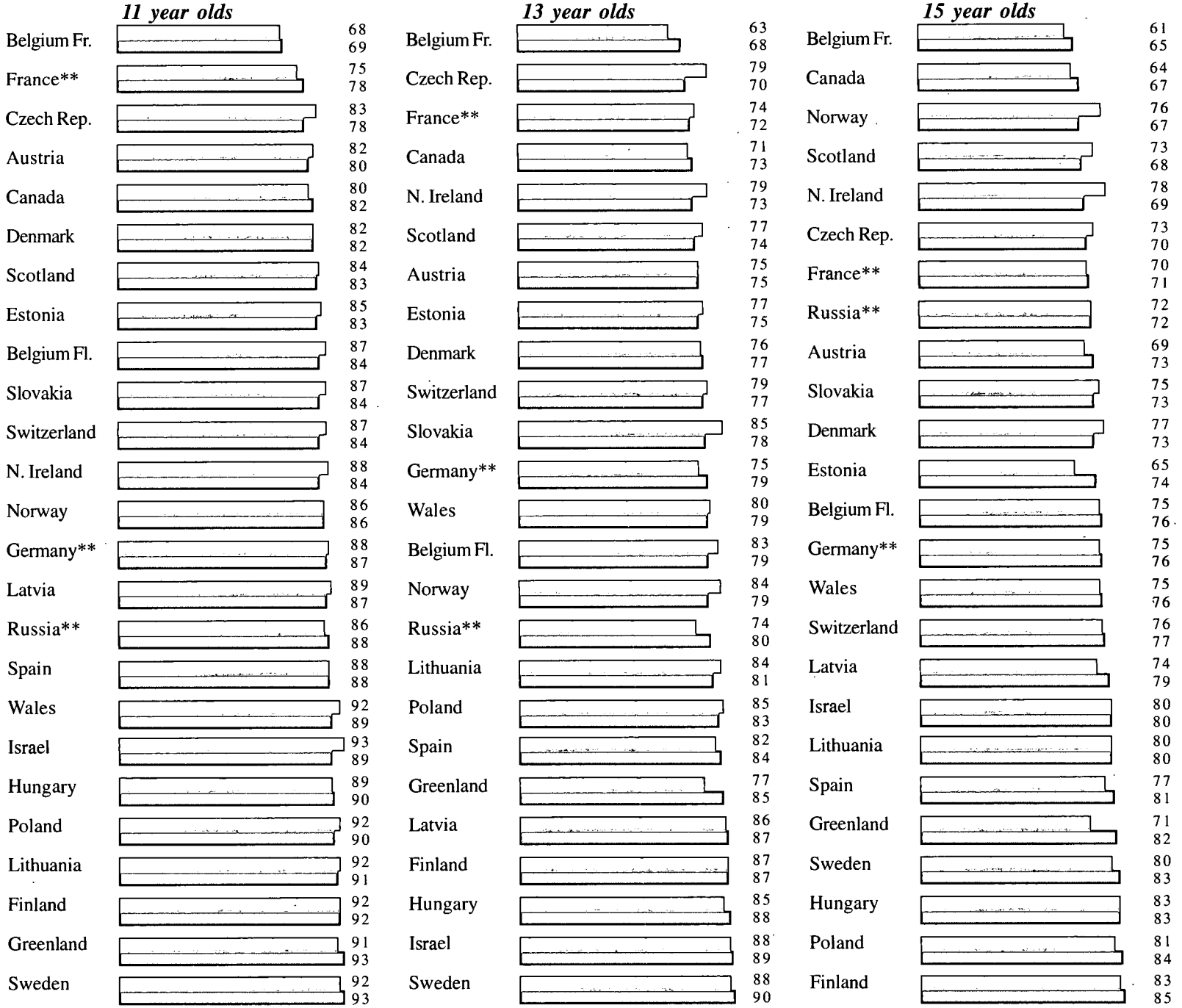
Students who communicate well with their parents are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Say parents are willing to help them with problems at school	O	O	O	O	O	O
Be well integrated socially	O	O	O	O	O	O
Feel happy	O	O	O	O	O	O
Have a positive attitude toward school	O	O	O	O	O	O
Not feel helpless	O	O	O	O	O	O
Feel confident	O	O	O	O	O	O
Believe their family is well off	O	O	O	O	—	—
Not be tired in the morning	—	O	—	O	O	O
Say parents encourage them to do well at school	—	—	—	O	O	O
Not have difficulty sleeping	—	O	—	O	—	O
Not be irritable	—	—	—	O	O	O
Be satisfied with their appearance	—	O	O	O	—	—
Say parents are willing to come to school to talk to teachers	—	—	—	O	—	O
Not feel depressed	—	—	—	O	—	O
Not feel stressed at school	—	O	O	—	—	—

Correlation coefficient: O .15 to .19 O .20 to .29 O .30 to .39 O .40+

I. Communicating with mother

The majority of students reported communicating easily with their mother about things that really bother them; the percentage is above 60 for all age groups in all countries and the variation in responses across countries was not great. Across all age groups, more students in Finland, Greenland, Hungary, Israel and Sweden than in other countries said they found it easy to communicate with their mother (Figure 6.21).

Figure 6.21 Students who found it very easy or easy to talk to their mother about things that really bother them* (%)



* *These figures are based on totals that do not include the response, "Don't have or see this person".*

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

Students in Belgium (Fr.) were more likely than all others to find it difficult to talk with their mother. Eleven and 13 year olds in France and the Czech Republic, and 13 and 15 year olds in Canada, also tended to have more trouble than others talking with their mother. Other students who did not find communication easy were from Austria and Northern Ireland.

Gender differences were remarkably small for all three age groups. The proportion of students who found it easy to talk with their mother decreased from age 11 to 15 in every country.

2. Communicating with father

Far fewer students felt they could talk easily with their father about things that really bother them (Figure 6.22) than felt they could do so with their mother. Swedish students were the most likely to find it easy to talk with their father. The responses of students in Finland, Greenland, Hungary, Israel and Lithuania also indicated a high level of ease in child-father communication.

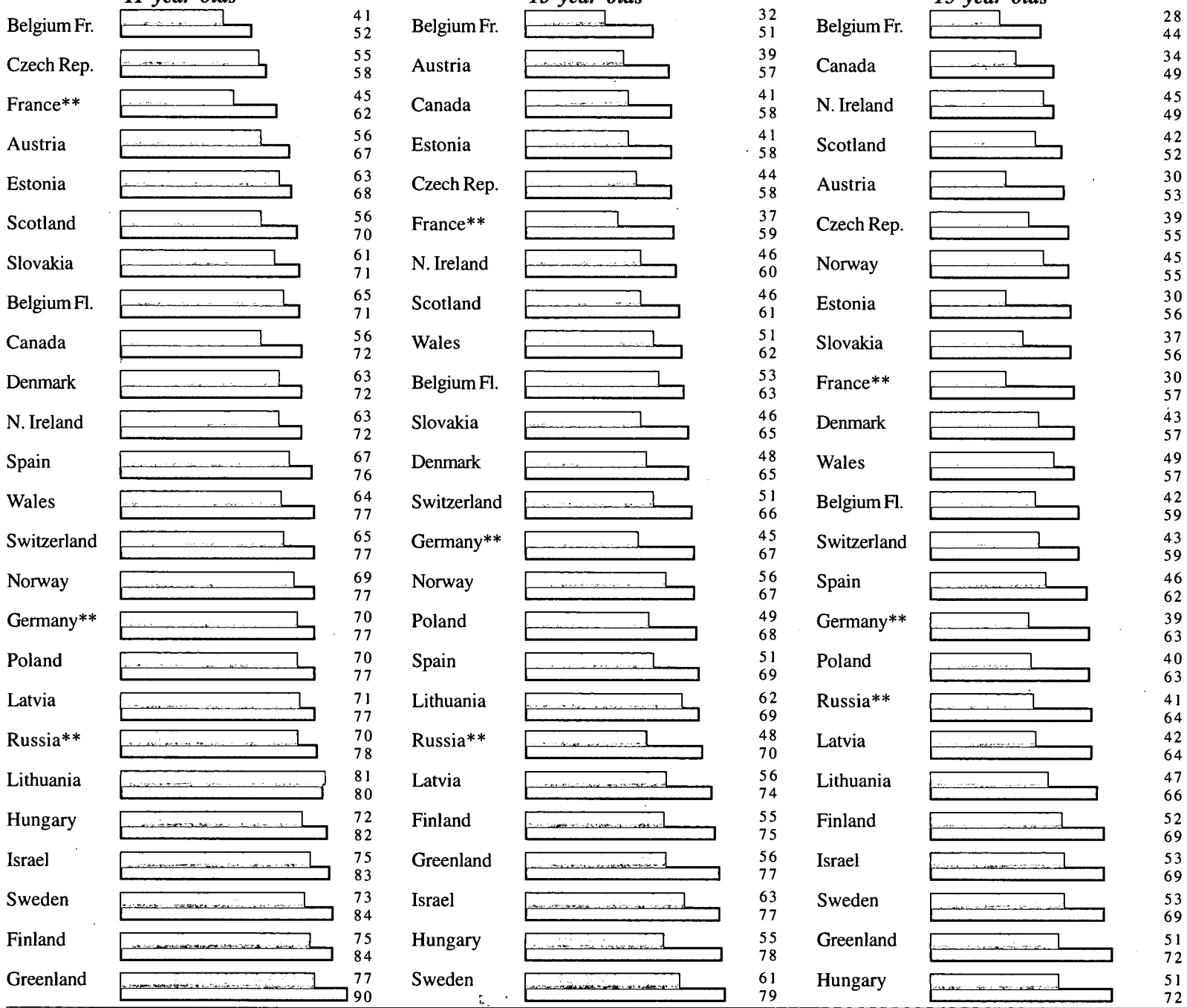
In general, students in Austria, Belgium (Fr.), the Czech Republic and Estonia were less likely to communicate easily with their father. Fifteen year olds in Northern Ireland and Scotland, 11 and 13 year olds in France, and 13 and 15 year olds in Canada were also less likely than many others to do so.

In all countries and at all age levels (with one exception – 11-year-old Lithuanians), boys were more likely than girls to find it easy to talk with their father. There were substantial differences between 15-year-old boys and girls in most countries, with the largest in Estonia (26 percent) and France (27 percent).

The proportion of students who found it easy to talk with their father decreased from age 11 to 13 to 15 in the majority of countries. The proportion of girls decreased at a far higher rate than that of boys from age 11 to 15. In Estonia, for example, there was a 33 percent decrease for girls while that of boys was only 12 percent.

There was some similarity between students' responses to the two parent items. Countries, such as Finland, Sweden, Israel and Hungary, tended to rank high on talking with both mother and father; Belgium (Fr.), the Czech Republic and France were low on both measures.

Figure 6.22 Students who found it very easy or easy to talk to their father about things that really bother them* (%)



* *These figures are based on totals that do not include the response, "Don't have or see this person".*

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

E. Summary

There were substantial differences across countries among young people in the areas of mental health and relationships with parents and peers. The majority of students do not describe themselves as very happy. The youngest students tend to have the most optimistic outlook and, in most countries, slightly more boys than girls feel very happy. Younger students are less likely to feel lonely and depressed, and more likely to feel a sense of confidence. Boys are far more likely to feel confident, while girls are more likely to feel lonely, depressed and helpless. It appears that, as children reach their adolescent years, they feel less secure, both psychologically and in their social environment.

Although the majority of students make friends easily and have at least two close friends, the complexities of friendship are clearly difficult for a small minority. These students feel excluded from their peer group. Most of the young people surveyed seem to spend a reasonable number of days and evenings with friends; some, however, spend excessive amounts of time with friends – almost every day after school and every evening. For youth who are seeking recognition and acceptance, the influence of peers can sometimes negate that of parents, particularly with respect to the use of tobacco, alcohol and drugs.

Boys and girls are almost equally likely to find it easy to make new friends and to have two or more close friends. Boys, however, spend far more time than girls with their friends after school and in the evening. The differences in students' responses to peer-relationship items across age groups indicate that social skills develop rapidly from age 11 to 15.

Students are able to communicate more easily with their mother than with their father but some students have difficulty communicating with both parents.

CHAPTER 7

Injuries

Spain

CHAPTER 7

Injuries

A. Introduction

Injuries are the greatest health problem facing school children in the western world (Harel, 1988; Scheidt, 1988; Committee on Trauma Research, 1985; Gordon, 1949; Wheatly, 1949). The majority of deaths from injury throughout the world are among children and youth; injuries represent the leading cause of death in the first half of the human life span (Barss et al., 1991). Nonfatal injuries account for a large proportion of hospital and school-loss days as well as an unacceptable amount of lifetime disability (Scheidt et al., 1995; Baker et al., 1992; Rodriquez, 1990; Harel, 1988). Although the risk of injury is so great that most people sustain a significant injury at some time during their life, little attention is given to injuries in the research on children's health. The absence of objective information on injuries has inhibited the development and implementation of injury prevention initiatives. This report provides the type of information that can be used to monitor patterns of injury across three age groups.

There is a tendency among the general public to believe that most injuries occur by chance, but in fact the occurrence of injuries is to a great extent determined by the characteristics of the environment in which people live and play and the products they use. Effective prevention strategies are based on an understanding of the circumstances in which injuries can occur and the risk behaviours that cause them (Harel, 1988; Scheidt, 1988; Rivara, 1985). Environmental changes can be made to playing fields, arenas and homes to reduce the risk of injury. Equipment used in play and sport can be adapted to reduce risks. Protective equipment for use in sport can be improved. Supervision and education of young people, especially in school settings, can also reduce the risk of injury. And of course, legislation regarding such things as seat belt use and bicycle helmets can play an important role in prevention.

In this chapter, the types of injuries that require medical treatment are considered, as well as the places they occur and the activities in which those injured are engaged when they are hurt. The use of seat belts as an example of preventive behaviour is also examined.

It is probably advisable to be cautious when comparing injury rates across the participating countries because of a number of factors. The data were collected at different times during the school year across countries (see Chapter 1 for details) and injuries tend to vary by season. There are differences across countries in the availability and utilization of medical services and the extent to which people define an injury as requiring medical attention. Therefore, it is more useful to look at the types of injuries by age group and gender and the situations in which they occur.

Seven items on the survey were directly concerned with injuries. These items were derived from the questions used in several national and international studies on childhood and adolescent injuries (Scheidt et al., 1995; Harel et al., 1994; National Center for Health Statistics, 1989).

Respondents were first asked how many injuries they had incurred during the past 12 months which had been treated by a doctor or a nurse. If students reported an injury, they were asked to respond to six additional questions; if they reported more than one injury, they were asked to answer the same six questions focusing on the most serious injury they had experienced.

The severity of the injury was indicated by two measures: 1) an injury that needed medical treatment such as the placement of a cast, stitches, surgery, or an overnight stay in hospital; and 2) an injury that caused the respondent to miss at least one full day of school or other usual activity.

Respondents named the place where the injury occurred (home, school, sport facility, for example), what they were doing when the injury occurred (riding a bicycle, playing, engaged in a sport), and the type of injury (broken bone, cuts, concussion or other head injury). Respondents also indicated the month of the year in which they were injured.

The injury questions were not used on the survey in the Czech Republic and Germany.

B. All injuries

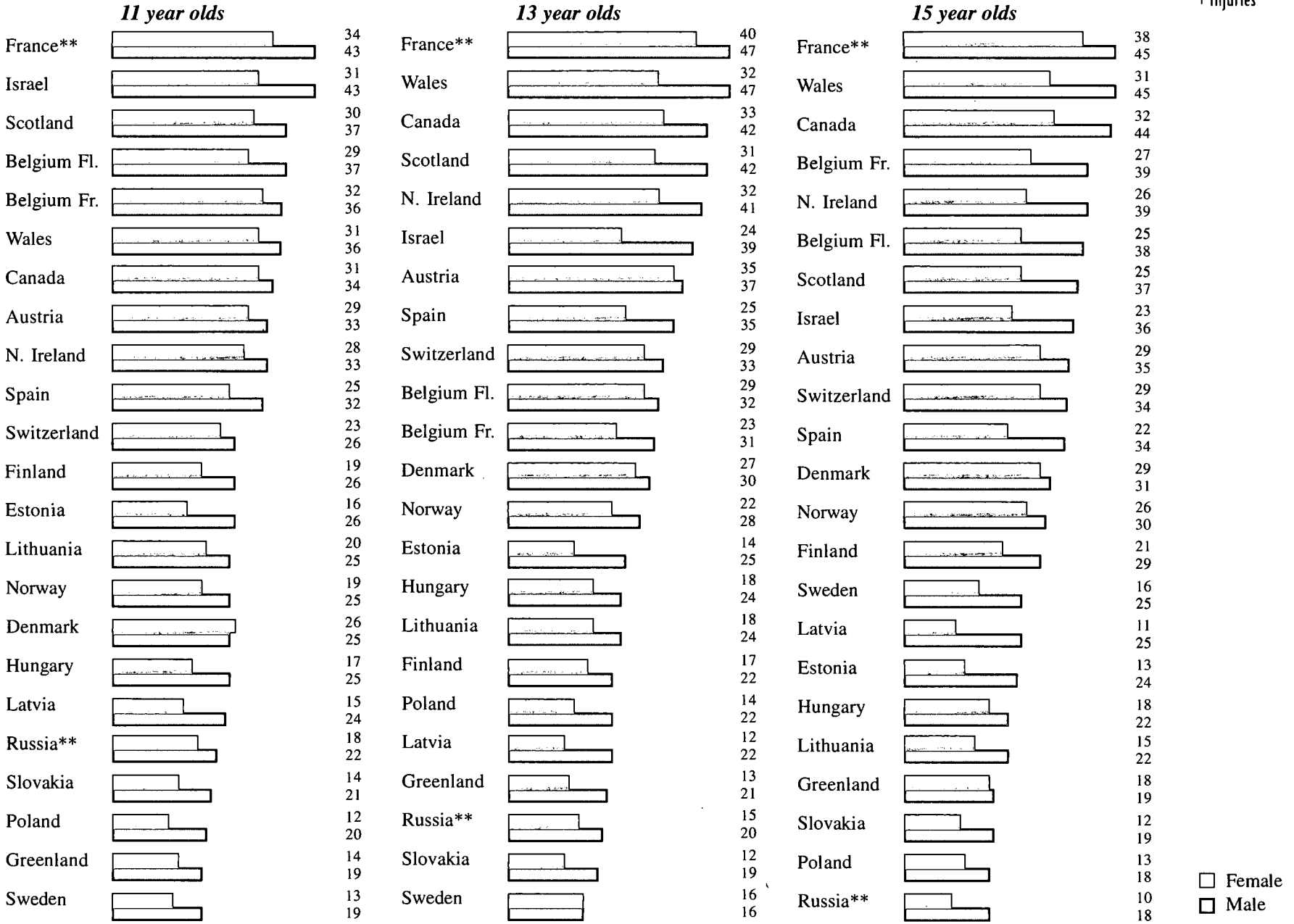
There is very little data describing the characteristics of youth who are more inclined to be involved in accidents. Generally speaking, the concepts of inexperience, risk-taking, sensation-seeking, impulsiveness and drug abuse are used to describe those behaviours that may contribute to injury (Robertson, 1992). A preliminary analysis using aggregated data from this survey yielded correlation coefficients of over 0.15 between alcohol abuse and injury among 13- and 15-year-old boys. Further analyses of these data are underway to investigate psychosocial and behavioural factors associated with injuries among school-aged children in various countries.

Figure 7.1 presents the percentage of youth who reported at least one injury requiring medical attention in the previous 12 months. The figure, therefore, indicates the proportion of students who sustained such an injury and does not represent the total number of injuries requiring medical attention sustained by the respondents during the year before the survey was conducted.

Overall, boys in all countries surveyed reported a higher injury rate than girls. In about half of the countries, over one-third of boys and over one-quarter of girls reported at least one injury during the previous year. The highest rates of injury were among 13- and 15-year-old boys in Canada, France and Wales. In most countries, gender differences are greater among older students surveyed. Denmark is an exception; there, boys and girls in all age groups reported similar rates of injury.

The results also indicate that for all age groups countries such as Canada, France, Scotland and Wales show high injury rates when compared with Greenland, Poland, Russia, Slovakia and Sweden.

