

# Global School-Based Student Health Survey Results

## Republic of Macedonia



Република Македонија  
Министерство за здравство



И.З.У. РЕПУБЛИЧКИ ЗАВОД ЗА  
ЗДРАВСТВЕНА ЗАШТИТА - СКОПЈЕ



**Global School-based Health Surveillance System**  
A contribution to the WHO STEPwise approach to Surveillance



# **Global School-Based Student Health Results**

## **Republic of Macedonia**

## **Republic Institute for Health Protection**

### **2007/2008 GLOBAL SCHOOL-BASED STUDENT HEALTH SURVEY RESULTS MACEDONIA**

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### **The authors**

# Executive Summary

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## **Purpose**

The main purpose of the 2007/2008 GSHS in Macedonia was to provide accurate data on health behaviours and protective factors among students and to establish trends in health behaviours for use in the evaluation of health promotion among youth and in schools.

## **Methodology**

The 2007/2008 Macedonia GSHS used a two-stage cluster sample design to produce a representative sample of students in grades 7, 8 of elementary school, and 1st and 2nd year of secondary school. Thirty schools were selected to participate in the Macedonia GSHS and a total of 2,114 questionnaires were completed in all 30 schools. The school response rate was 100.0% (30 of 30 selected schools). The student response rate was 93.4% (2,114 of 2,267 students included in the sample). The overall response rate was 93.4%. Macedonian GSHS Questionnaire comprised 74 questions, 52 from core questionnaire modules and 22 from the core-expanded and country specific questions.

## **Results**

### *Dietary behaviours*

In Macedonia, 14% of students were at risk for becoming overweight (i.e., at or above the 85<sup>th</sup> percentile, but below the 95<sup>th</sup> percentile for body mass index by age and sex) and 1.5% were overweight (i.e., at or above the 95<sup>th</sup> percentile for body mass index by age and sex). Male students (18%) are significantly more likely than female students (9.4%) to be at risk for becoming overweight.

### *Hygiene*

Overall, 4% of students never or rarely used soap when washing their hands during the past 30 days. A significantly bigger number of male students (4.3%) never or rarely used soap when washing their hands than female students (3.7%).

### *Violence and Unintentional Injury*

#### *Serious Injuries*

Overall, 31.3% of students said they had been seriously injured one or more times during the past 12 months. Male students (37.3%) were seriously injured more often than female students (24.9%).

### *Bullying*

Overall, 10.0% of students were bullied on one and more days during the past 30 days. The share was the same for male and female students.

### *Mental Health*

Overall, 8.6% of students seriously considered attempting suicide during the past 12 months. Smaller number of male students (6.8%) than female students (10.5%) seriously considered attempting suicide.

### *Tobacco use*

In Macedonia 14.1% of students smoked cigarettes on one or more days during the past 30 days. There was no significant difference between male and female students. 10.5% of students aged 13-15 years smoked cigarettes on one or more days during the past 30 days.

### *Alcohol and other drug use*

#### *Prevalence of current alcohol use*

The prevalence of current alcohol use among students (i.e., drinking at least one drink containing alcohol on one or more days of the past 30 days) is 39.4%. Male students (44.2%) are more likely than female students (34.6%) to report current alcohol use.

#### *Prevalence of lifetime drug use*

The prevalence of lifetime drug use (using drugs, such as marijuana, one or more times during their life) is 3.0%. Male students (3.9%) significantly more often reported lifetime drug use than female students (2.0%). 1.8% of students aged 13-15 years used drugs one or more times during their life. None of the students had tried drugs before the age of 14.

### *Sexual behaviours that contribute to HIV infection, other STIs and unintended pregnancy*

Overall 11.9% of students have had sexual intercourse during their life. Male students (19.5%) significantly more often have had sexual intercourse than female students (4.1%). Percentage of students aged 13-15 years who have ever had sexual intercourse is 8.9 (14.4 male, 3.1 female).

### *Physical activity*

In Macedonia, 15.7% of students were physically active all 7 days during the past 7 days for a total of at least 60 minutes per day. Male students (18.3%) were significantly more physically active than female students (12.9%).

### *Protective factors*

Overall, 37.3% of students reported that their parents or guardians have never or rarely checked if their homework was done during the past 30 days and overall, 19.8% of students reported that their parents or guardians never or rarely knew what they were doing with their free time most of the time or always during the past 30 days. Male students (24.2%) significantly more often than female students (15.1%) reported that their parents or guardians really knew what they were doing with their free time most of the time or always.