Figure 7.1 Students who reported injuries during the past year* (%)



* *The Czech Republic and Germany did not include this item.*

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

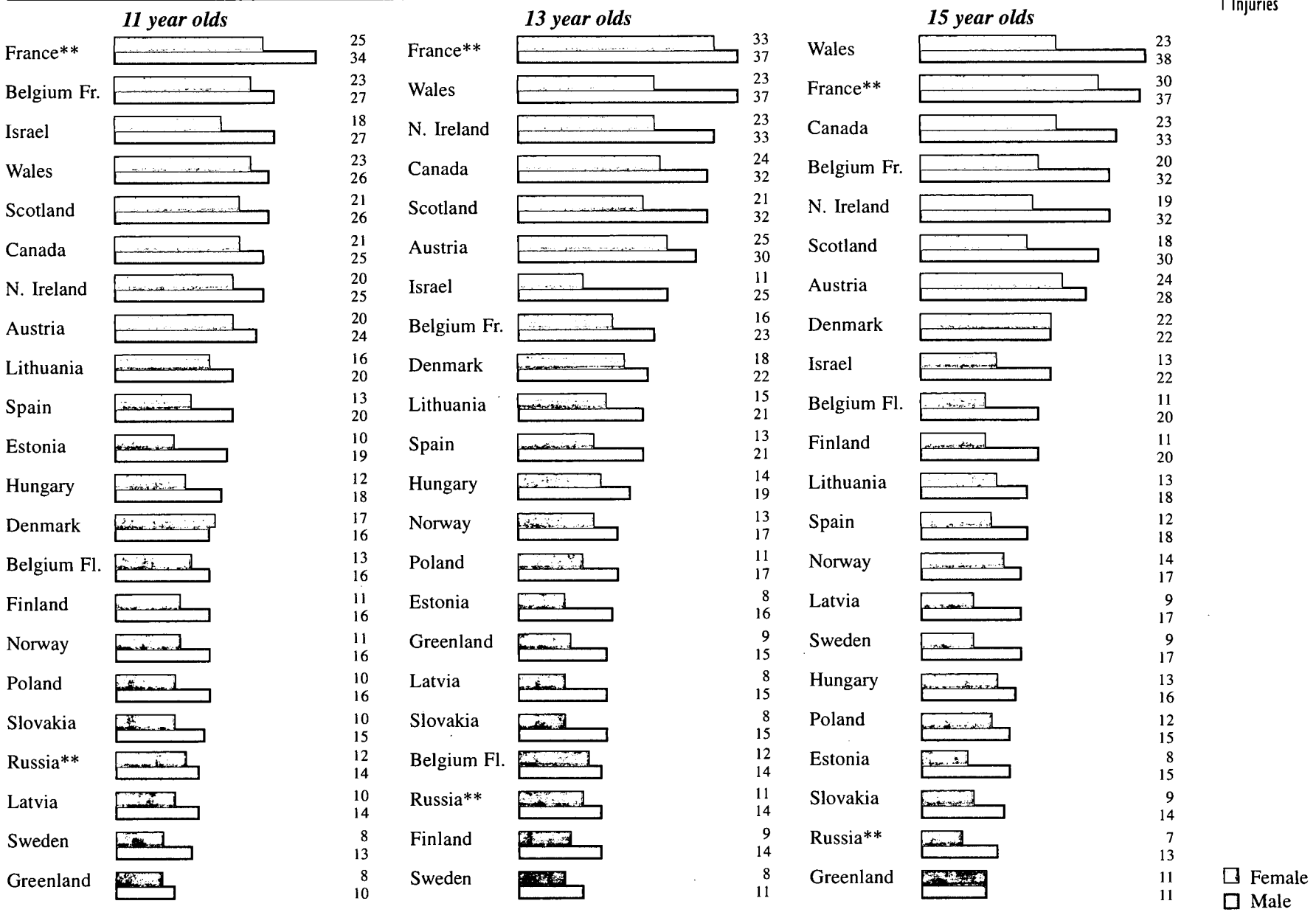
C. Severe injuries

Figure 7.2 presents the proportion of young people who reported a serious injury, i.e., an injury that caused them to miss at least one day of school or required medical procedures such as placement of a cast, stitches, surgery or hospitalization. To give some indication of the magnitude of the database employed in this study, the figure is based on 21,807 injuries from 95,939 total students. In general, about two-thirds of the injuries reported by students in the previous year were classified as severe using these criteria. Severe injury rates for boys ranged from 10 to 38 percent across all age groups, while severe injury rates for girls ranged from about 7 to 33 percent.

Although these data relate only to severe injuries, the effects of gender, age group and, most notably, cross-national differences are almost identical to the data presented in Figure 7.1. In countries with high injury rates, such as Canada, France, Northern Ireland, Scotland and Wales, more than one of four boys and one of five girls experienced a severe injury during the past year, while among low injury rate countries such as Greenland, Latvia, Poland, Russia and Sweden, fewer than one of five boys and one of seven girls experienced a severe injury.

Canada

Figure 7.2 Students who reported severe injuries during the past year* (%)



* *The Czech Republic, Germany and Switzerland did not include this item.*

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

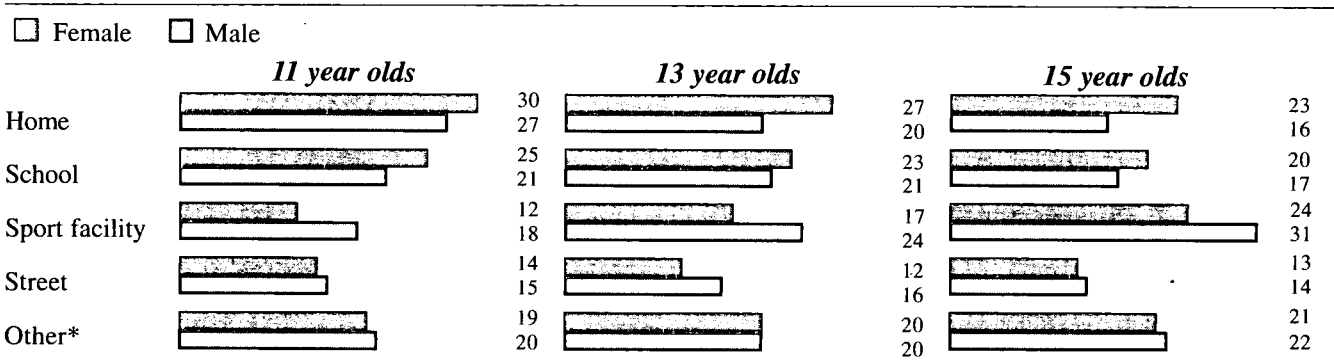
D. Where injuries occur

Identifying where injuries occur is the first step in developing prevention programs. Students were asked where their most serious injury occurred and that information is summarized in Figure 7.3.

A significant shift was evident from age 11 to 15 in the proportion of injuries that took place in each setting. There was a decline in the proportion of injuries occurring in and around the home and an increase in the proportion occurring at sport facilities. The proportion of street-related injuries was similar across genders and age groups. Girls were more likely to be injured at home than boys, but both males and females became less likely over time to be injured at home. The proportion of injuries occurring at school was substantial and was similar for all age groups and genders. The category "Other" in Figure 7.3 included injuries experienced in parks or recreational areas, on a farm or at work.

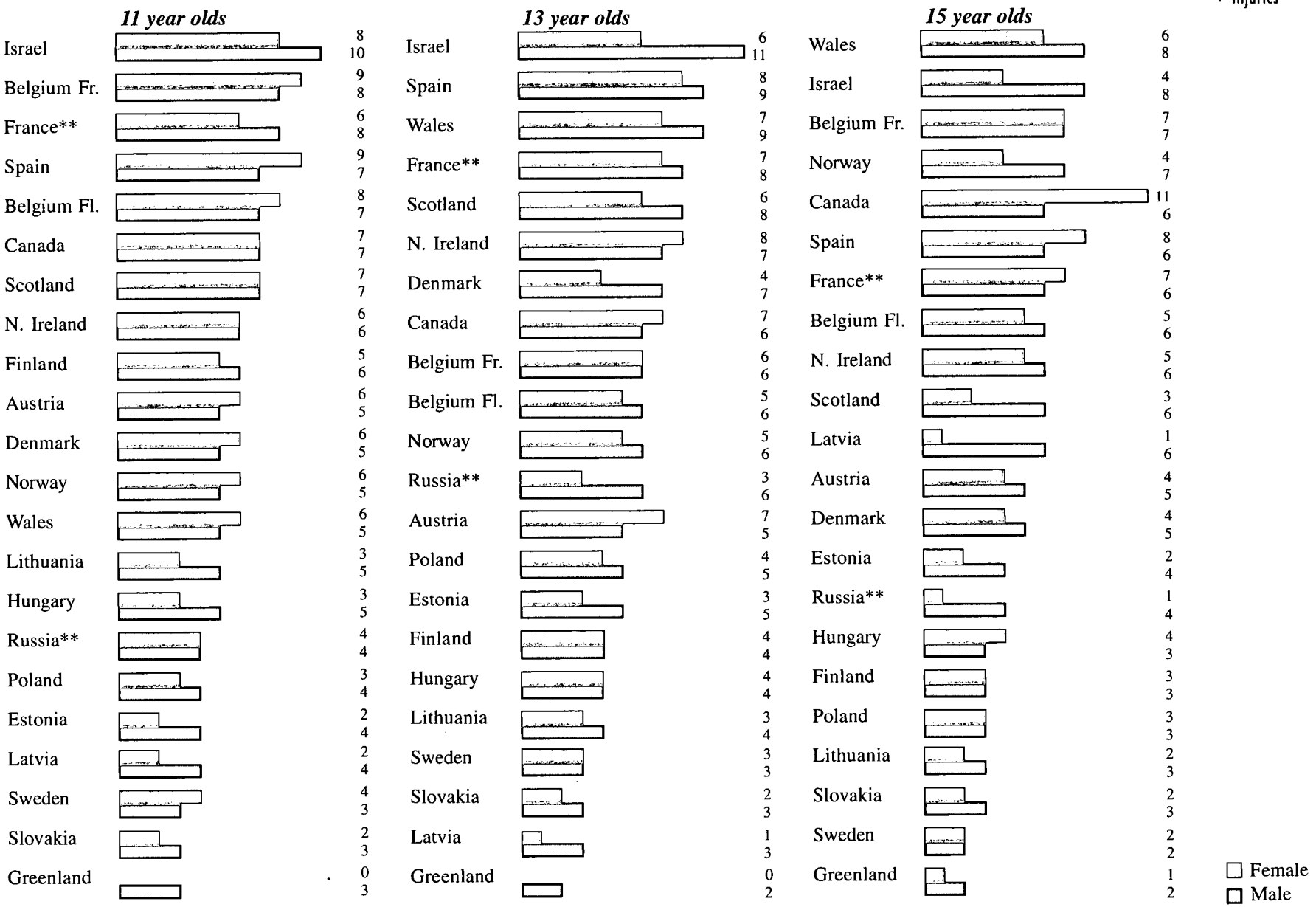
Injuries at school are presented, by country, in Figure 7.4. The numbers in this figure represent the proportion of young people whose most serious injury during the last 12 months occurred at school. Generally speaking, boys were more likely than girls to have been injured seriously at school in the past year. Israeli 11- and 13-year-old boys and Canadian 15-year-old girls reported the highest proportion of injuries at school. School injury rates were lowest in Greenland, Latvia, Slovakia and Sweden.

Figure 7.3 Place most serious injury occurred (%)



* *"Other" was a response choice for this item.*

Figure 7.4 Injuries at school* (%)



* *The Czech Republic, Germany and Switzerland did not include this item.*

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

E. Context of injuries

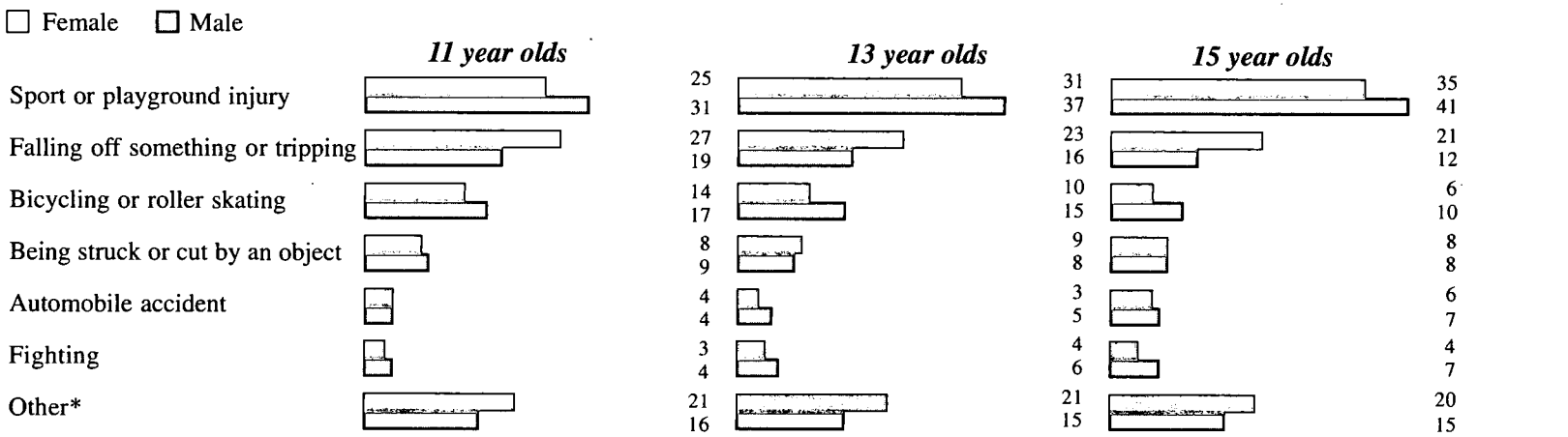
The second step in developing interventions is to examine the type of activity in which a young person was involved at the time the injury occurred. The activities in which the students were involved when they sustained their most serious injury are presented in Figure 7.5.

The largest group of injuries occurred during some sporting activity or play. The second largest group of injuries occurred when young people tripped over or fell off something. A number of injuries occurred while students were bicycling or roller skating. The proportion of young people who were injured by an automobile was comparatively small, but still significant and particularly important, because such injuries are more likely to be fatal.

Figure 7.6 presents the proportion of young people who indicated their most serious injury requiring medical attention during the past year occurred while they were participating in a sport. Young athletes are particularly at risk for fractures, cuts and overuse injuries which are in part related to poor training procedures and aggressive attitudes encouraged by adults (Cook & Leit, 1995; American College of Sport Medicine, 1993; Abraham, 1992; Micheli & Klein, 1991). The figures are surprisingly high for some countries. A quarter of the Welsh and Canadian 15-year-old boys had experienced one such injury. Overall, boys were far more likely than girls to be injured in a sporting event. Countries in which sport-related injuries were least likely to occur include Estonia, Greenland and Lithuania.

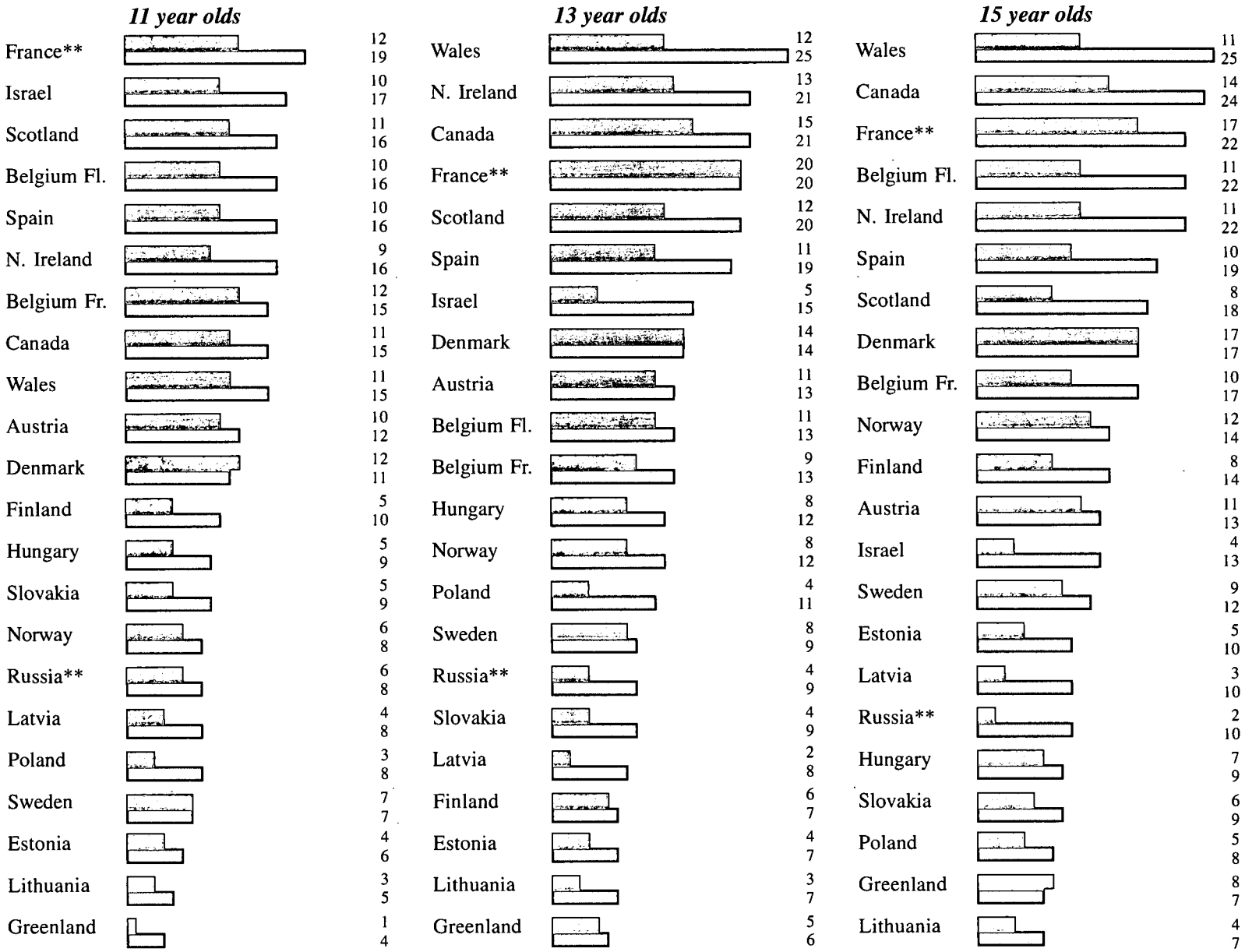
Analysis of causes of injuries within each type of environment provides an important insight into the modifiable risk factors that can be addressed to prevent childhood injuries. Figure 7.7 indicates the context of the injuries that occurred in the home, on the street and at school. Over half of injuries occurring at school involved play in sports and playground activities, while a substantial proportion involved being struck, cut or falling. At home the fall/struck/cut category was most prominent. Street-related injuries typically involve bicycles, roller skates and, of course, automobiles, but also include a significant number of falls/being struck by an object, and cuts. Each setting requires its own particular prevention programs.

Figure 7.5 Context of most serious injury (%)



* *"Other" was a response choice for this item.*

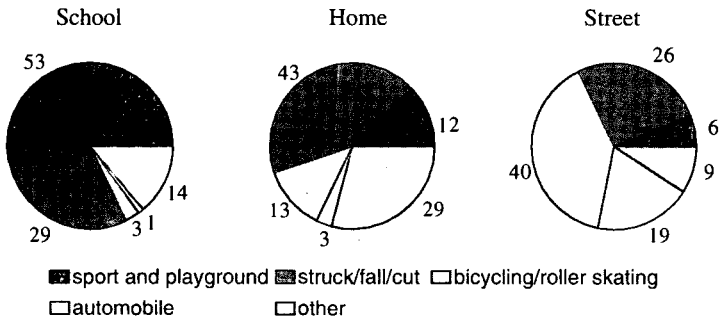
Figure 7.6 Sport injuries* (%)



* *The Czech Republic, Germany and Switzerland did not include this item.*

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

Figure 7.7 School, home, and street injuries, by cause (%)



F. Type of injury

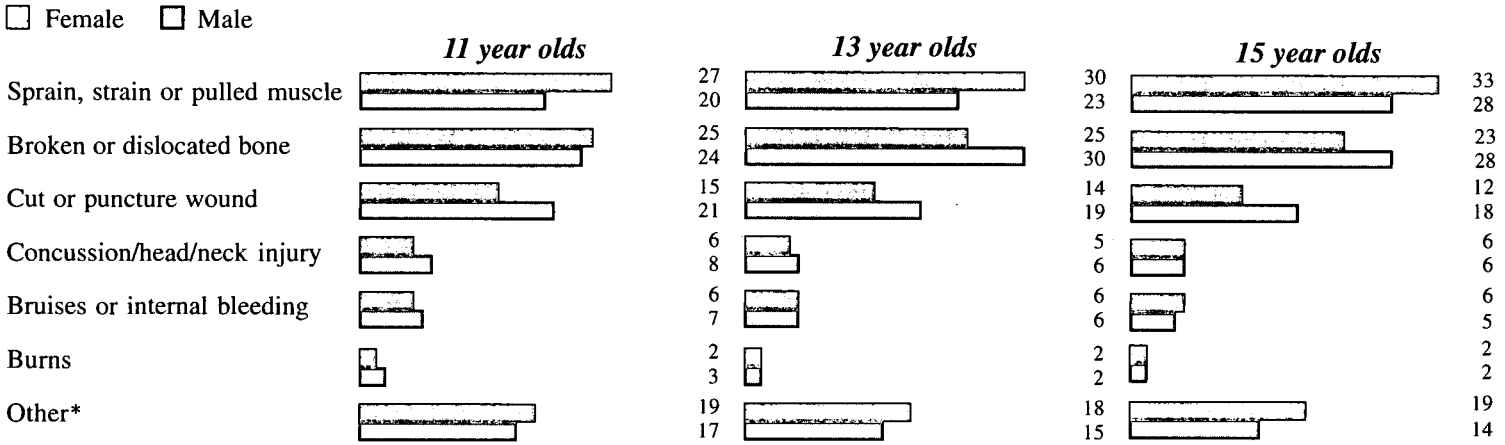
Figure 7.8 summarizes the types of injuries that fall into the most serious injury category. For girls, sprains and strains were the most common while for 11- and 13-year-old boys broken and dislocated bones occurred most often.

G. Injury prevention programs

There are many prevention programs in place in the various countries in this study. Traffic safety guards and playground supervisors are examples. There is no question that protective equipment acts to reduce the risk of injury both in sport and in play. For example, the use of helmets has been demonstrated to be remarkably effective in reducing head injuries among cyclists (Thompson et al., 1989). An advertising campaign designed to increase the use of bicycle helmets during 1982 to 1985 contributed to a 20 percent reduction in head injuries to bicyclists in Australia (Wood & Milne, 1988).

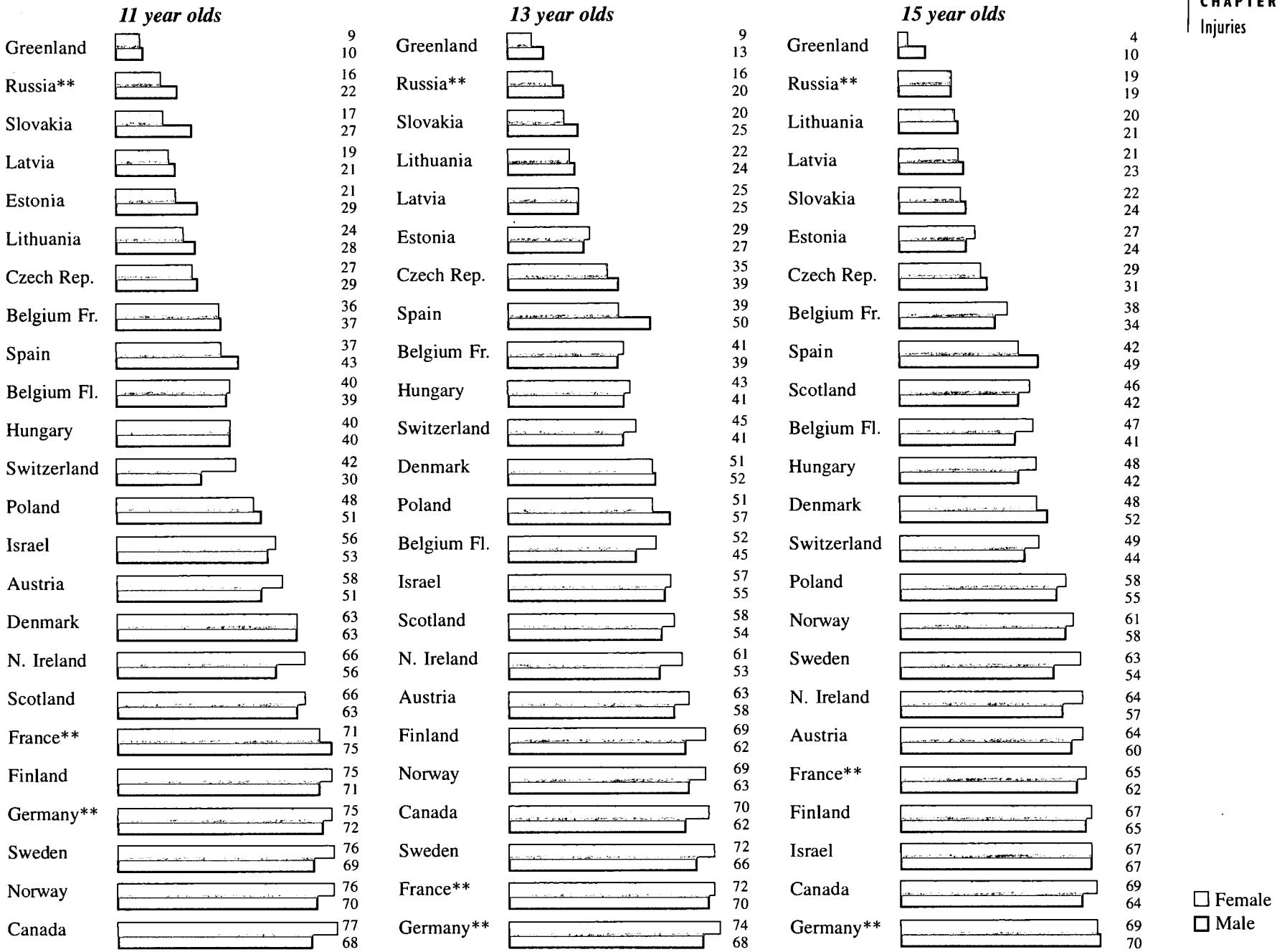
Another injury prevention program that has been demonstrated to be effective is the legislation requiring both automobile drivers and their passengers to wear seat belts. Many of the countries participating in this study have enacted such legislation but others have not. In some countries, particularly eastern European countries, many automobiles are not equipped with seat belts. The students in the study were asked how often they wore a seat belt when in an automobile and Figure 7.9 summarizes the proportion who said they always wear one. In those countries where using seat belts was the norm, girls were slightly more likely than boys to always wear seat belts. In countries such as Canada, Finland, France and Germany,

Figure 7.8 Type of most serious injury (%)



* *"Other" was a response choice for this item.*

Figure 7.9 Students who always used a seat belt * (%)



* *Wales did not include this item.*

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

approximately two-thirds or more of the students in all three age groups said they always wear a seat belt. Students in the eastern European countries of the Czech Republic, Estonia, Latvia, Lithuania, Russia and Slovakia were far less likely to always wear a seat belt and very few Greenlandic youth use a seatbelt when in a vehicle.

H. Summary

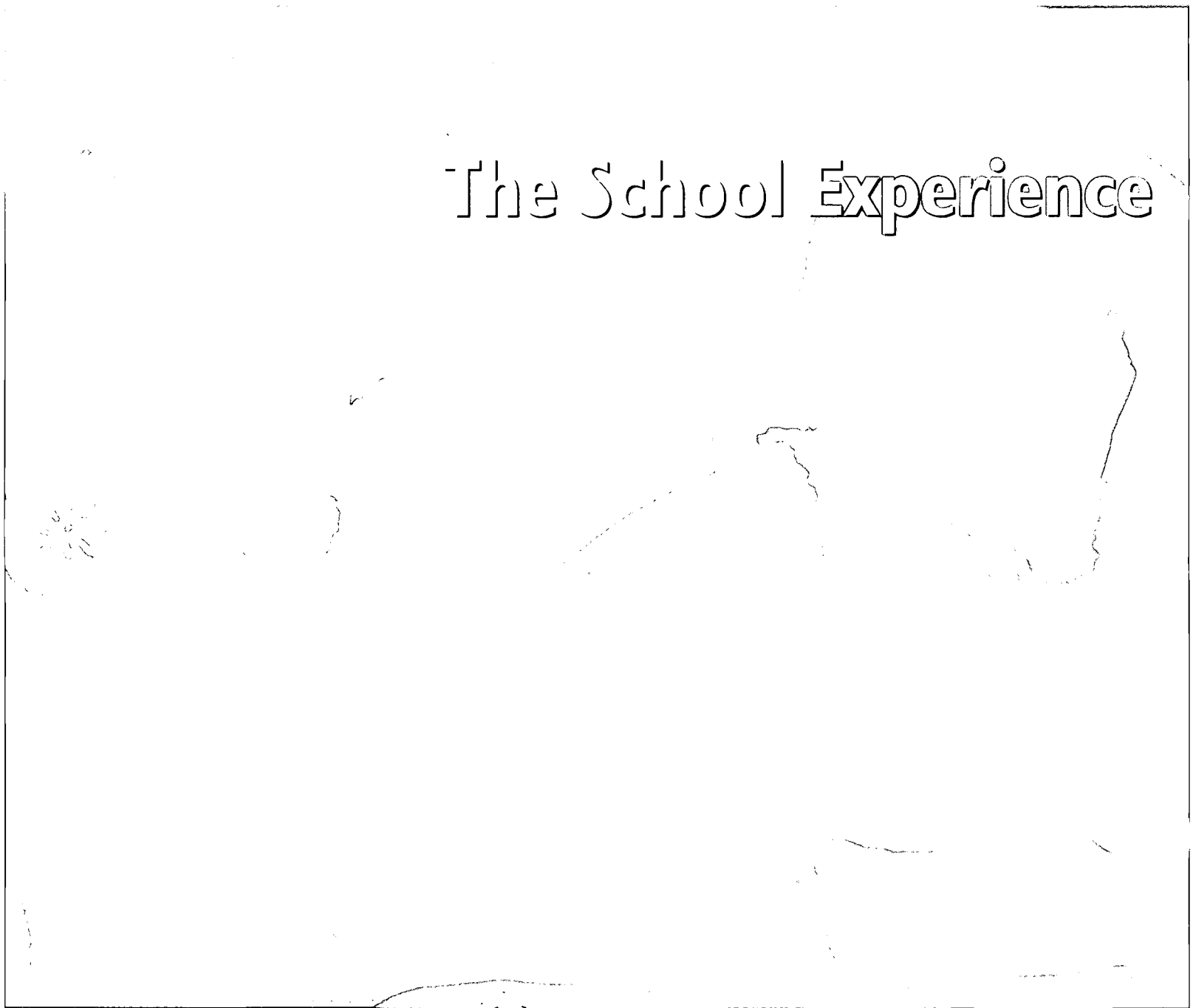
This chapter presents an overview of the incidence of nonfatal injuries in school-aged children. In all countries, injury rates are sufficiently great to indicate a serious health problem requiring prevention initiatives. Boys tend to be injured more frequently than girls, yet, among girls, injury rates are also substantial. About two-thirds of all injuries requiring contact with a doctor or nurse result in one or more days lost from school or in a medical procedure such as the placement of a cast, stitches, surgery or hospitalization. Over 40 percent of all injuries occur in school or at home, two environments that can be directly targeted for intervention. Injuries most frequently occur during sport and playground activities, and when young people fall and are struck or cut by objects.

If the school systems in the participating countries can develop effective prevention strategies aimed at (a) reducing sport and playground activity-related injuries, and (b) improving the safety of school environments, then 80 percent of all school injuries will be addressed by primary prevention intervention. Also, schools can be used as a vehicle to provide safety education designed to reduce injuries that occur outside the school environment. As to home injuries, a community-based approach to enhance the safety of the home environment to prevent falls and cuts might be an effective strategy to address adolescent home injuries.

The sport injury literature includes many suggestions for prevention programs that address specific types of sport activities (for example, wearing protective clothing) or more general approaches (for example, multi-cause community intervention programs) that address a wider spectrum of activities. Greater use of seat belts is clearly needed in some countries. Not only legislative support, but making sure vehicles have the necessary equipment is fundamental.

CHAPTER 8

The School Experience



CHAPTER 8

The School Experience

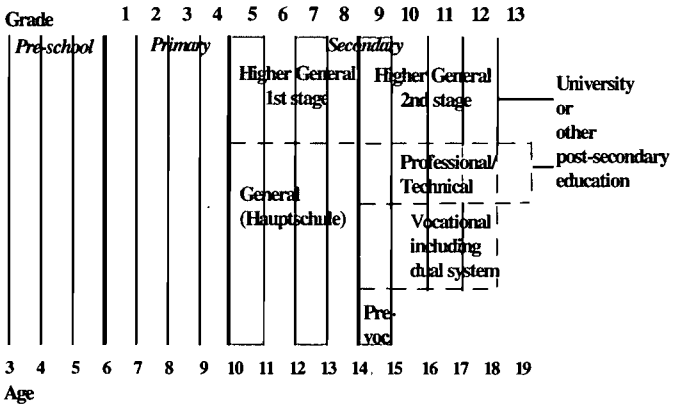
A. Introduction

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.

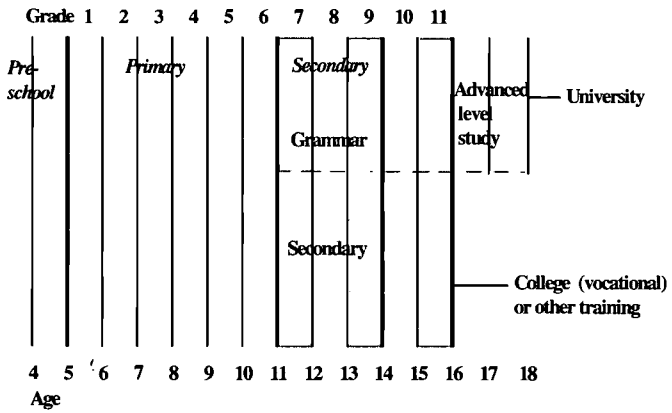
One aim of this survey analysis is to identify the factors that make school more satisfying. In order to do this, how students relate to their teachers and their school peers as well as the degree of involvement of their parents are considered. The relationship between school achievement and overall 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



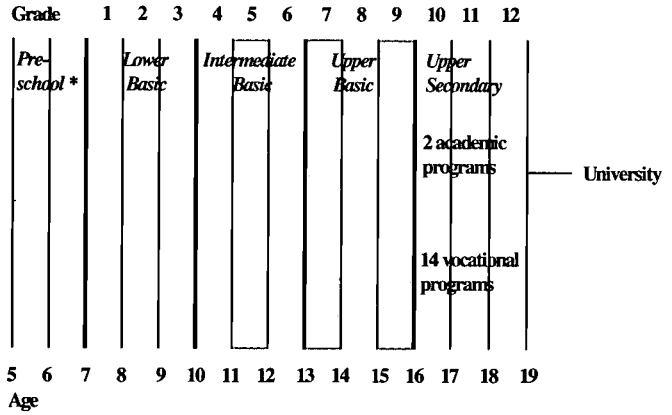
Shaded bars indicate the population from which the sample was drawn.

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



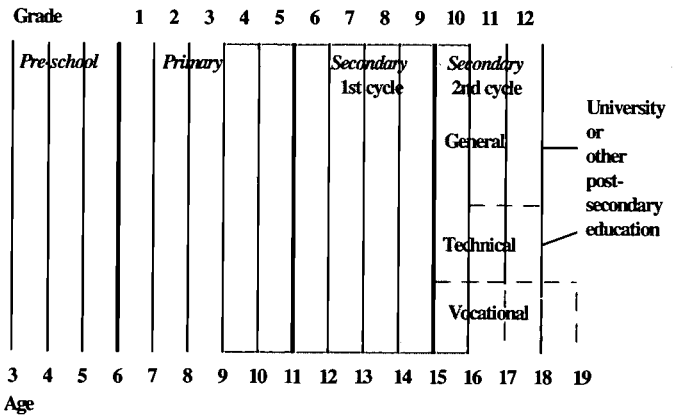
Shaded bars indicate the population from which the sample was drawn.

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

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).

Figure 8.4 France's educational system

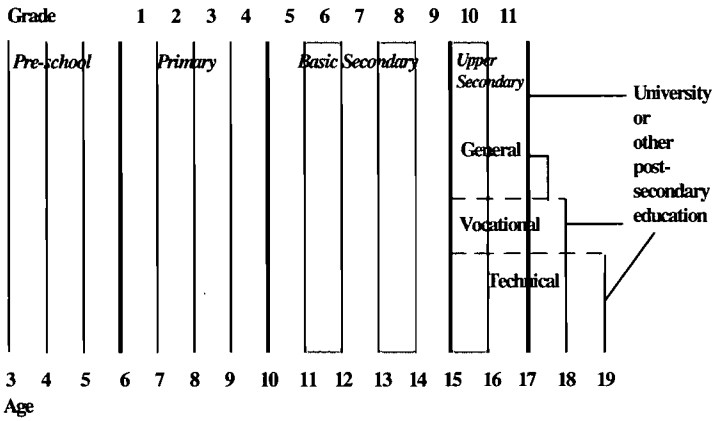


Shaded bars indicate the population from which the sample was drawn.

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

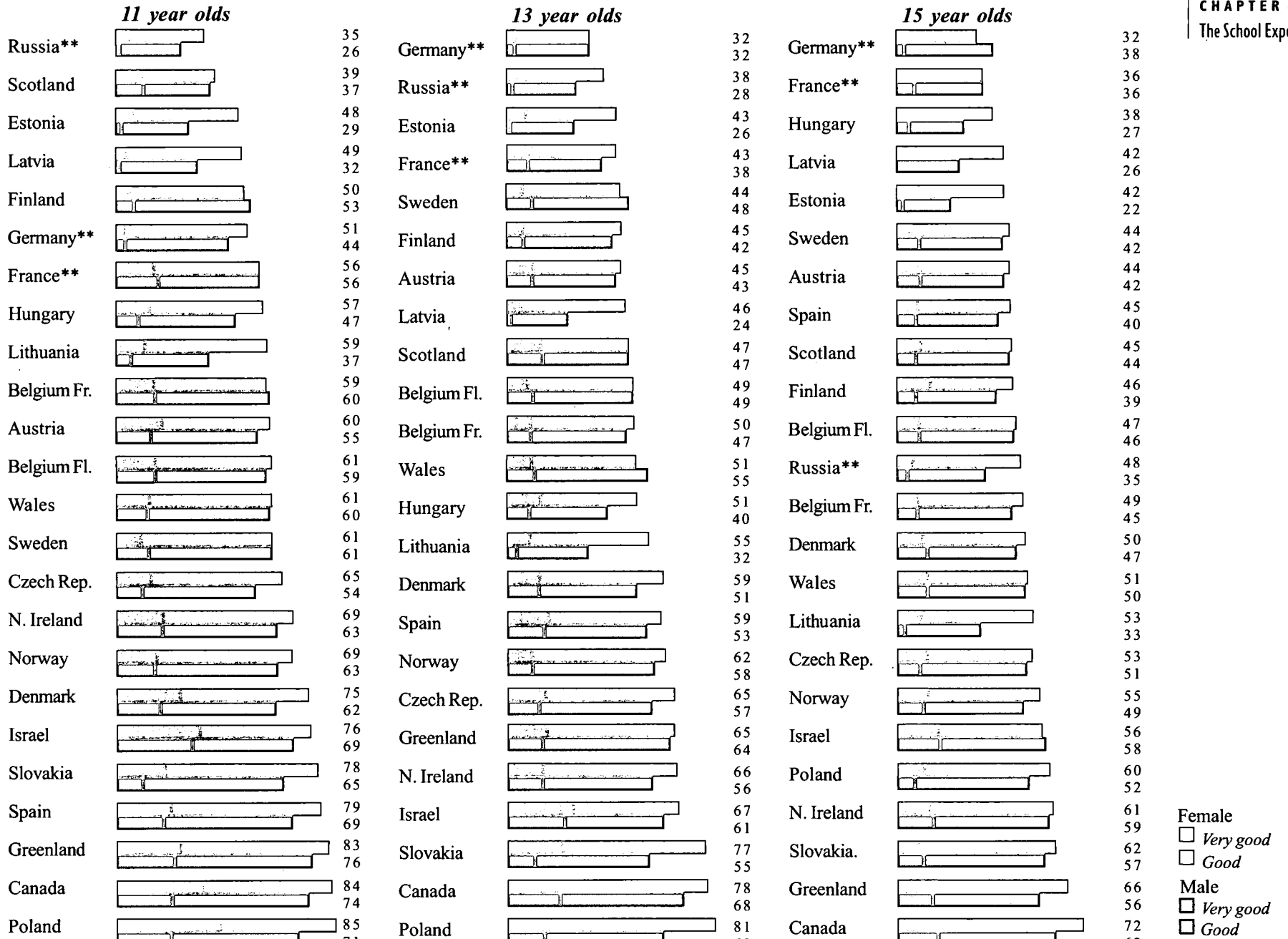
Students who achieve well in school are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Like school	O	O	O	O	O	O
Feel teachers show personal interest in them	O	O	O	O	O	O
Feel happy	O	O	O	O	O	—
Be satisfied with their appearance	O	O	O	O	—	—
Not smoke cigarettes	—	—	O	O	O	O
Say teachers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

Correlation coefficient: O .15 to .19 O .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

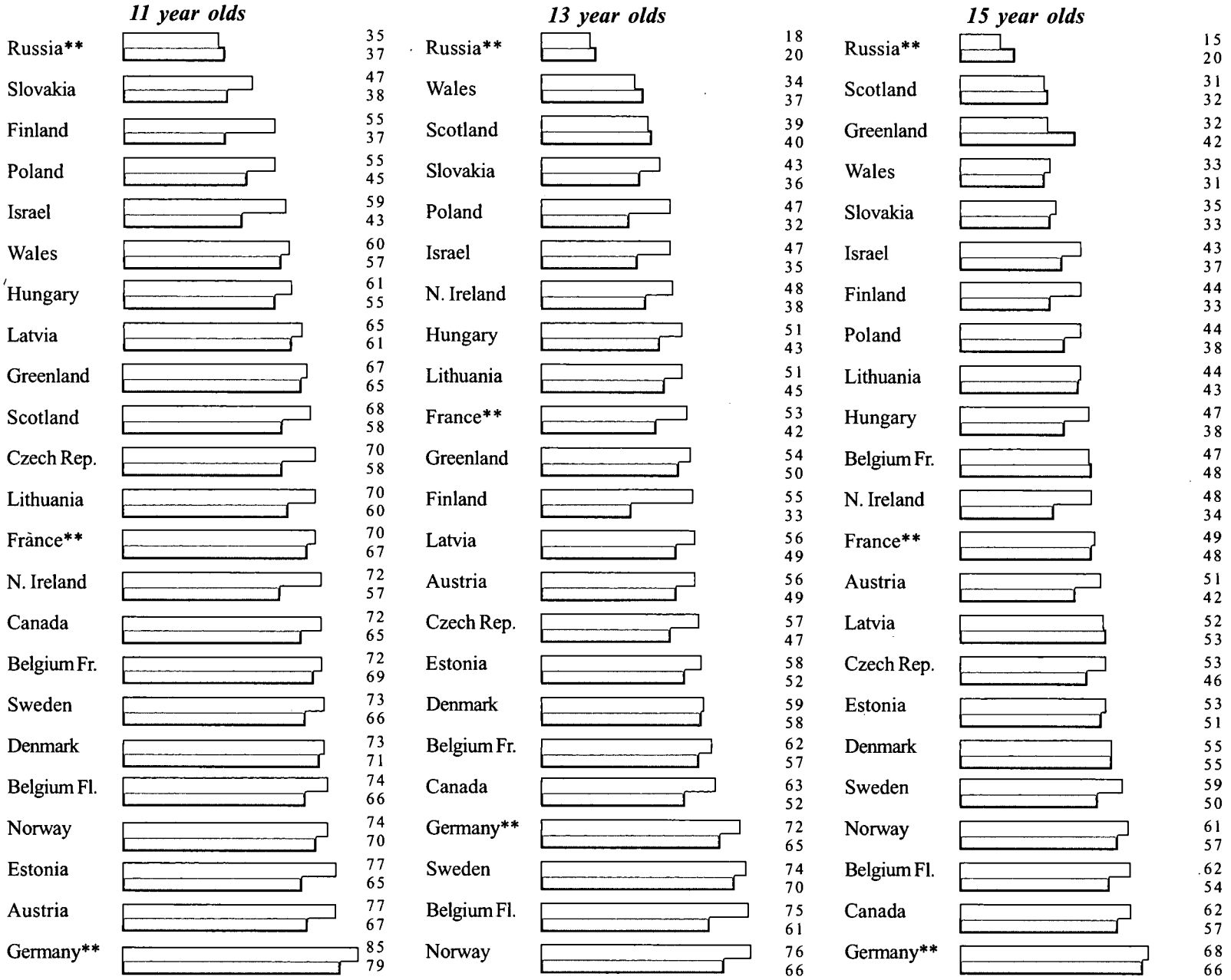
Figure 8.8 Factors associated with liking school

Students who like school are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Say school is a nice place to be	◉	◉	◉	○	◉	○
Feel they belong at their school	○	○	○	○	○	◔
Say teachers treat them fairly	○	○	○	○	○	○
Say rules in this school are fair	○	○	○	○	○	○
Feel teachers show personal interest in them	○	○	○	○	○	○
Achieve well in school	○	○	○	○	○	○
Say they can get extra help from teachers when they need it	○	○	○	○	○	○
Not be tired in the morning	○	○	○	○	○	○
Feel happy	○	○	○	○	○	○
Say they are not treated too severely	○	○	○	○	○	○
Not feel stressed at school	○	○	○	○	○	○
Say other students are kind and helpful	○	○	○	○	○	○
Say their school is clean	○	○	○	○	○	○
Say teachers encourage them to express their own views	—	○	○	○	○	○
Not smoke cigarettes	—	—	○	○	○	○
Not have been drunk	—	—	○	○	○	○
Not be irritable	—	—	—	○	—	○
Feel confident	—	○	—	—	—	○
Not feel pressure from teachers	—	○	—	—	—	○

Correlation coefficient: ○ .15 to .19 ○ .20 to .29 ○ .30 to .39 ◉ .40+

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

Students who say teachers show an interest in them as a person are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Say they can get extra help from teachers when they need it	○	○	○	○	○	○
Say teachers treat them fairly	○	○	○	○	○	○
Say teachers encourage them to express their own views	○	○	○	○	○	○
Say school is a nice place to be	○	○	○	○	○	○
Say rules in this school are fair	○	○	○	○	○	○
Like school	○	○	○	○	○	○
Feel they belong at their school	○	○	○	○	○	○
Say their school is clean	○	○	○	○	○	○
Say other students are kind and helpful	○	○	○	○	○	○
Achieve well in school	○	○	○	○	○	○
Say parents are willing to come to school to talk with teachers	○	○	○	○	○	○
Say students enjoy each other's company	○	○	○	○	○	○
Feel happy	—	○	○	○	○	○
Say other students accept them as they are	○	○	—	○	—	—
Be well integrated socially	—	○	—	○	—	—
Say parents are willing to help them with problems at school	—	—	—	○	—	○

Correlation coefficient: ○ .15 to .19 ○ .20 to .29 ○ .30 to .39 ○ .40+

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.