## **Conclusions**

The GSHS survey showed that students in Macedonia face a number of health problems related to behaviours, e.g. dietary behaviour, tobacco use, use of alcohol, sexual behaviour, violence and injury risk behaviour. The survey also showed that such behaviours are not simply the actions of individuals but take place in a social context, e.g. education about prevention in school. The survey highlighted health issues that were known but insufficiently regarded, and it also brought other problems to light. For example, mental health problems have been acknowledged as an issue for adolescents in Macedonia, but the survey has indicated that more attention, more prevention and more support efforts are urgently required in this area.

## **Recommendations**

According to the findings of this survey it is necessary to pay special attention to the direction of the programmes for health promotion and health prevention. A lot has to be done on improvement of the information and improvement of the healthy lifestyle based on behavioural change. First of all, adolescents-health goals and joint actions have to be developed and promoted by health facilities, families, schools, community institutions.

Of great importance is the coordinating role and activities which have to be done by the Ministry of Health and Republic Institute for Health Protection in the Republic of Macedonia – strategic planning, implementation of training programmes, monitoring and evaluating the adolescent and youth health.

Development, endorsement and implementation of the National Adolescent Health Strategy 2008-2015 is also important. The strategy aims to improve and promote health and development of adolescent addressing the following key priority areas: strengthening data collection system on adolescent health, reduction of mortality, morbidity and disability rates by addressing their underlying causes, promotion of healthy lifestyles among adolescents, improving the capacities of the Ministry of Health, the Republic Institute for Health Protection and other relevant institutions in coordination and management of adolescent health programs.

There is a need to expand school health educational programmes to broaden the knowledge of students about food, nutrition, hygiene, violence and unintentional injury, mental health, tobacco use, alcohol and other drug use, sexual behaviours that contribute to HIV infection, other STIs and unintended pregnancy, physical activity and protective factors, changing their risk behaviours.

Finally, in order to achieve the strategic goal of promoting and supporting healthy behaviours among adolescents in Macedonia, special attention should be given to development and implementation of the strategic interaction among education, health, family and community systems.



## List of abbreviations

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- GSHS - Global School-based health survey
- UNICEF - The United Nations Children's Fund
- UNESCO - United Nations Educational, Scientific and Cultural Organization
- UNAIDS - The Joint United Nations Programme on HIV and AIDS
- HIV - Human immunodeficiency virus
- AIDS - Acquired immune deficiency syndrome
- WHO - World health Organization
- STI - Sexually Transmitted Infection
- STD - Sexually Transmitted Disease
- RIHP - Republic Institute for Health Protection
- EU - European Union
- BMI - Body Mass Index
- CDC - Centers for disease control and prevention
- IARC - International Agency for Research on Cancer



# Part 1: Introduction

---

## **Background**

In 2001, WHO in collaboration with UNAIDS, UNESCO, and UNICEF, and with technical assistance from the US Centers for Disease Control and Prevention (CDC), initiated development of the Global School-based Student Health Survey (GSHS).

Since 2003 Ministries of Health and Education around the world have been using the GSHS to periodically monitor the prevalence of important health risk behaviours and protective factors among students.

To date, 79 countries have completed or are undertaking the GSHS. This report describes the results of the first GSHS conducted in Macedonia by the Republic Institute for Health Protection. The survey took place between December 1<sup>st</sup> and December 31<sup>st</sup>, 2007.

## **Purpose**

The purpose of the GSHS is to provide accurate data on health behaviours and protective factors among students in order to:

- Help countries develop priorities, establish programs and advocate for resources for school health programs and policies;
- Establish trends in health behaviours for use in the evaluation of health promotion among youth and in schools; and
- Enable countries, international organizations and others to make comparisons within and between countries regarding the prevalence of healthy behaviours.