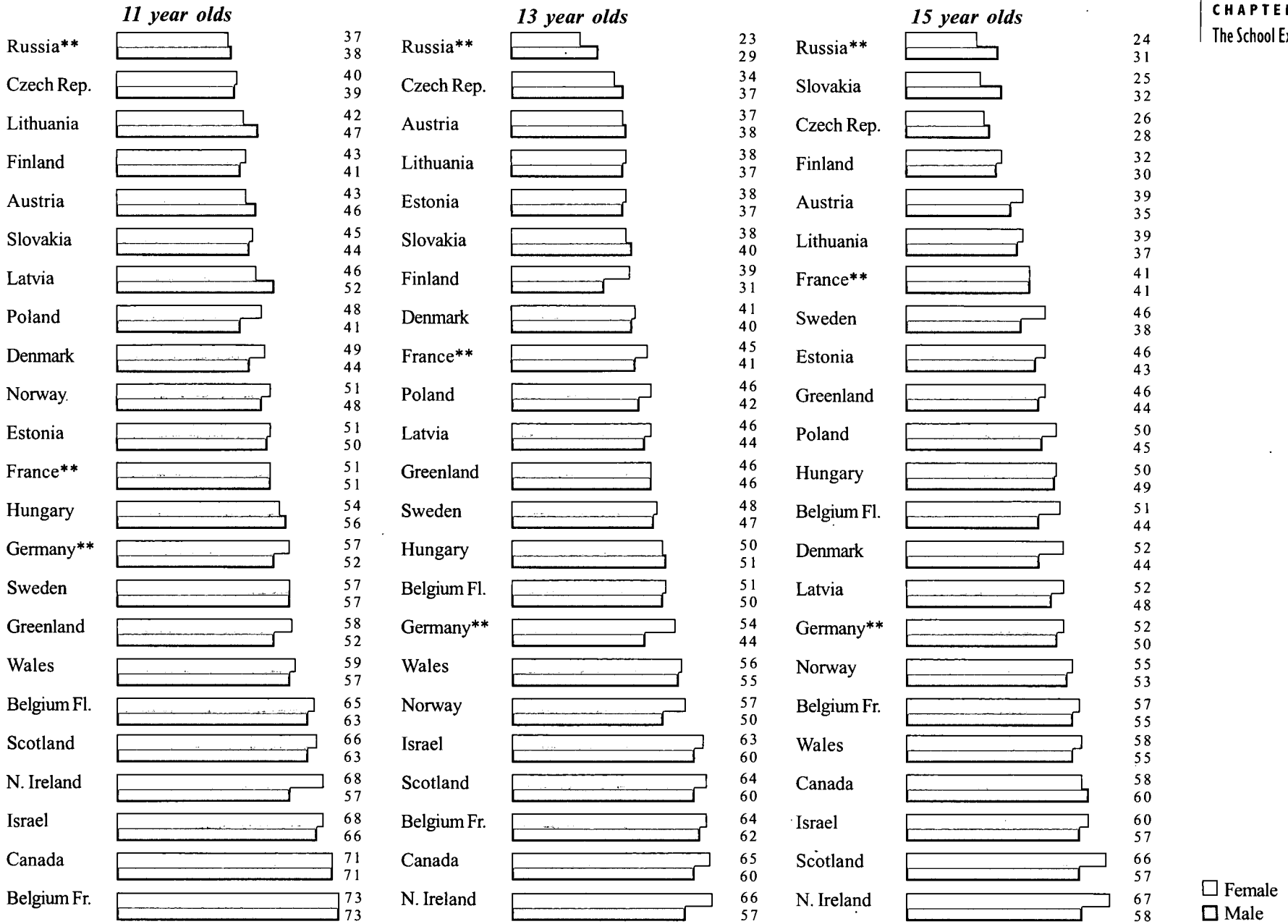
Perhaps the most notable difference across countries in students' attitudes toward their school emerged in response to the question "My teachers show an interest in me as a person". The proportion who agreed with the statement ranged from a low of 14 percent of Finnish 13-year-old girls and 15-year-old 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 8.11 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.*

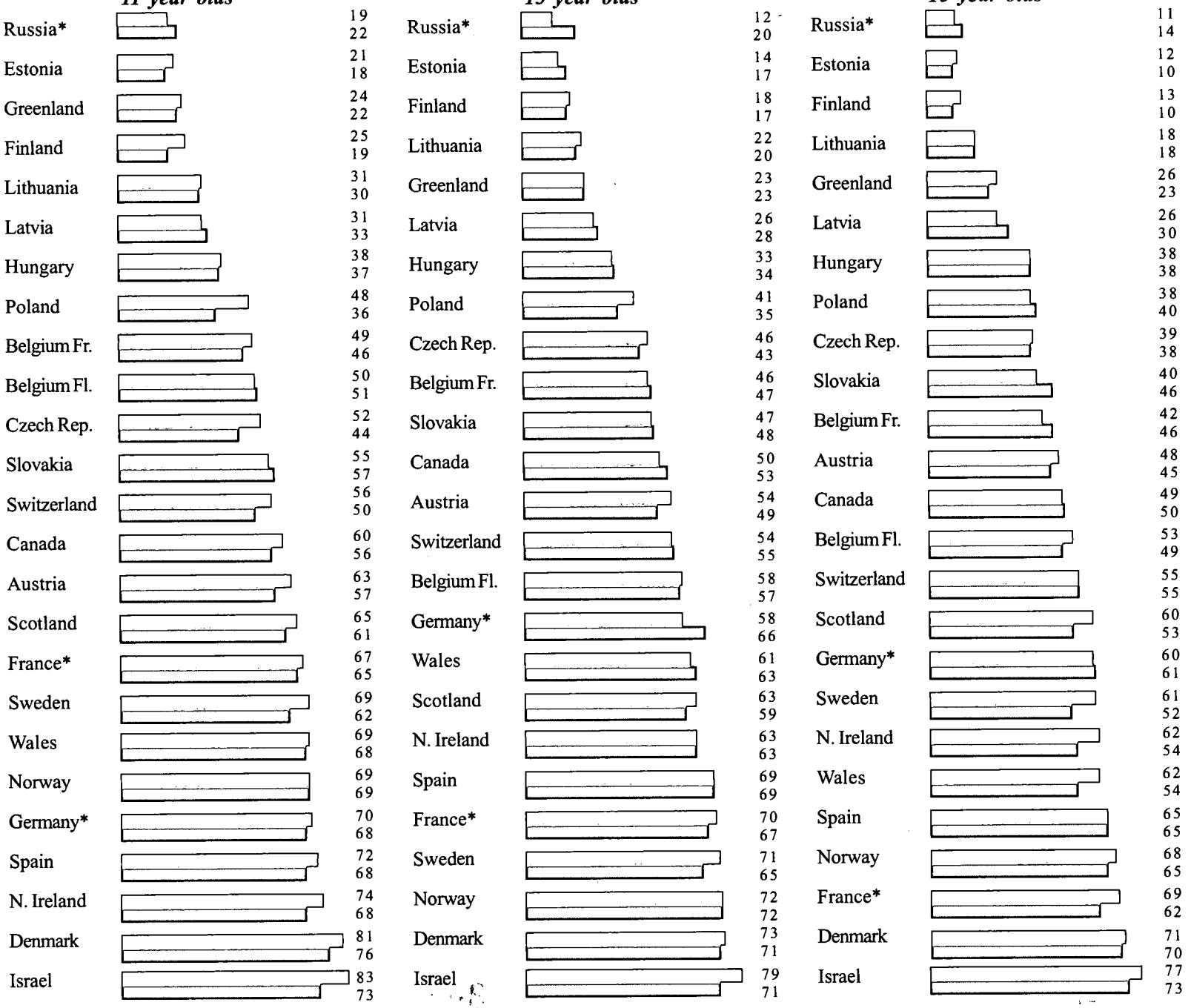
E. Parents

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.*

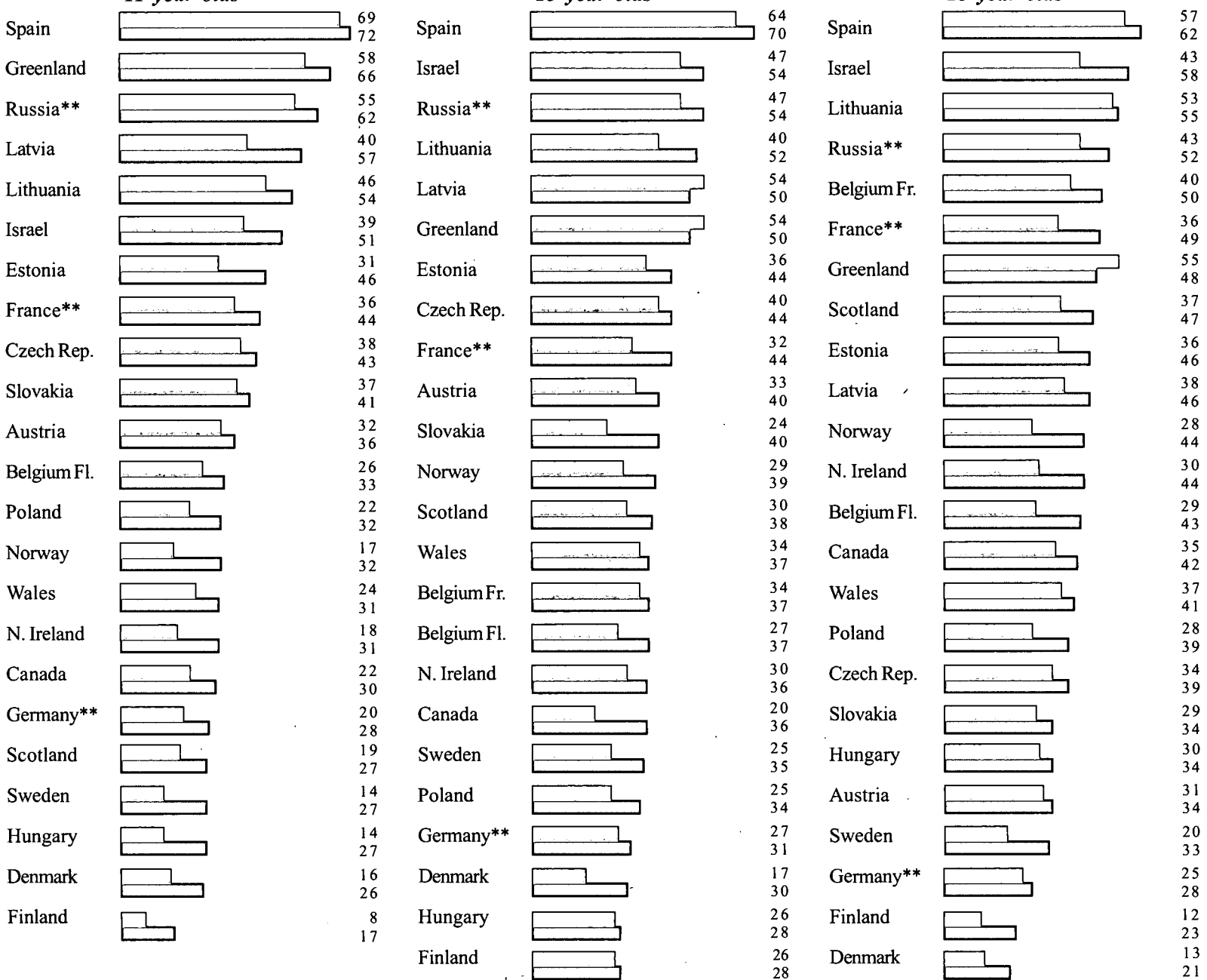
Success in school for students is typically equated with strong academic performance. It is a social reality that future career opportunities are defined and may even be limited by the grades students attain in school. Academic achievement is important to parents because it effectively determines whether 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.

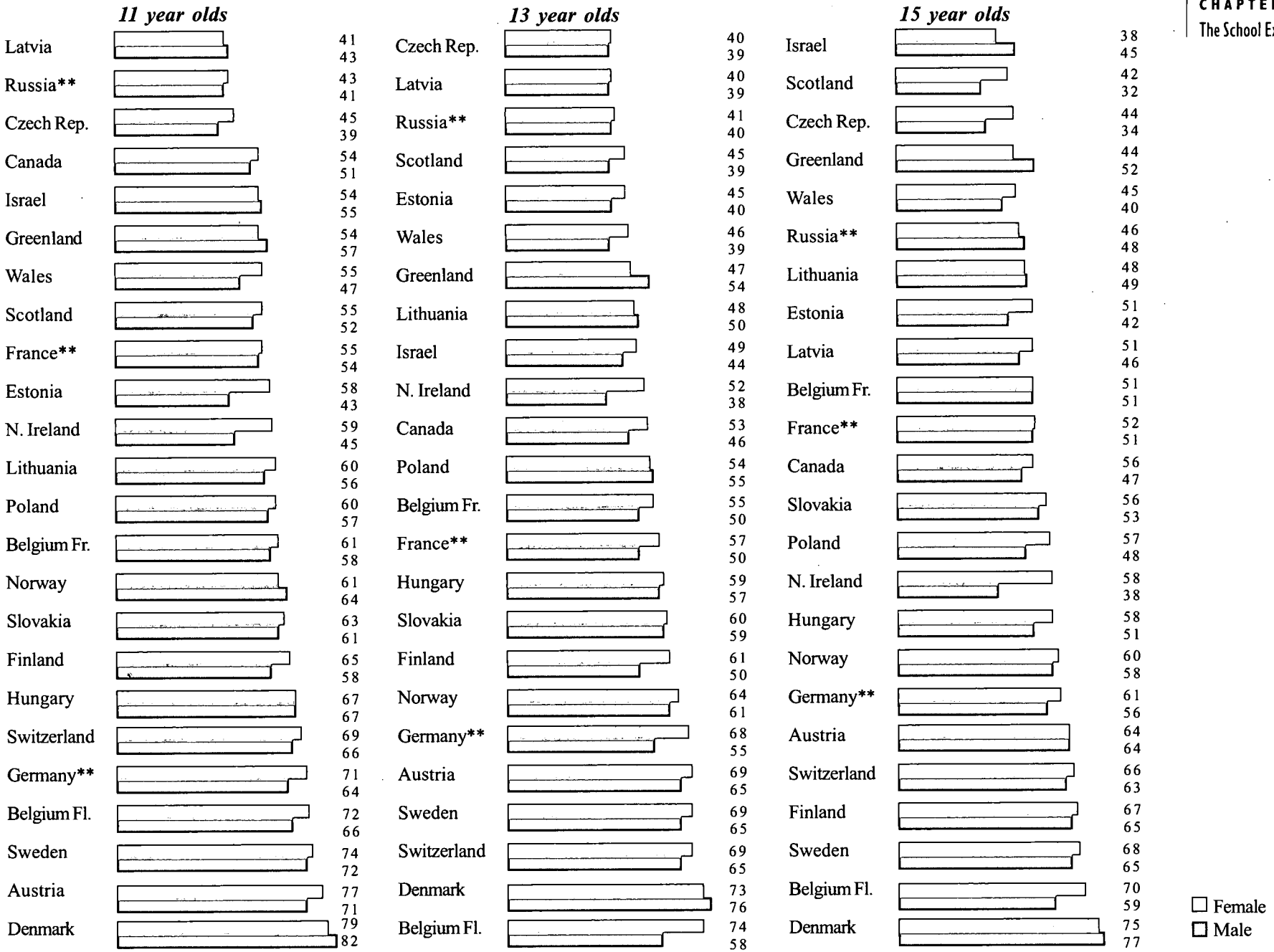
In most countries at all three age groups, boys were slightly less likely than girls to say that their classmates are kind and helpful. This pattern was most notably reversed for all three age groups in Greenland and for 15 year olds in Israel. Overall, 15 year olds were less likely to say that their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

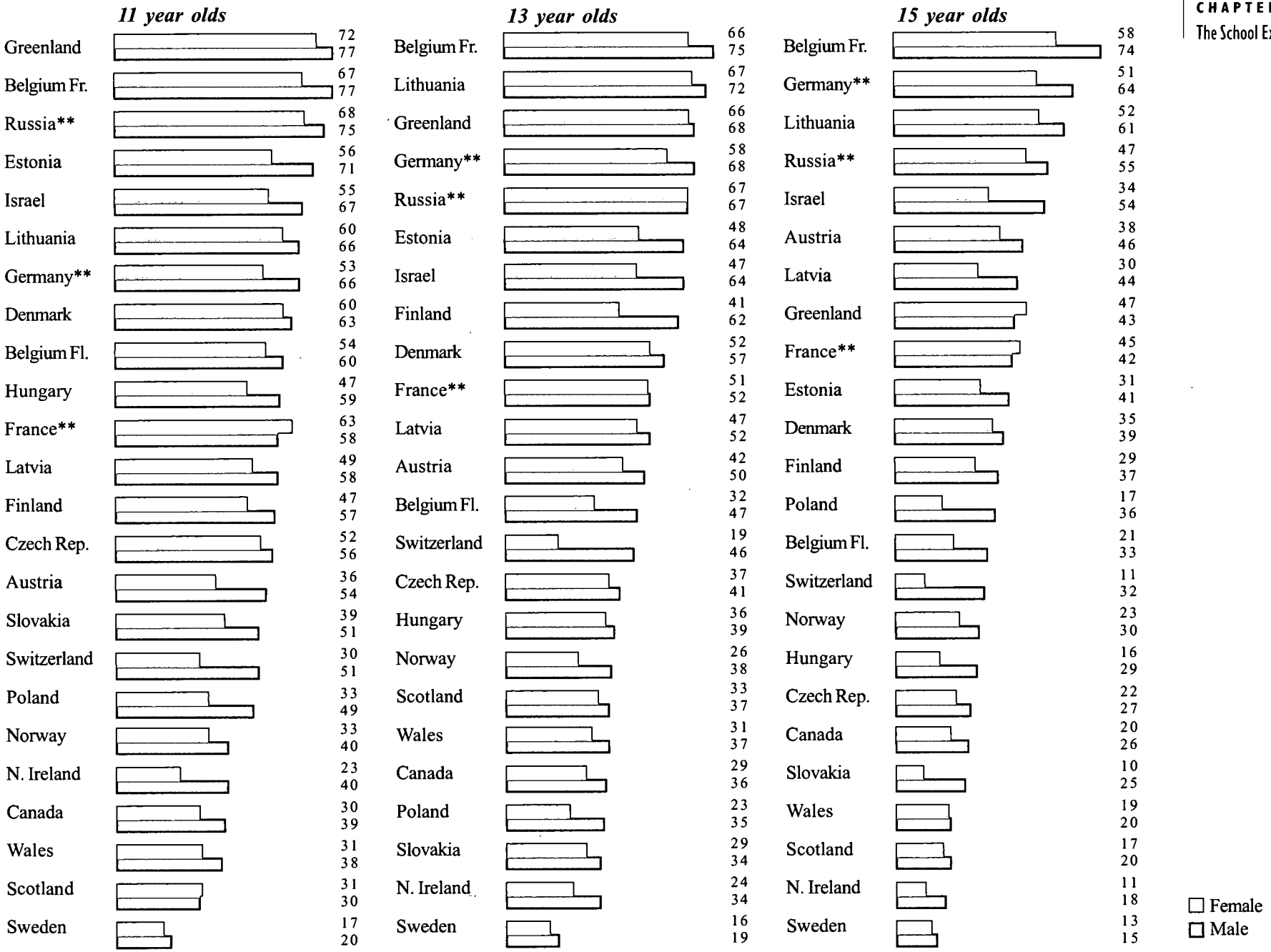
Boys were much more likely to have been bullied than girls, with rather large gender differences in more than half of the countries. The proportion of students who had been bullied dropped substantially by age 15. For example, 25 percent fewer Danish 15 than 11 year olds had been bullied and, in Belgium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

Figure 8.15 Factors associated with being bullied

Students who have been bullied are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Be left alone at school	○	○	○	○	○	○
Have bullied others	○	○	○	○	○	○
Say other students do not accept them as they are	○	○	○	○	○	○
Feel like an outsider	○	○	○	○	○	○
Feel lonely	○	○	○	○	○	○
Say fellow students are not kind and helpful	○	○	○	○	○	○
Feel helpless	○	○	○	○	○	○
Feel unhappy	○	○	○	○	○	—
Find it difficult to make friends	○	○	○	○	○	—
Feel depressed	○	○	○	○	—	—
Feel nervous	○	○	—	○	○	—
Say students do not enjoy each other's company	—	○	○	○	—	—
Feel stressed at school	○	○	—	—	—	—

Correlation coefficient: ○ .15 to .19 ○ .20 to .29 ○ .30 to .39

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.

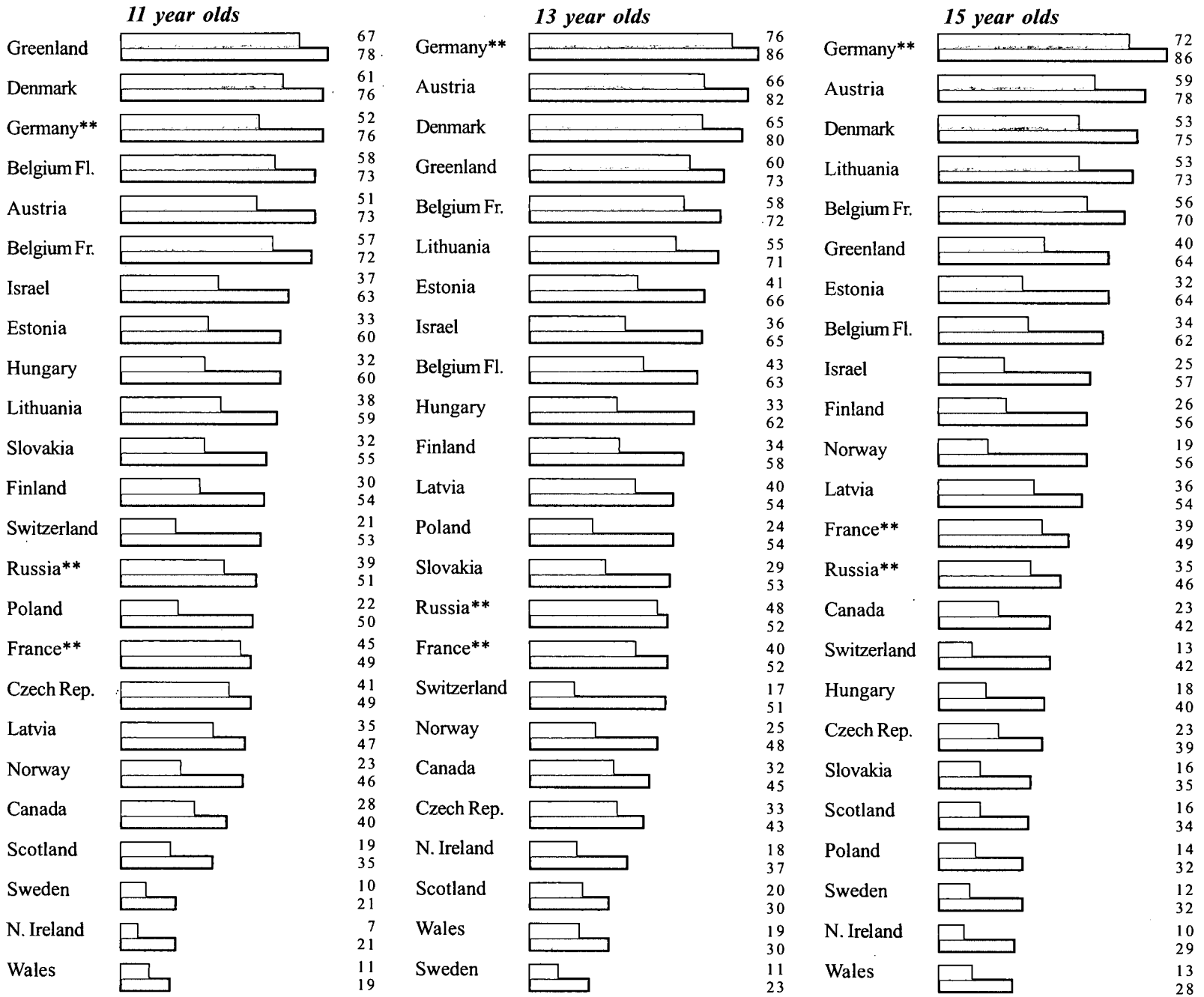
The proportion of boys who had bullied others was similar in each age group. Among the girls, 13 year olds were more likely to have acted as bullies than 11 and 15 year olds.

Figure 8.17 Factors associated with bullying others

Students who bully others are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Have been bullied	O	O	O	O	O	O
Have a negative attitude toward school	O	—	O	O	O	—
Smoke cigarettes	—	—	O	O	O	O
Have been drunk	O	—	O	—	O	—

Correlation coefficient: O .15 to .19 O .20 to .29 O .30 to .39

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

Students who are left alone at school are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Have been bullied this term	O	O	O	O	O	O
Feel left out of things	O	O	O	O	O	O
Say other students do not accept them as they are	O	O	O	O	O	O
Feel lonely	O	O	O	O	O	O
Not feel happy	O	O	O	O	O	O
Feel helpless	O	O	O	O	O	O
Find it difficult to make new friends	O	O	O	O	O	O
Say other students are not kind and helpful	O	O	O	O	O	O
Feel depressed	O	O	O	O	O	O
Not have close friends	O	O	O	O	O	O
Not feel confident	O	O	O	O	O	–
Not spend time with friends after school	–	O	O	O	O	O
Find it difficult to talk to same-gender friends	–	O	–	O	–	O
Feel stressed at school	O	O	–	–	–	–
Dislike their appearance	O	–	O	–	–	–
Be irritable	–	O	–	O	–	–
Feel nervous	–	O	–	O	–	–

Correlation coefficient: O .15 to .19 O .20 to .29 O .30 to .39

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

Students who have a positive attitude toward school are more likely to	*11 year olds* M	F	*13 year olds* M	F	*15 year olds* M	F
Feel happy	O	O	O	O	O	O
Be well integrated socially	O	O	O	O	O	O
Achieve well in school	O	O	O	O	O	O
Say parents are willing to help with problems at school	O	O	O	O	O	O
Say parents are willing to come to school to talk to teachers	O	O	O	O	O	O
Not feel stressed at school	O	O	O	O	O	O
Say parents encourage them to do well at school	O	O	O	O	O	O
Have good communication with parents	O	O	O	O	O	O
Not feel pressure from teachers	O	O	O	O	O	O
Not be irritable	O	O	O	O	O	O
Not be tired in the morning	O	O	O	O	O	O
Use a seat belt	O	O	O	O	O	O
Feel confident	O	O	O	O	—	O
Not feel depressed	—	O	O	O	O	O
Not have been drunk	O	—	O	O	O	—
Feel healthy	O	O	—	O	—	O
Not have bullied others	O	—	O	O	O	—
Not smoke cigarettes	—	—	O	O	O	—
Not feel helpless	—	O	—	O	—	—

Correlation coefficient: O .15 to .19 O .20 to .29 O .30 to .39

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.

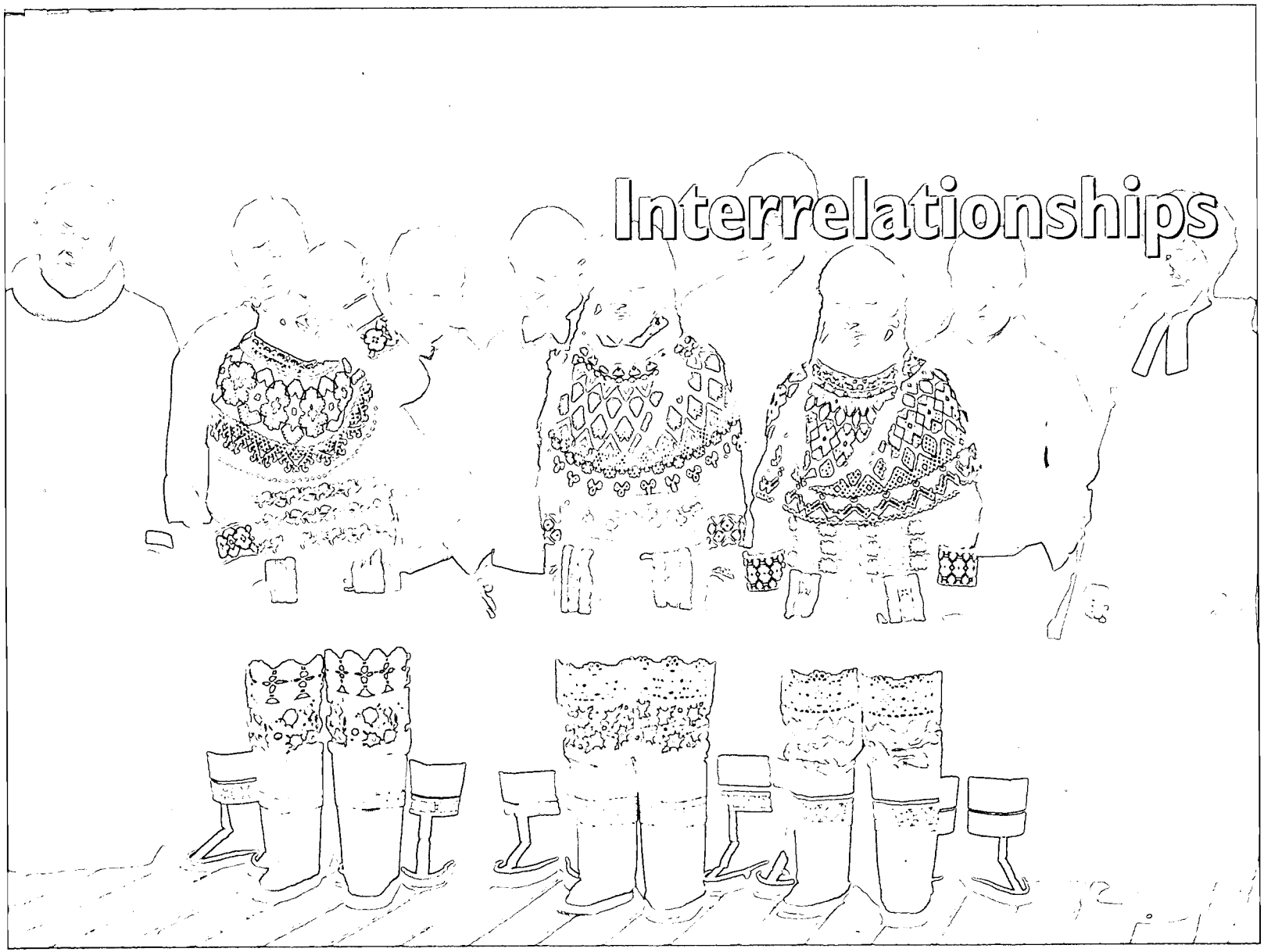
Interesting differences surfaced across countries in the description of relationships with peers in school. Students from Austria, Belgium (Fl.), Denmark, Sweden and Switzerland were most likely to say their classmates were kind and helpful and students from the Czech Republic, Israel, Latvia, Russia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

1. 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.

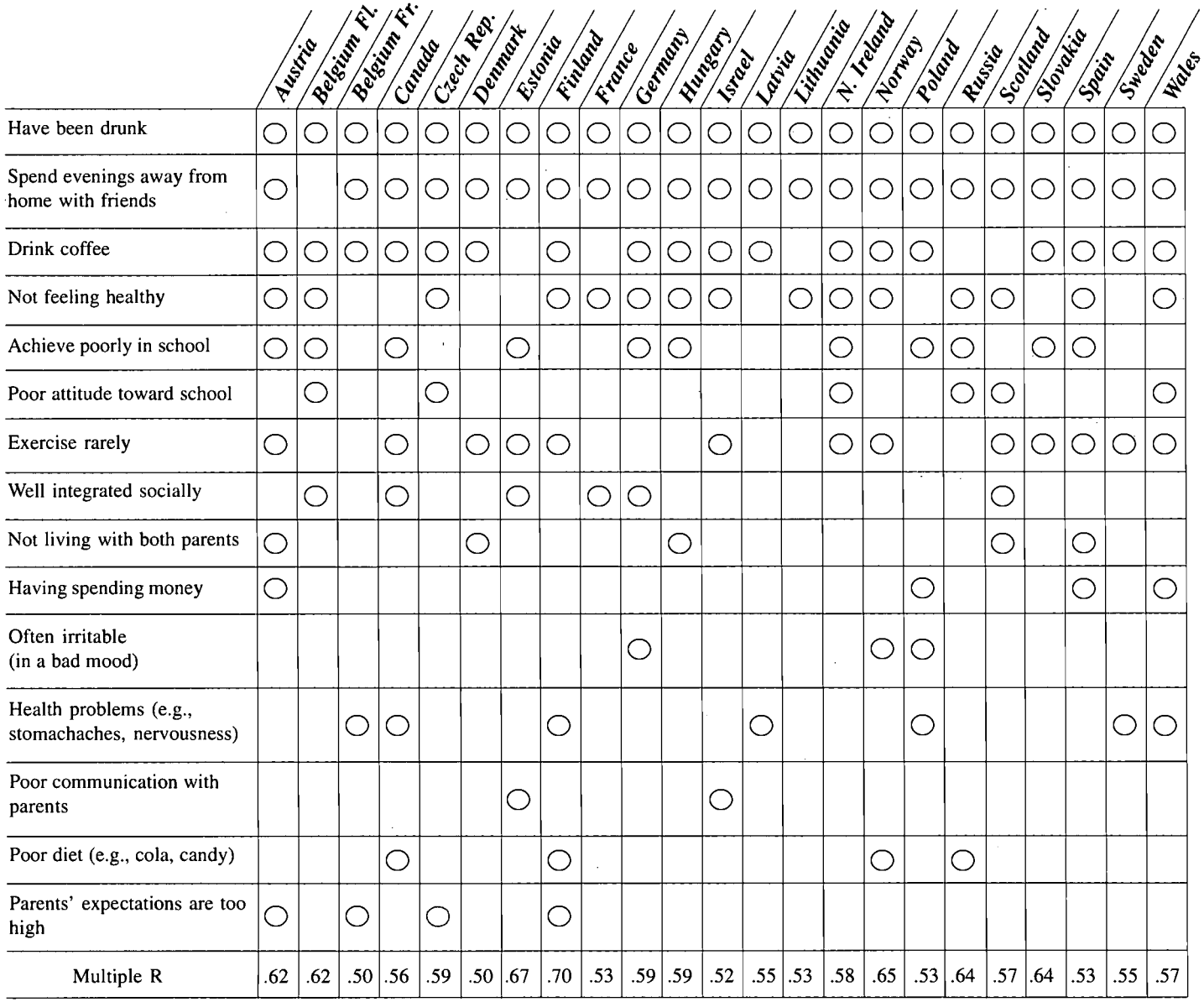
Canada

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



	Austria	Belgium Fl.	Belgium Fr.	Canada	Czech Rep.	Denmark	Estonia	Finland	France	Germany	Hungary	Israel	Latvia	Lithuania	N. Ireland	Norway	Poland	Russia	Scotland	Slovakia	Spain	Sweden	Wales
Have been drunk	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Spend evenings away from home with friends	○		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Drink coffee	○	○	○	○	○	○		○		○	○	○	○		○	○	○			○	○	○	○	○
Not feeling healthy	○	○			○			○	○	○	○	○		○	○	○		○	○		○		○
Achieve poorly in school	○	○		○			○			○	○				○		○	○		○	○		
Poor attitude toward school		○			○										○			○	○				○
Exercise rarely	○			○		○	○	○				○			○	○			○	○	○	○	○
Well integrated socially		○		○			○		○	○									○				
Not living with both parents	○					○					○								○		○		
Having spending money	○																○				○		○
Often irritable (in a bad mood)										○						○	○						
Health problems (e.g., stomachaches, nervousness)			○	○				○					○				○					○	○
Poor communication with parents							○					○											
Poor diet (e.g., cola, candy)				○				○								○		○					
Parents' expectations are too high	○		○		○			○															
Multiple R	.62	.62	.50	.56	.59	.50	.67	.70	.53	.59	.59	.52	.55	.53	.58	.65	.53	.64	.57	.64	.53	.55	.57

○ Strong relationship (beta ≥ .15)
○ Moderate relationship (beta = .06 to .145)

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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

	Austria	Belgium Fl.	Belgium Fr.	Canada	Czech Rep.	Denmark	Estonia	Finland	France	Germany	Hungary	Israel	Latvia	Lithuania	N. Ireland	Norway	Poland	Russia	Scotland	Slovakia	Spain	Sweden	Wales
Have been drunk	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Spend evenings away from home with friends	○	○		○		○	○	○	○	○	○	○	○		○	○	○	○	○	○	○	○	○	○
Drink coffee	○		○	○	○	○		○		○	○	○			○	○			○	○	○	○	○	○
Not feeling healthy	○		○	○					○			○			○				○		○	○	○	○
Achieve poorly in school	○	○		○	○			○	○		○		○	○	○								○	○
Poor attitude toward school			○		○														○					○
Exercise rarely				○		○		○								○								
Well integrated socially			○			○		○						○								○		
Not living with both parents	○		○	○											○	○	○					○		
Having spending money		○	○		○										○							○		
Often irritable (in a bad mood)		○							○	○					○			○						
Health problems (e.g., stomachaches, nervousness)			○			○	○	○		○	○					○	○					○		○
Poor communication with parents								○	○						○									
Poor diet (e.g., cola, candy)	○					○		○		○									○					
Parents' expectations are too high	○							○		○	○				○				○					
Multiple R	.69	.62	.54	.63	.59	.59	.47	.69	.60	.67	.60	.48	.54	.49	.65	.69	.50	.57	.59	.42	.55	.69	.58	

○ Strong relationship (beta ≥ .15)
○ Moderate relationship (beta = .06 to .145)

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

	Austria	Belgium Fl.	Belgium Fr.	Canada	Czech Rep.	Denmark	Estonia	Finland	France	Germany	Hungary	Israel	Latvia	Lithuania	N. Ireland	Norway	Poland	Russia	Scotland	Slovakia	Spain	Sweden	Wales
Feel healthy	○	○	○	○	○	○	○	○	○		○	○	○		○	○	○	○	○	○	○	○	○
Well integrated socially	○	○		○	○	○		○	○	○	○		○		○	○	○		○	○	○	○	○
Positive attitude toward school			○	○	○	○	○	○	○		○	○	○	○		○	○	○		○		○	○
Rarely irritable (in a bad mood)	○	○		○	○	○	○	○		○	○		○			○		○			○	○	
Feel confident		○		○		○	○		○	○				○	○	○		○	○		○	○	○
Good communication with parents			○	○	○							○	○	○		○	○				○	○	
Rarely feel helpless				○							○	○	○	○	○		○	○	○	○			
Satisfied with appearance	○	○		○	○			○			○					○	○				○	○	
Believe family is well off	○		○	○			○	○	○	○		○	○	○				○		○			
Not tired in the morning				○			○			○									○				
Rarely have difficulty getting to sleep			○										○								○	○	○
Parents are willing to help with problems at school		○			○			○	○	○	○				○	○	○						
Achieve well in school			○							○		○	○		○			○					
Living with both parents	○			○										○	○				○		○		
Multiple R	.42	.55	.53	.59	.42	.54	.57	.52	.54	.62	.50	.51	.53	.47	.53	.55	.55	.50	.57	.49	.50	.60	.60

○ Strong relationship (beta ≥ .15)
○ Moderate relationship (beta = .06 to .145)