## **ABOUT GSHS**

GSHS is a school-based survey conducted primarily among students aged 13-15 years. It is designed to measure behaviours that relate to the leading causes of mortality and morbidity among children and adults:

- Dietary behaviours
- Hygiene
- Violence and unintentional injury
- Mental health
- Tobacco use
- Alcohol and other drug use
- Sexual behaviours that contribute to HIV infection, other STIs and unintended pregnancy
- Physical activity
- Protective factors

Prior to the GSHS, other surveys were carried out in Macedonia on the issues of the reproductive health of adolescents and their attitudes towards HIV/AIDS, attitudes towards tobacco and other drug use. For example, in 2002 the study within the WHO activities through the Global Youth Tobacco Survey project, supported by CDC Atlanta and the Country office of WHO in Macedonia, showed that the prevalence of smoking was 8.2% for the youths aged 13-15<sup>1</sup>. Of these, 20% have started to smoke before the age of 10. In other survey that covered 420 examined persons aged 13-16 in the Skopje region, showed that 21.2% of the examined had tried tobacco, while 15.9% were still using it. Only 5.2% of examined smokers consider they might quit smoking<sup>2</sup>. In the year 2006, in Macedonia a GHPS (Global Health Professional Survey) was conducted among students enrolled in the last three years of the medical studies at the University in Skopje. This survey included 309 students of which more than 40% were smokers<sup>3</sup>. Macedonia conducted the Health Behaviour in School-Aged Children /HBSC/ Study in 2002 on the sample of 4800 children aged 11, 13 and 15 nationwide. This study monitored the attitudes, practices and lifestyles of the children in various and changeable life conditions and then compared the national findings with worldwide findings. According to this study, 4.1%, 8.6% and 37.4% of boys aged 11, 13 and 15, respectively reported they had been smoking, while the figures for girls were 2.3%, 7.3% and 34.3%; 7.8%, 8.8% and 26.2% of boys aged 11, 13 and 15, respectively reported drinking alcohol on weekly basis; 37.4% of boys and 3.6% of girls aged 15 reported they had had sexual intercourse<sup>4</sup>. Several surveys in primary and secondary schools in RM have demonstrated alarming indications related to bad habits, especially alcohol and its overuse and daily use<sup>5</sup>. A survey for HIV/AIDS prevalence and risk-behaviour among vulnerable groups, conducted in 2005<sup>6</sup>, 2006<sup>7</sup> and 2007<sup>8</sup> included the youths aged 15-24 and examined their knowledge, attitudes, beliefs and practices related to HIV/AIDS and history to other risk behaviour such as injecting illicit drugs. The strategic assessment of policy, quality and access to contraception and abortion in Macedonia has revealed that the majority of young participants in the focus groups most frequently used condom as a means of contraception while they were less knowledgeable and educated about the use of hormonal contraception with very poor knowledge about the usage of urgent contraception<sup>9</sup>. In a study about the traffic injuries in children and youth it was shown that 49.4% of all injured pedestrians were children and youth aged 0-24, while mortality rate of traffic injuries was 3.1 in 2000<sup>10</sup>. The standardized mortality rate of suicides in youths in Macedonia is among the lowest in Europe (4.34/10000), and it is even lower than in the neighbouring countries.<sup>11</sup>

Still, there has been no comprehensive, nationwide assessment of health-related awareness, practices and behaviours in the age group 13 to 15 years. The GSHS is designed to be the first representative survey in Macedonia of student health in this age group.

## **METHODS**

### *Sampling*

The 2007/2008 Macedonia GSHS used a two-stage cluster sample design to produce a representative sample of students in grades 7, 8, I year and II year.

The first-stage sampling framework included all schools containing any of grades 7, 8, I year and II year. Schools were selected with probability proportional to school enrolment size; 30 schools were selected to participate in the Macedonia GSHS.

The second-stage sampling was drawn from grades 7, 8, I year and II year in all schools that met the first-stage

criteria. The sample consisted of randomly selected intact classrooms (using a random start) from each school to participate. In schools with a small number of students, the classes were consolidated into one single Primary Sampling Unit. All students in the sampled classrooms were eligible to participate in the GSHS.

### *Weighting*

A weighting factor was applied to each student record to adjust for non-response and for the varying probabilities of selection.

The weighting formula used for calculation was:

$$W = W1 * W2 * f1 * f2 * f3$$

W1 = inversion of probability of school selection

W2 = inversion of probability of grade selection

f1 = adjustment factor for non-response at school level, calculated by size of school (small, middle, big) and by registered schools rather than quantity of schools.

f2 = adjustment factor for non-response at class level, calculated by class

f3 = adjustment factor after stratification, calculated by degrees

Weighting allows the results to be applied to the *whole* population of students in grades 7, 8, I year and II year in Macedonia.

### *Response rates*

For the GSHS in Macedonia, 2,114 questionnaires were completed in 30 schools in 2007. The school response rate was 100.0% (30 of 30 selected schools). The student response rate was 93.4% (2,114 of 2,267 students included in the sample). The overall response rate was 93.4%.

The data set was edited for inconsistencies. Missing data were not statistically imputed. Software that takes into consideration the complex sample design was used to compute prevalence estimates and 95% confidence intervals. GSHS data are representative of all students attending grades 7, 8, I year and II year in Macedonia.

The significance of difference between male and female students' responses was tested using Chi-square test for  $p \leq 0.05$ .

### *Administering the survey*

The GSHS survey was administered by the Republic Institute for Health Protection. The survey relied upon the efforts of the coordinator, Scientific steering committee, Working group and administrators.

The Scientific steering committee was consisted of a coordinator, president, representatives of the Ministries of Health, Education and Agency for Youth and Sport. The Committee participated in the development of tools for

the survey, the sampling strategy and the involvement of schools. The Working Group included representatives from the RIHP and Regional Institutes for Health Protection while the survey administrators recruited from the Republic Institute for Health Protection and 10 Regional Institutes for Health Protection were responsible for the collection of data and school documentation.

Survey procedures were designed to protect student privacy by allowing voluntary and/or anonymous participation. The students completed the self-administered questionnaire during one classroom period and recorded their responses on a sheet that could be scanned by a computer. Survey administrators were specially trained to conduct the GSHS on a training workshop organized by RIHP and WHO office in Geneva.

### **GSHS Questionnaire**

Macedonian GSHS Questionnaire comprised 74 questions, 52 from core questionnaire modules and 22 from the core-expanded and country specific questions that addressed the following topics:

- Dietary behaviours
- Hygiene
- Violence and unintentional injury
- Mental health
- Tobacco use
- Alcohol and other drug use
- Sexual behaviours that contribute to HIV infection, other STIs and unintended pregnancy
- Physical activity
- Protective factors

The questionnaire was developed (see Appendix 1) by representatives of the Republic Institute of Health Protection, Regional Institutes for Health Protection, Ministries of Health and Education, Agency for Youth and Sport and UNICEF in close collaboration with CDC and WHO. The questionnaire was translated in Macedonian and Albanian.

## Part 2: Results

### DEMOGRAPHICS

#### Introduction

The population in Macedonia is getting older. The average age of the population is 35.6 years, 34.8 for males and 36.3 for females. Children and youth under age of 15 make up 20.19% of the total population, while the age group 13-15 makes up 4.56% of the total population in R. Macedonia<sup>12</sup>.

#### Results

The GSHS sample in Macedonia was comprised of 2,114 persons: 1,034 respondents were boys and 1,054 were girls, while 26 respondents did not declare their gender. The subset of respondents aged 13 to 15 years was 1,474 individuals, making up 74.9% of the total sample. Respondents were spread almost equally across the four grades.

**Table 1:** Demographic characteristics of the sample in Macedonia, by percentage

Sex	Weighted %	Age	Weighted %	Grade	Weighted %
Male	52.4	12 years and younger	4.9	7	26.5
Female	47.6	13 to 15 years	74.9	8	26.2
		16 years and over	20.2	I	24.1
				II	23.2

### DIETARY BEHAVIOURS

#### Background

During adolescence, overweight is associated with hyperlipidemia, raised blood pressure (hypertension), abnormal glucose tolerance, and adverse psychological and social consequences.

Overweight acquired during childhood or adolescence may persist into adulthood and increase risk later in life for coronary heart disease, diabetes, gallbladder disease, some types of cancer, and osteoarthritis of the weight-bearing joints. Nutritional deficiencies as a result of food insecurity (protein-energy malnutrition, iron, Vitamin A, and iodine deficiency) affect school participation and learning<sup>13</sup>.

Relative weight in adulthood and weight gain have been found to be associated with increased risk of cancer of the breast, colon, rectum, prostate and other sites<sup>14</sup>. Whether there is an independent effect of childhood weight is difficult to determine, as childhood overweight is usually continued into adulthood. The recent review by the International Agency for Research on Cancer (IARC) in Lyon, France, concluded that there was clear evidence of a relationship between onset of obesity (both early and later) and cancer risk<sup>15</sup>.

Fruits and vegetables are good sources of complex carbohydrates, vitamins, minerals, and other substances important for good health. Dietary patterns that include higher intakes of fruits and vegetables are associated with several health benefits, including a decreased risk for some types of cancer<sup>16</sup>.

## Results

The dietary behaviours indicators in the sample are described in the following table.