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

	Austria	Belgium Fl.	Belgium Fr.	Canada	Czech Rep.	Denmark	Estonia	Finland	France	Germany	Hungary	Israel	Latvia	Lithuania	N. Ireland	Norway	Poland	Russia	Scotland	Slovakia	Spain	Sweden	Wales
Feel healthy	○	○	○	○	○	◎	○	○	○		○	○		○		○	○	○	○	○	○	○	○
Well integrated socially	○	○	○	○	○	◎	○	○	○	○	○	○	○	○	○	○	○	○	○		○		○
Positive attitude toward school		○		○			○	○	○	○	○		○	○	○	○	○			○			○
Rarely irritable (in a bad mood)	○	○	○	○	○	○		○		○	○		○	○					○	○			○
Feel confident	○	○		○	○	○	○	○	○			○			○				○	○	○	○	○
Good communication with parents		○	○	○		○	○			○	○	○	○	○	○		○	○	○	○	○		○
Rarely feel helpless		○		○					○	○	○	○				○	○	○	○	○	○	○	○
Satisfied with appearance	○			○	○		○	○			○		○			○	○	○	○		○	○	○
Believe family is well off							○	○	○		○		○	○	○	○	○	○				○	
Not tired in the morning			○		○						○			○				○		○			
Rarely have difficulty getting to sleep				○							○										○		
Parents are willing to help with problems at school	○	○		○	○				○				○			○		○				○	
Achieve well in school													○				○						
Living with both parents				○										○			○						
Multiple R	.46	.68	.56	.68	.48	.57	.53	.57	.60	.54	.56	.56	.54	.56	.53	.60	.58	.58	.60	.48	.58	.61	.64

○ Strong relationship (beta ≥ .15)
○ Moderate relationship (beta = .06 to .145)

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

	Austria	Belgium Fl.	Belgium Fr.	Canada	Czech Rep.	Denmark	Estonia	Finland	France	Germany	Hungary	Israel	Latvia	Lithuania	N. Ireland	Norway	Poland	Russia	Scotland	Slovakia	Spain	Sweden	Wales
Feel happy	○	○	○	○	○	○	○	○	○	○	○	○		○		○	○	○	○		○	○	○
Confident	○	○	○			○		○		○	○					○	○		○	○		○	
Satisfied with appearance	○	○	○	○		○	○				○	○	○		○	○	○	○	○		○	○	○
Rarely have headaches					○			○				○	○	○				○		○			
Exercise regularly		○		○	○	○	○	○							○			○	○	○			○
Achieve well in school		○		○					○					○	○	○			○		○		○
Believe family is well off	○												○			○	○	○	○	○			
Good diet (e.g., fruits, vegetables)															○	○			○		○		
Rarely have stomachaches				○			○						○				○						
Rarely have other health problems (e.g., nervous, dizzy)	○		○	○	○		○	○	○									○	○	○	○	○	
Do not want to change their body	○	○	○		○				○														○
Multiple R	.44	.44	.49	.42	.37	.45	.45	.47	.42	.41	.47	.38	.43	.38	.43	.50	.44	.43	.49	.35	.39	.47	.48

○ Strong relationship (beta ≥ .15)
○ Moderate relationship (beta .06 to .145)

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

	Austria	Belgium Fl.	Belgium Fr.	Canada	Czech Rep.	Denmark	Estonia	Finland	France	Germany	Hungary	Israel	Latvia	Lithuania	N. Ireland	Norway	Poland	Russia	Scotland	Slovakia	Spain	Sweden	Wales
Feel happy	○	○	○	○	○	○	○	○	○		○	○	○	○	○		○	○	○	○	○	○	○
Confident		○	○		○		○	○				○		○		○	○	○		○			
Satisfied with appearance	○	○	○	○					○					○	○		○		○	○	○		○
Rarely have headaches	○		○				○	○		○	○	○	○	○			○	○		○	○	○	
Exercise regularly		○		○							○	○			○	○			○	○			
Achieve well in school				○	○	○					○					○							
Believe family is well off		○	○						○	○	○	○	○	○	○	○	○	○					
Good diet (e.g., fruits, vegetables)	○	○		○		○					○			○	○								○
Rarely have stomachaches		○			○	○			○				○	○				○					
Rarely have other health problems (e.g., nervous, dizzy)	○								○			○	○	○			○			○	○	○	
Do not want to change their body		○	○	○																		○	○
Multiple R	.42	.48	.50	.41	.34	.53	.41	.44	.50	.37	.44	.52	.46	.43	.49	.45	.45	.42	.39	.43	.43	.48	.40

○ Strong relationship (beta ≥ .15)
○ Moderate relationship (beta .06 to .145)

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 (%)

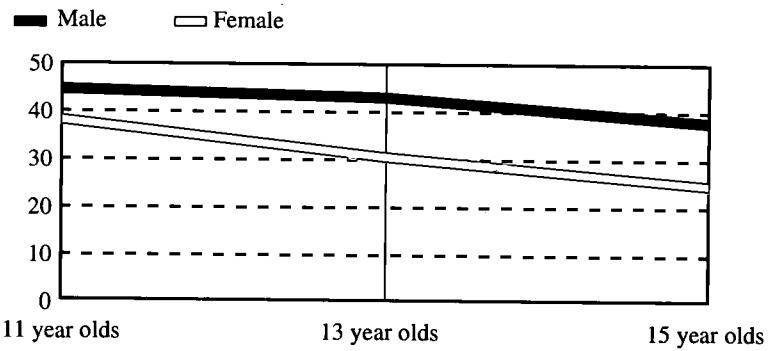


Figure 9.8 Students who ate fruit at least once a day (%)

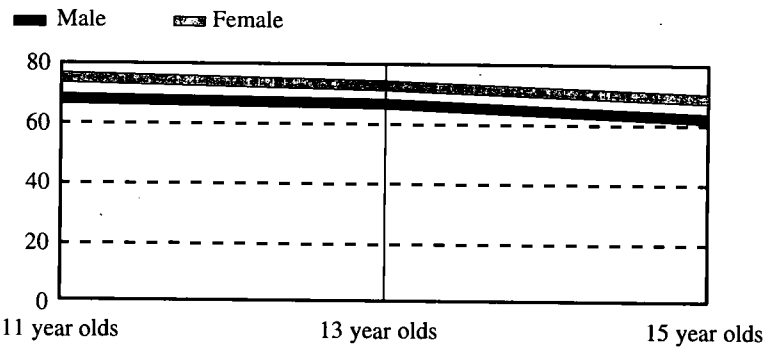
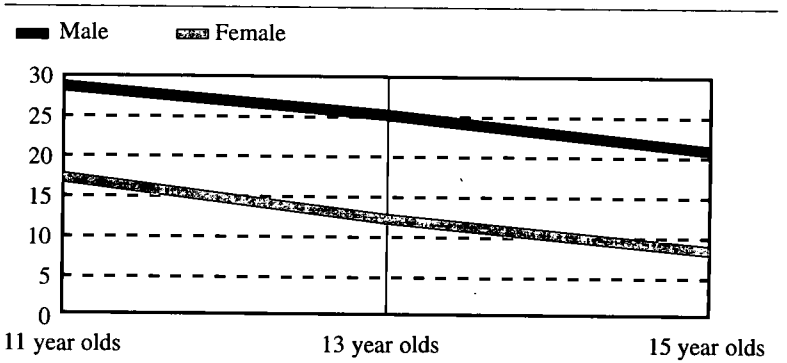


Figure 9.9 Students who participated in sports every day (%)



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 (%)

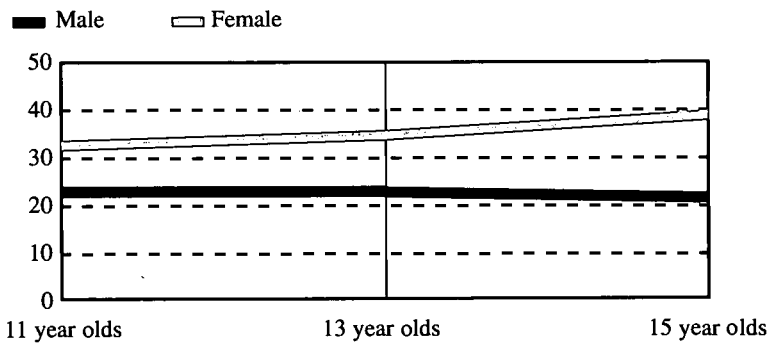


Figure 9.11 Students who smoked at least weekly (%)

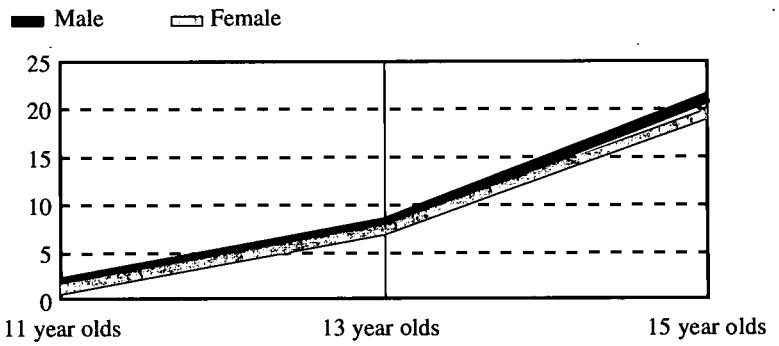
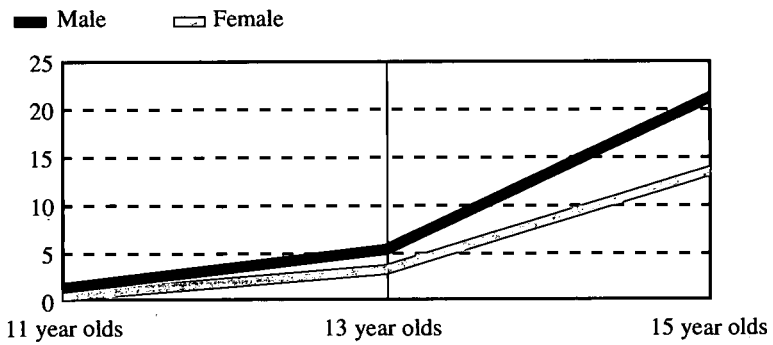


Figure 9.12 Students who had been really drunk four or more times (%)



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 (%)

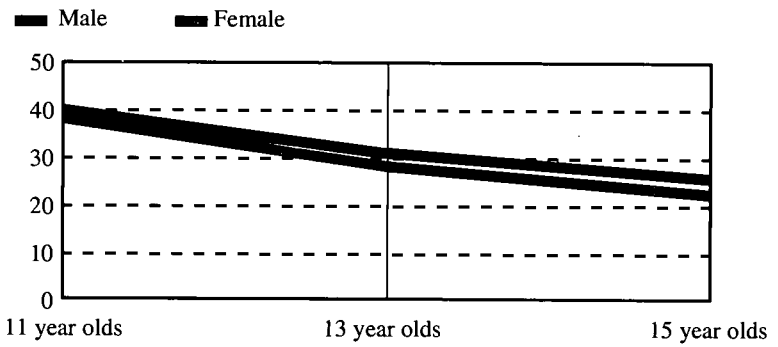


Figure 9.14 Students who indicated they always feel confident (%)

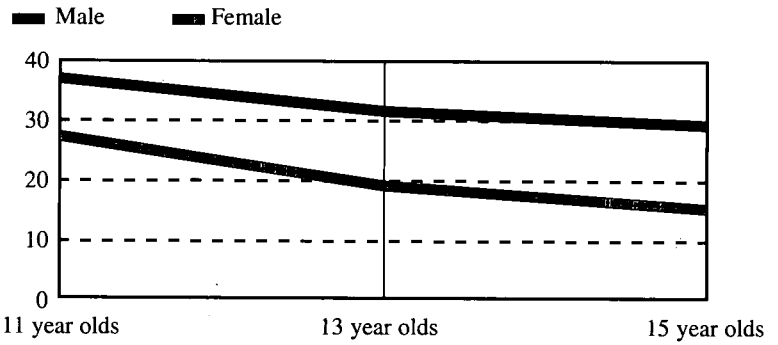


Figure 9.15 Students who indicated they always or often feel helpless (%)

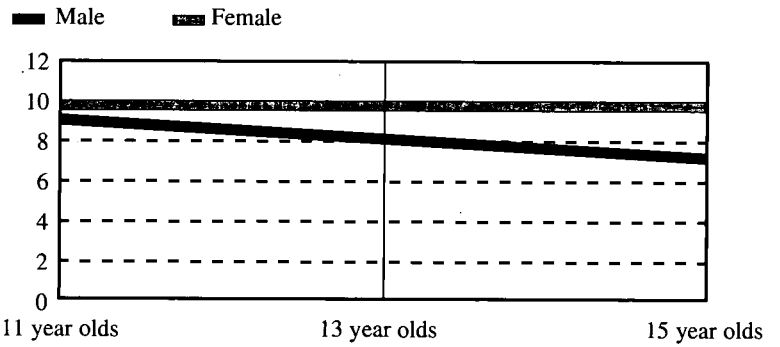


Figure 9.16 Students who have felt alone at school (%)

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

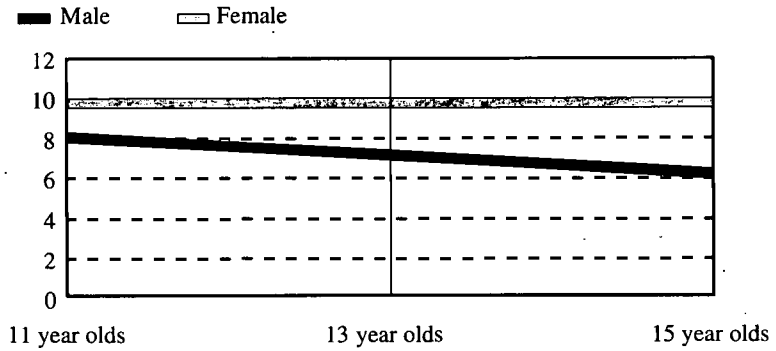


Figure 9.18 Students who have been bullied at school this term (%)

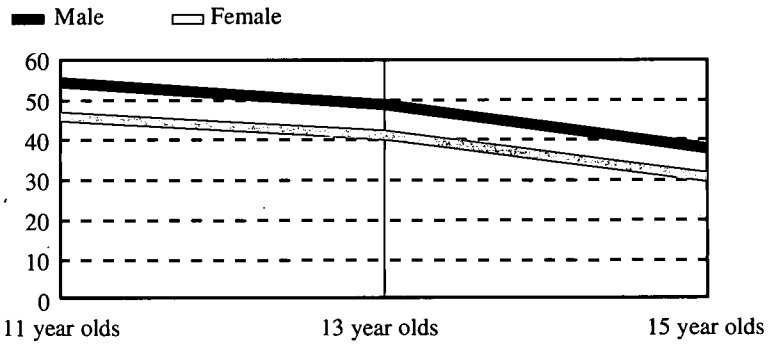


Figure 9.19 Students who were very often or rather often lonely (%)

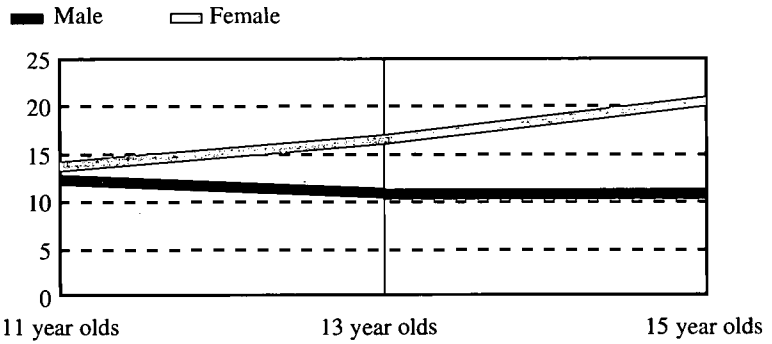


Figure 9.20 Students who were in a bad mood or irritable once a week or more (%)

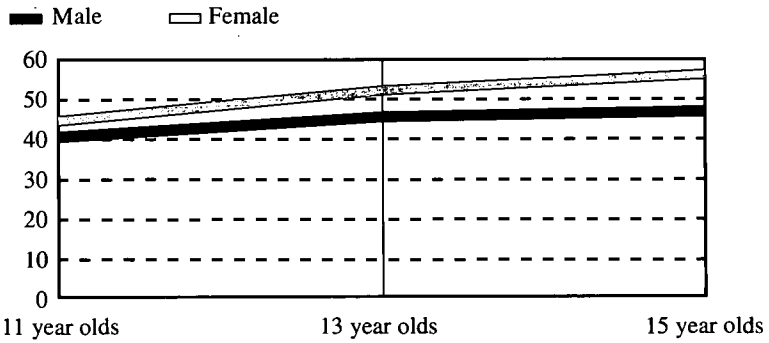
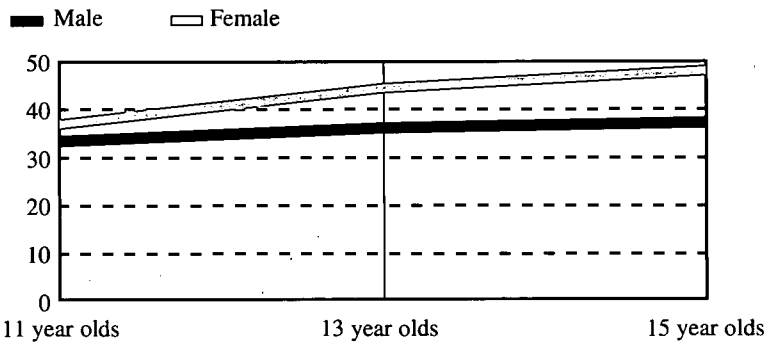


Figure 9.21 Students who experienced nervousness once a week or more (%)



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 (%)

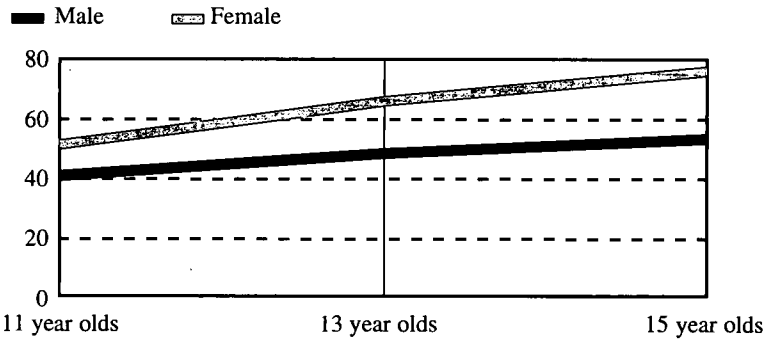


Figure 9.23 Students who found it easy to talk to their mother about things that really bother them (%)

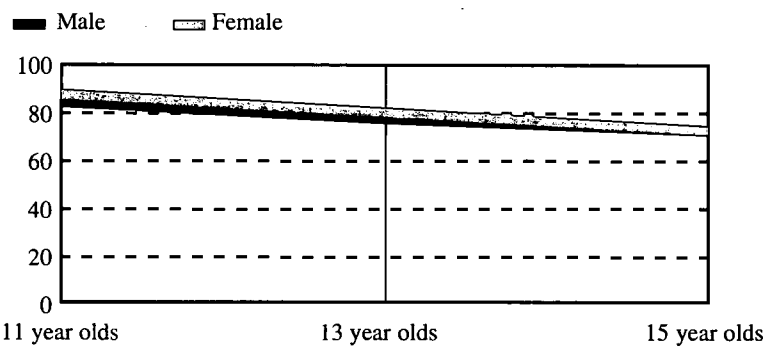
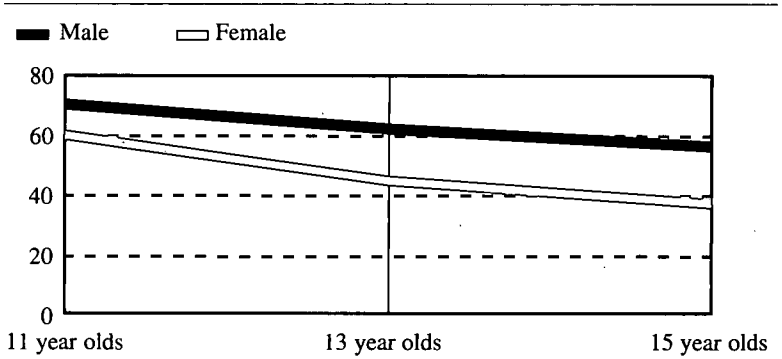


Figure 9.24 Students who found it easy to talk to their father about things that really bother them (%)



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 (%)

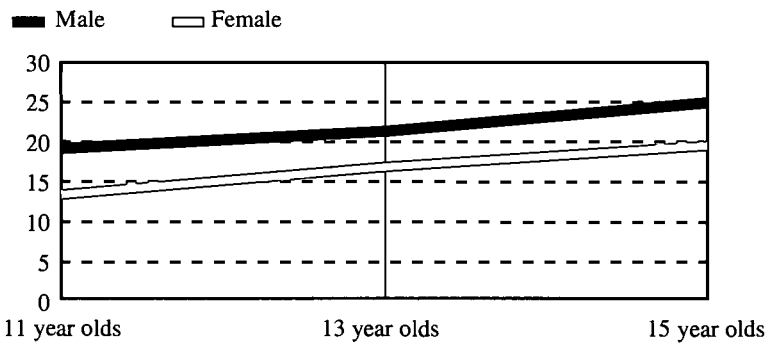


Figure 9.26 Students who found it easy or very easy to talk with same-gender friends about things that really bother them (%)

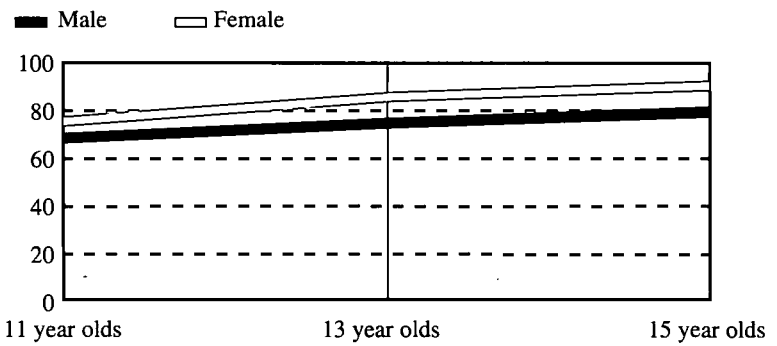
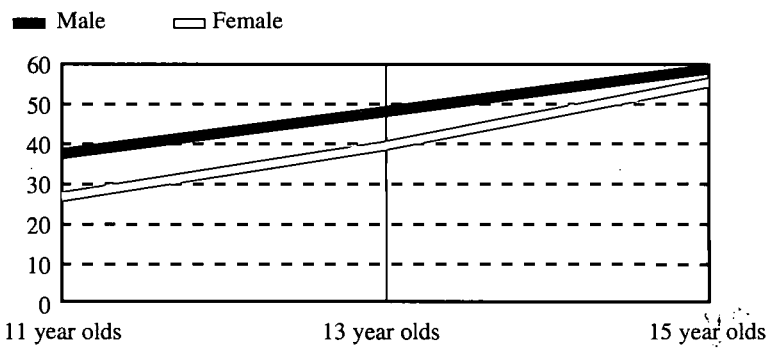


Figure 9.27 Students who found it easy or very easy to talk with opposite-gender friends about things that really bother them (%)



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 (%)

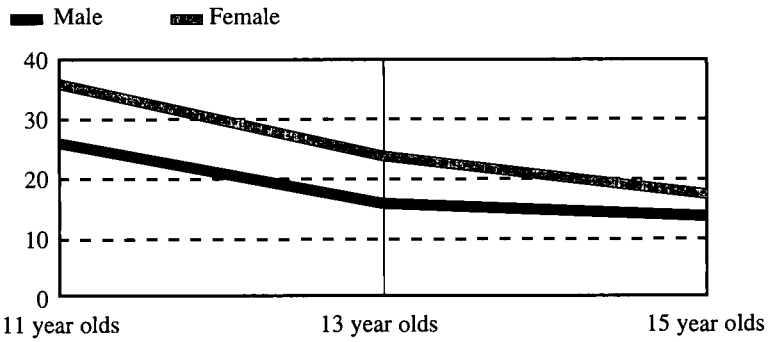


Figure 9.29 Students who agreed their teachers treat them fairly (%)

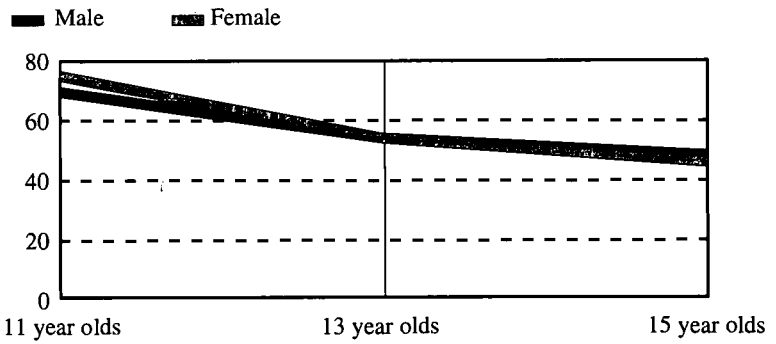
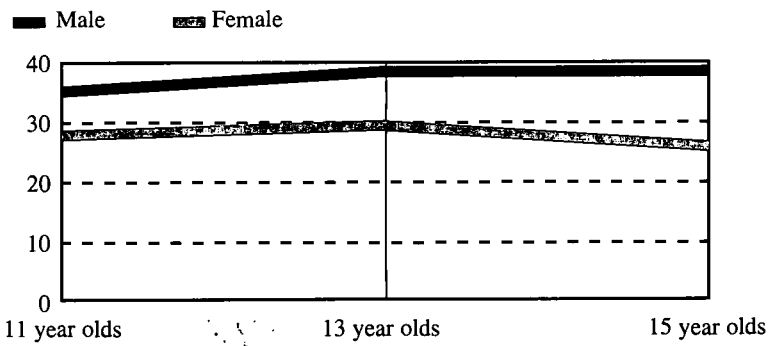


Figure 9.30 Students who had an injury treated by a doctor or nurse in the past 12 months (%)



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

CHAPTER

10

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

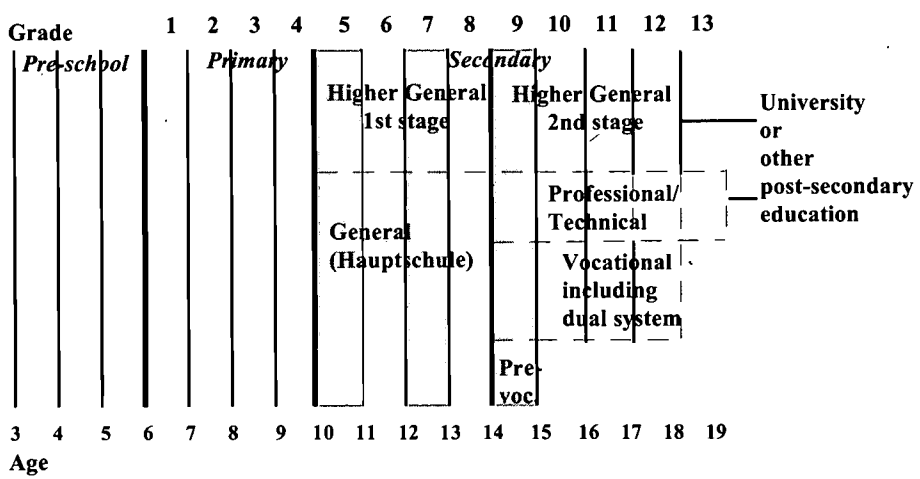
The ethnocultural makeup and economy of the participating countries are briefly described and figures outlining the educational system of each country are presented. As much as possible, the figures employ the same format for each country to allow for comparisons of those aspects of each system that 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



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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

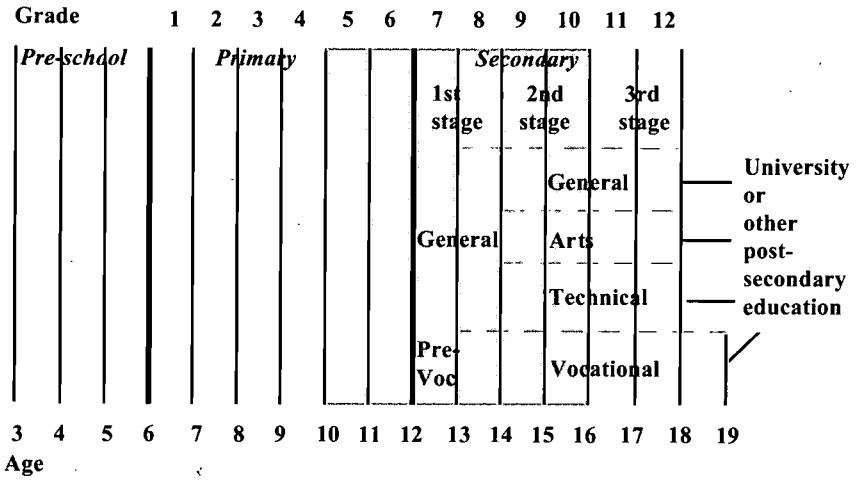
In Flanders there are four school networks: state, provincial, municipal and Catholic. School is compulsory for 12 years or from age 6 to 18; however, at 15, students may continue in part-time education until age 18. General education offers four types of education: general, technical, arts and vocational. 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.

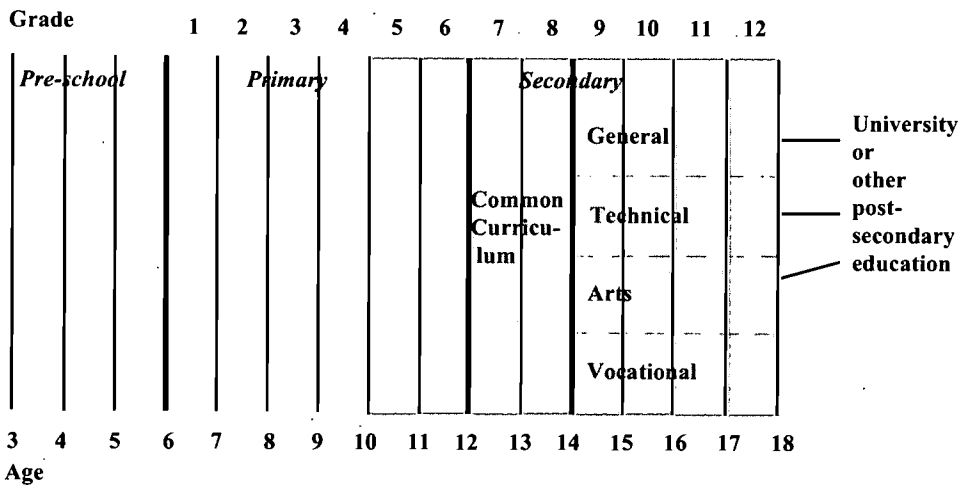
The French school system

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

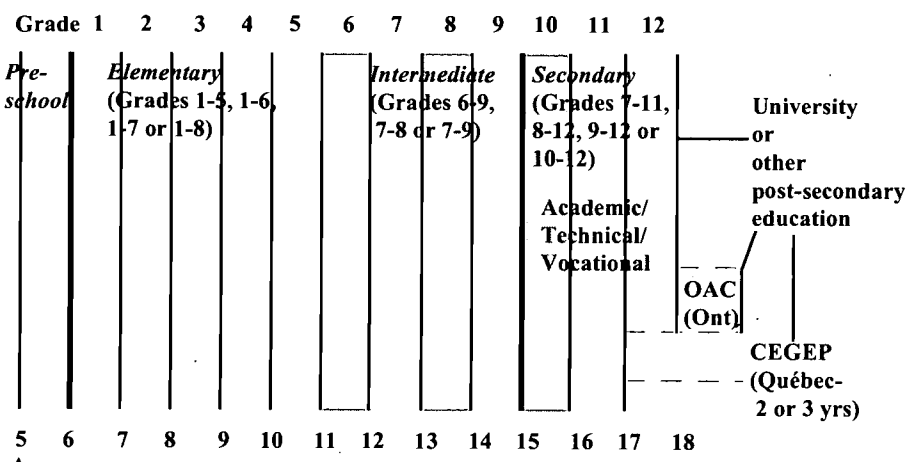
Belgium's (Flemish) educational system



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.

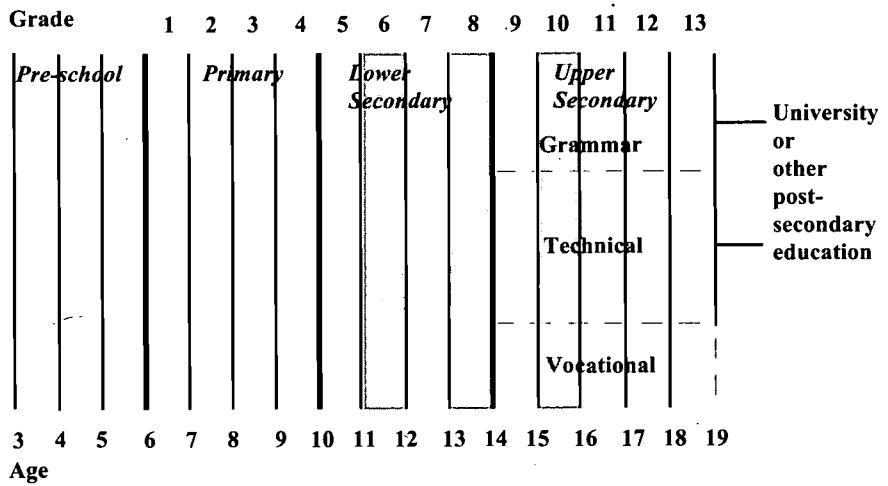
Canada

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.

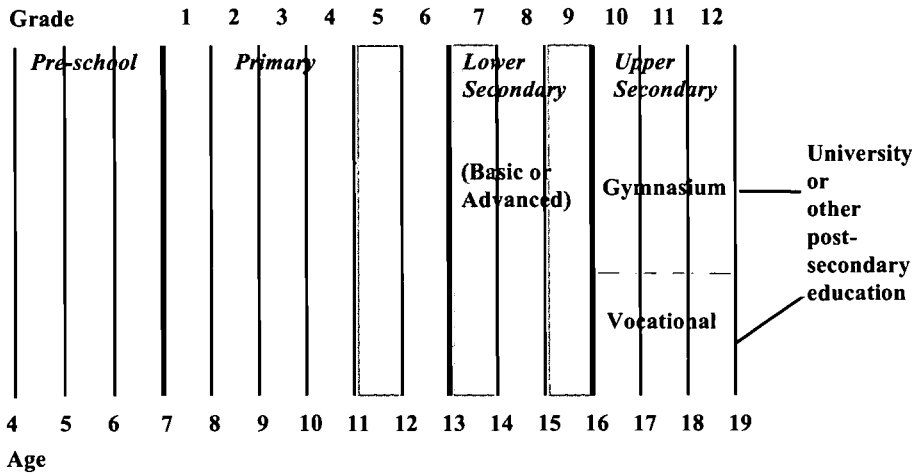
For the international sample, students from grades 6, 8 and 10 were surveyed. A substantial proportion of students repeat a grade and this increased the number of out-of-range respondents from the surveyed grades. Physical education is compulsory for students up to age 15. They have two or three lessons 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.

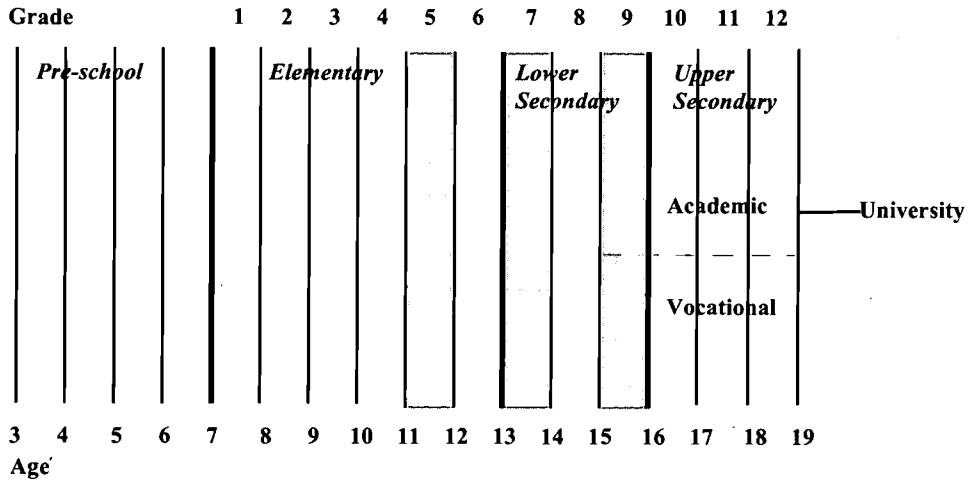
Denmark's educational system



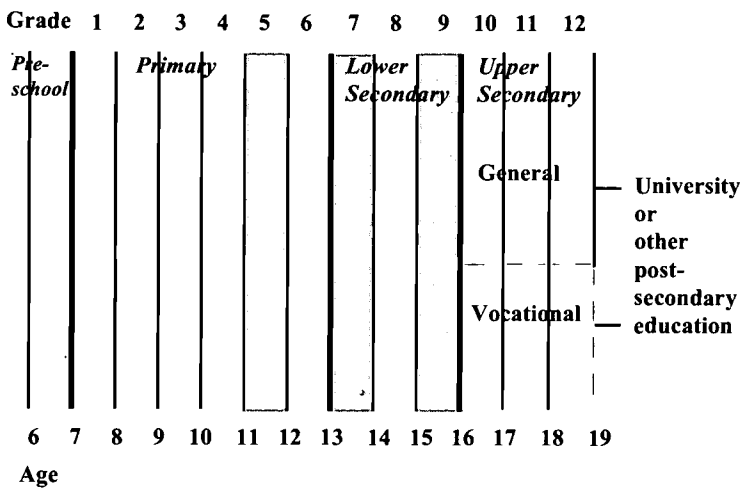
Estonia

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



Finland'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

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

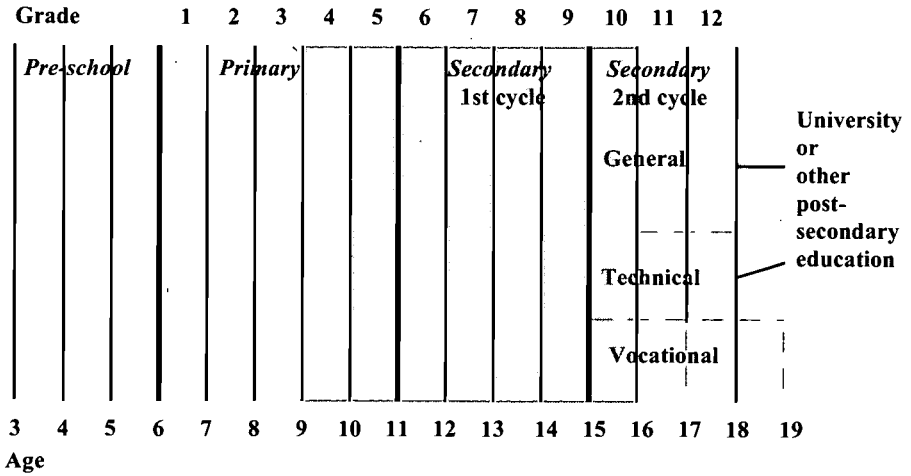
implementing curricula goals and objectives according to a national curriculum outline. Local authorities and schools have increasing latitude in matters relating to teaching arrangements and educational content. Compulsory schooling in Finland consists of basic general education given in a nine-year 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.

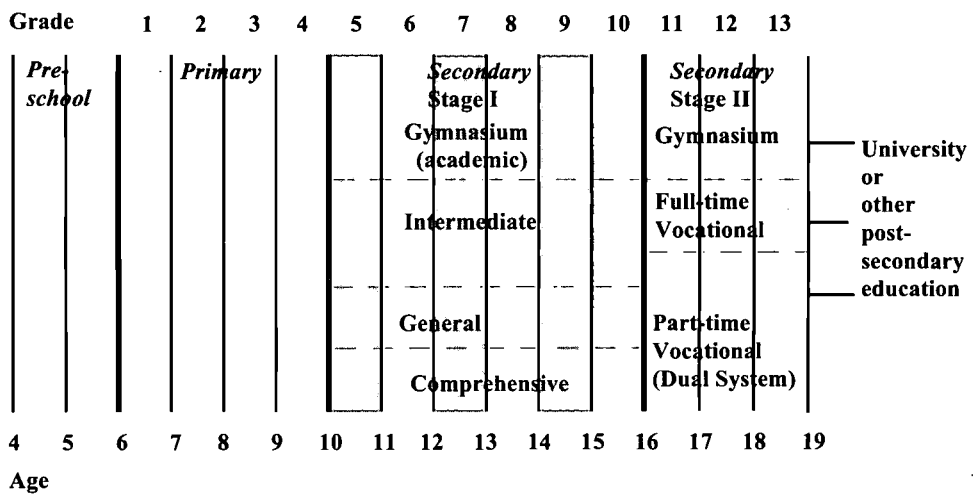
Germany

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



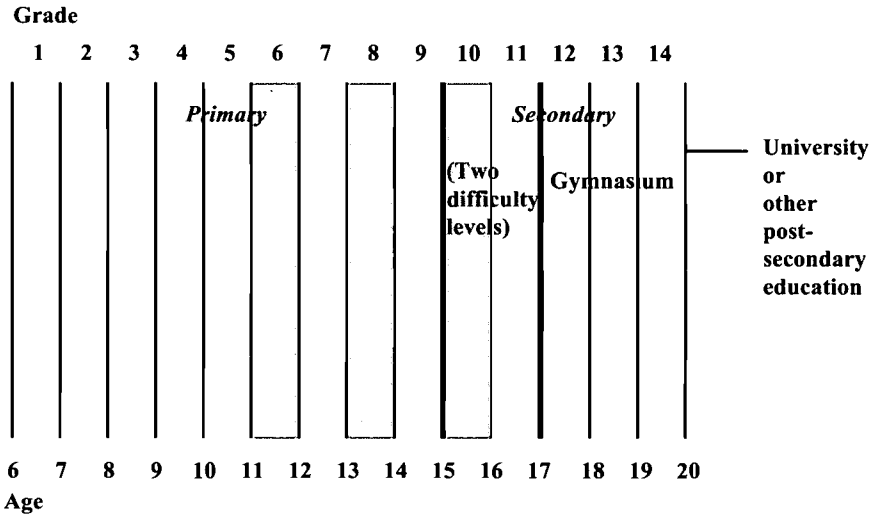
Greenland

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

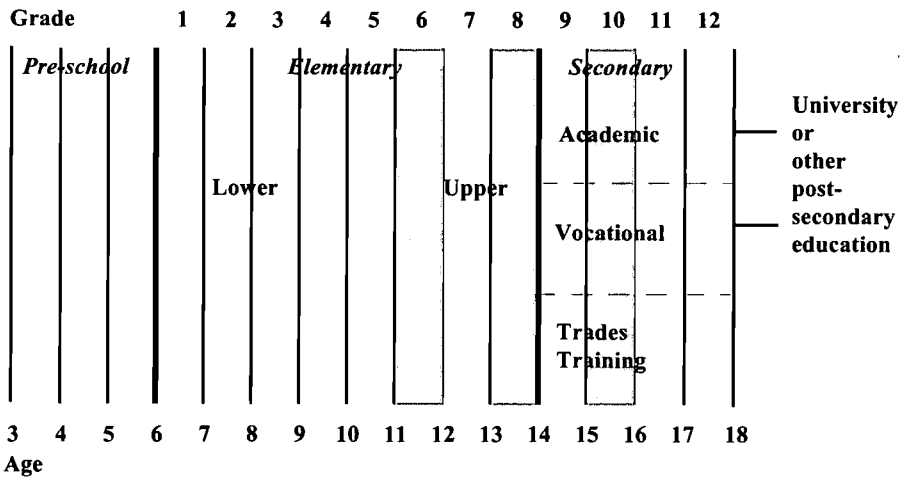
secondary school, a substantial number of students have repeated a year or more. Schools offer physical education, which is compulsory, at least three times a week; many schools have daily lessons. Health education is more sporadically taught by classroom and subject teachers, sometimes with the participation 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

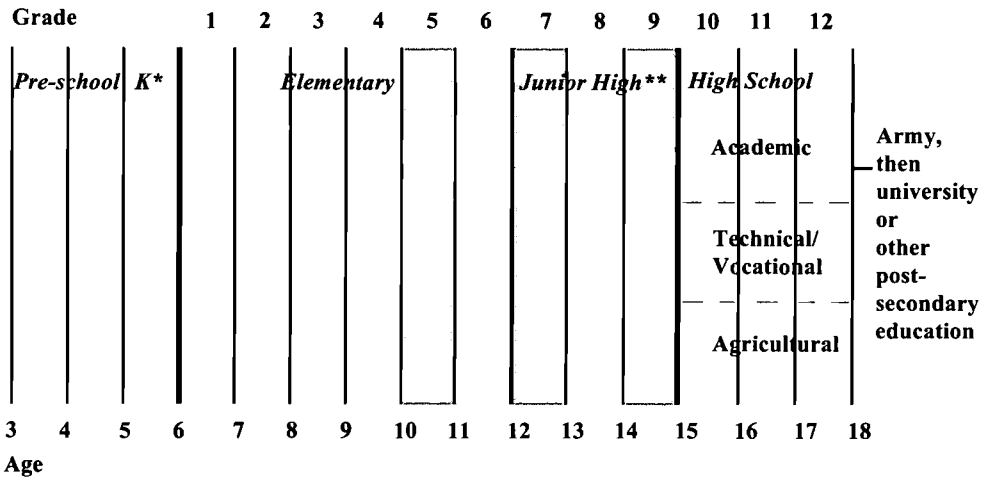
The population of Israel (20,700 square kilometres) is about 5.1 million, the majority of which live in cities. Hebrew and Arabic are the official languages, and many Israelis also speak English. Three-quarters of their national food needs are met by domestic agricultural production. Other industries 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.

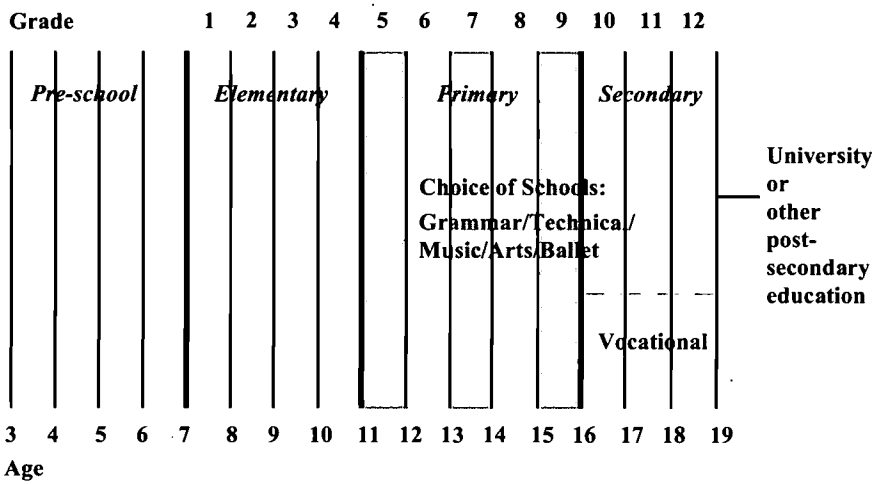
Latvia

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

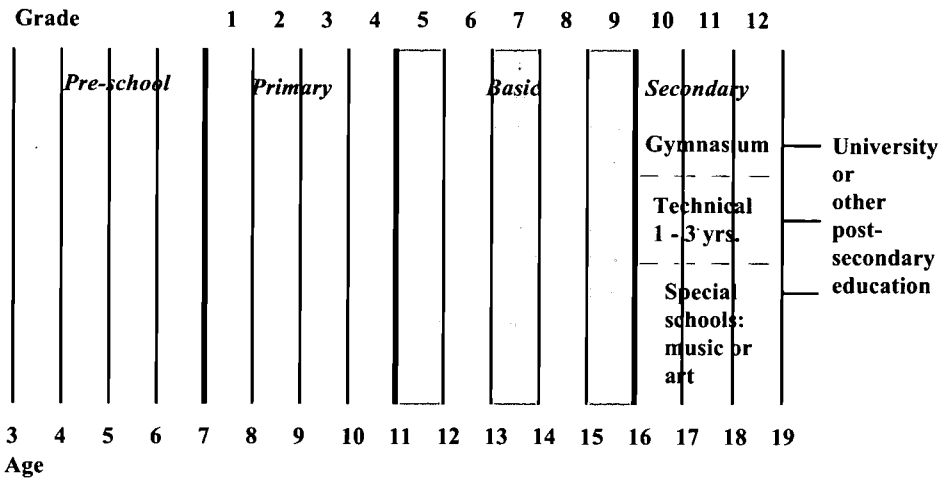


Lithuania

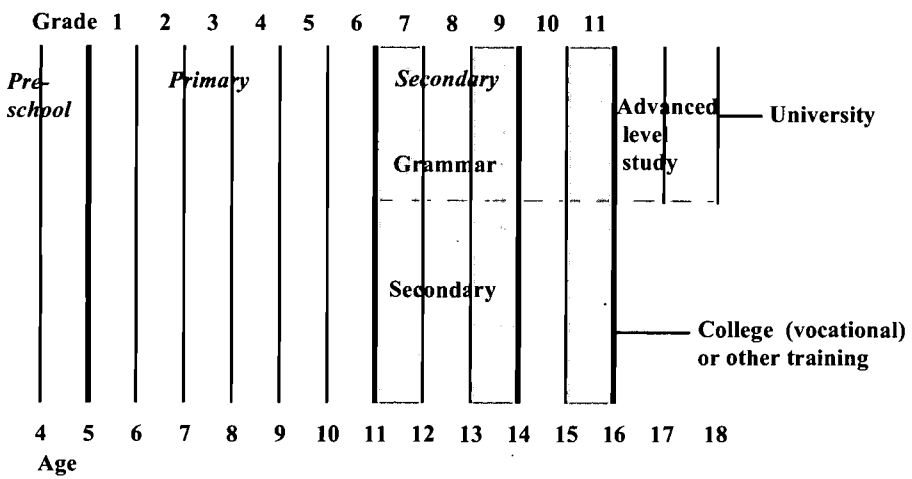
Lithuania is a Baltic country with a population of 3.7 million and an area of 65,200 square kilometres. More than 80 percent of the population are Lithuanian and there is a small Russian (9%) and Polish (7%) population. The official language is Lithuanian. Although the country was frequently occupied 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.

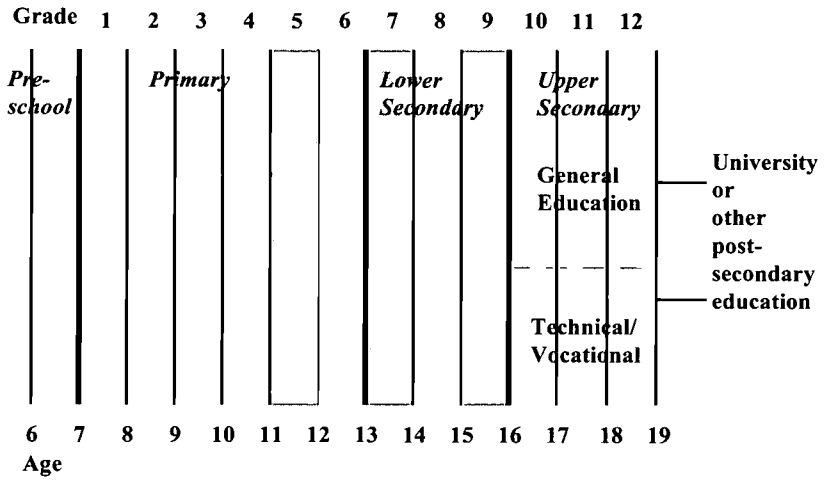
Northern Ireland

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



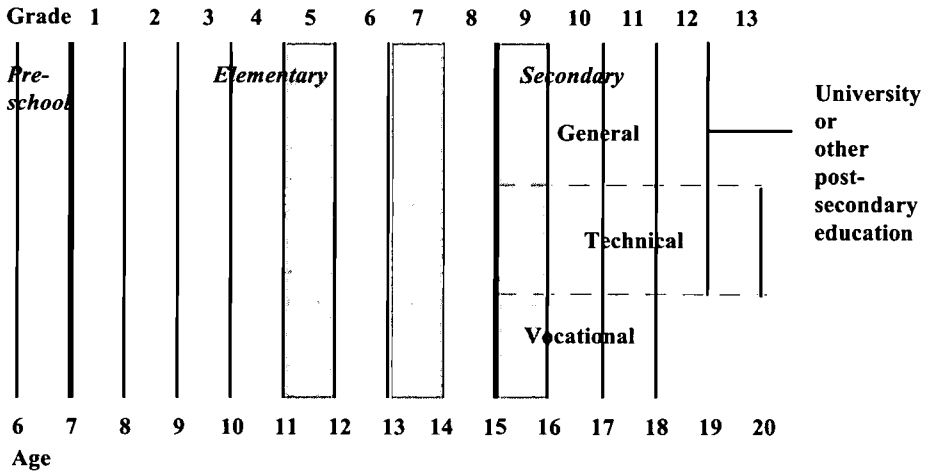
Norway

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.

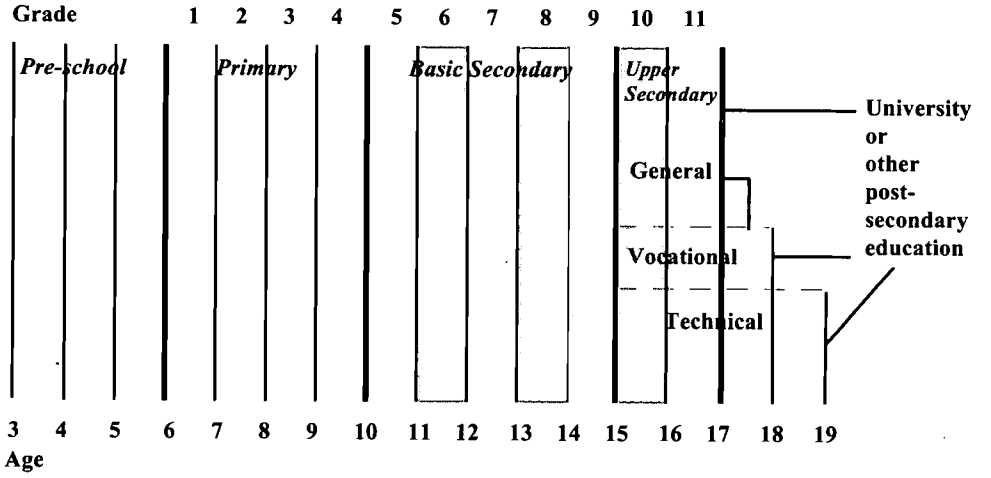
Russia

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

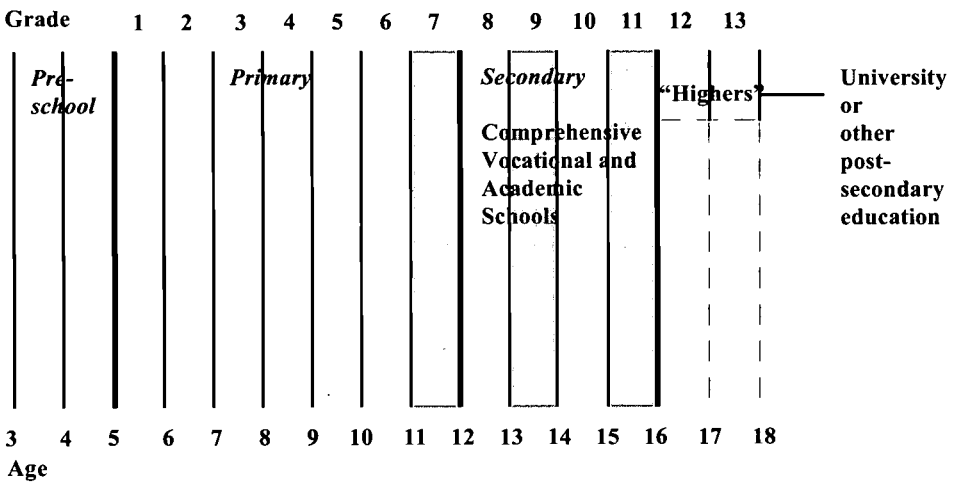


Scotland

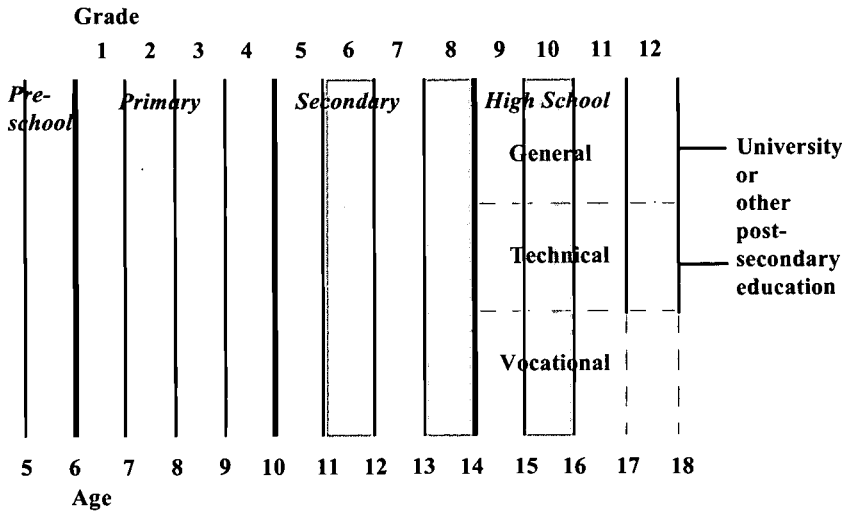
Scotland forms the northern part of the island of Great Britain. It is made up of numerous small islands as well as the mainland and covers approximately 80,000 square kilometres. Scotland has a population of just over 5 million and English is the main spoken language, although 80,000 Scots also speak 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



Slovakia'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

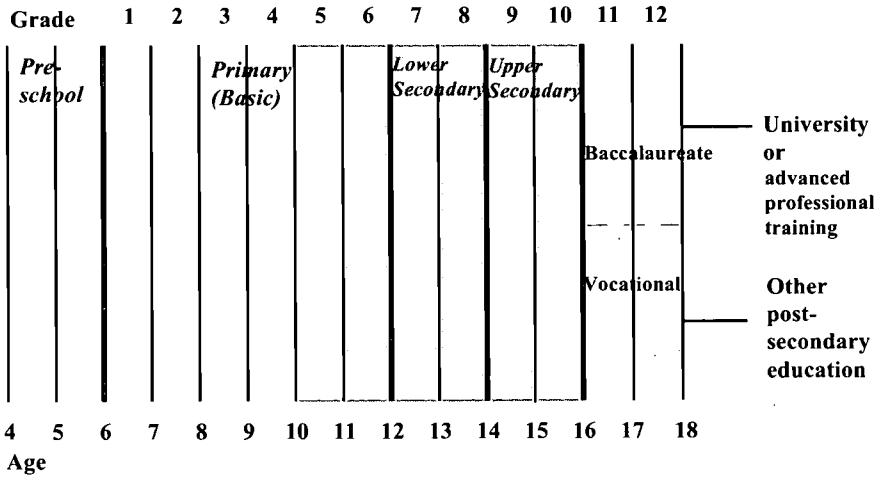
determine whether they attend a gymnasium (humanities oriented) or a specialized school (chemistry, building, electricity, nursing, arts, etc.) for four-year programs or a vocational school which offers two-, three- and four-year programs. Upon completion of courses at a gymnasium, students may opt for 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



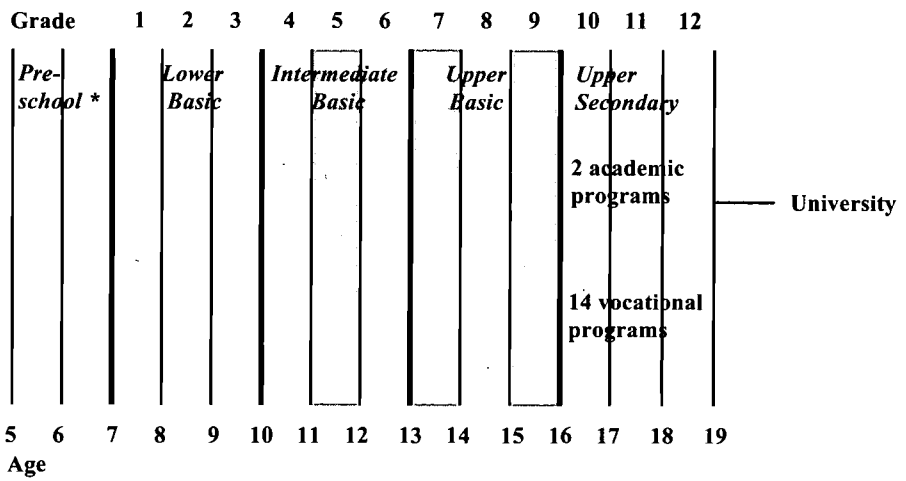
The central government defines the basis for the school system, which in some areas is governed by the regional government, but not yet in all the regions. An old and new school system operate at present: the new one, considered to be more progressive, has been implemented over the past few years. Education 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



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.

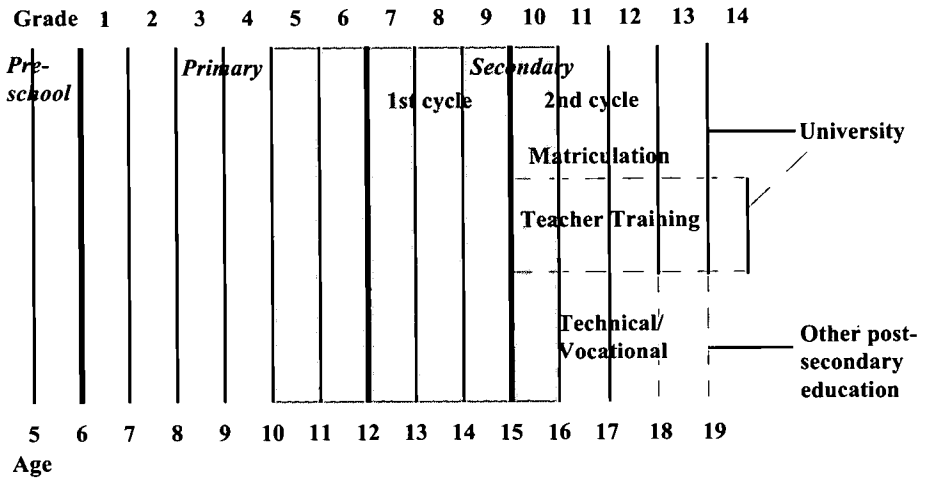
Questionnaires were administered to students in grade 5, 7 and 9 in Sweden. There are virtually no repeaters in the Swedish school system. Physical and health education is compulsory for each age group in the study. Students receive 390 hours of instruction in a subject called Play, Sports and Health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



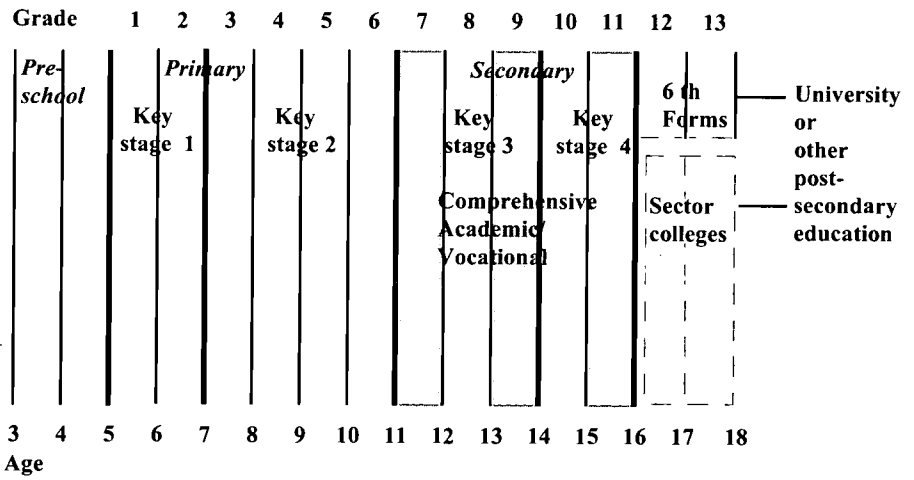
Switzerland selected a sample of students from grade 5 to 10 and then constructed a subsample to meet the criteria of the targeted age groups. It is difficult to estimate the proportion of students who are held back, but grade 6 and 8 were included in part to catch 13 and 15 year old students who had 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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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 fairly[2]**	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.

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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

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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 D: HBSC Publications

Research Publications

Aarø, L.E., Wold, B., Kannas, L. & Rimpelä, M. (1986). Health behaviour in school children. A WHO cross national survey. A presentation of philosophy, methods and selected results of the first survey. *Health Promotion, 1*(1): 17-33.

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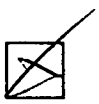

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