**Table 2\*.** BMI and dietary behaviours, by sex and age, *Macedonia, 2007.*

Question	Total % (CI)**	Sex		Age	
		Male % (CI)	Female % (CI)	13-15	16 or older
Percentage of students who are at risk for becoming overweight <sup>1</sup>	14.0 (12.4 - 15.6)	18.0 (15.0- 21.1)	9.4 (7.4 - 11.5)	14.0 (11.9-16.2)	10.6 (6.7 - 14.5)
Overweight <sup>2</sup>	1.5 (1.0 - 1.9)	2.5 (1.5- 3.5)	0.2 (0.0- 0.6)	1.6 (1.0 - 2.2)	0.9 (0.0 - 2.1)
Went hungry most of the time or always because there was not enough food in their home during the past 30 days	1.9 (1.0 - 2.8)	2.8 (1.7- 4.0)	0.8 (0.1 - 1.4)	1.6 (0.8 - 2.3)	3.2 (0.7 - 5.6)
Percentage of students who most of the time or always ate breakfast during the past 30 days	77.2 (74.8 - 79.5)	78.4 (75.8- 81.1)	76.1 (72.7 - 79.5)	77.9 (75.6 - 80.2)	73.9 (69.2 - 78.5)
Usually ate fruit, such as apple, pear, orange, banana, grape, melon, or watermelon, one or more times per day during the past 30 days	83.7 (81.7 - 85.8)	84.5 (82.1- 86.9)	82.8 (79.2 - 86.3)	85.9 (83.8 - 88.1)	76.1 (71.7 - 80.4)
Usually ate vegetables, such as tomato, paprika (pepper), potato, cucumber, or salad, one or more times per day during the past 30 days	80.4 (78.2 - 82.6)	79.6 (76.3- 83.0)	81.8 (79.0 - 84.6)	81.4 (79.2 - 83.7)	76.8 (72.5 - 81.1)
Ate fruits and vegetables five or more times per day during the past 30 days	31.5 (28.9 - 34.0)	31.5 (28.1- 34.9)	31.0 (28.4 - 33.6)	32.6 (30.4 - 34.8)	25.0 (20.2 - 29.8)
Ate in a fast food restaurant, such as McDonalds, three or more days during the past seven days	25.6 (23.5 - 27.8)	27.1 (23.3- 30.9)	23.5 (21.0 - 26.0)	24.1 (21.7 - 26.4)	32.4 (27.1 - 37.7)
Drink carbonated soft drinks, such as Coke, Fanta or Schweppes two or more times per day during past 30 days	50.3 (46.2 - 54.5)	51.7 (47.4- 56.0)	49.1 (44.2 - 53.9)	50.6 (45.7 - 55.6)	51.3 (46.6 - 56.1)
Percentage of students who were taught the benefits of healthy eating in any of their classes during this school year	37.1 (32.8 - 41.3)	35.6 (30.5- 40.8)	38.6 (32.7 - 44.4)	41.0 (36.8 - 45.3)	22.4 (13.2 - 31.7)

\* Core questions are shaded yellow, core-expanded and country-specific questions are shaded green and dichotomous variables derived from two or more questions are shaded grey. This applies to all results in tables.

\*\*95% confidence interval.

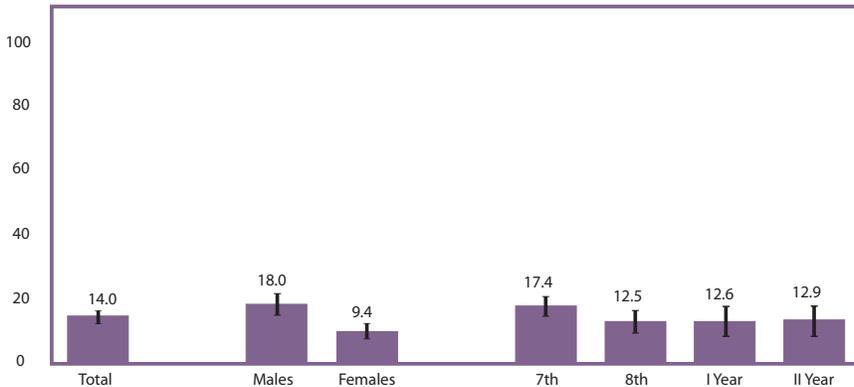
<sup>1</sup>Students who were at or above the 85<sup>th</sup> percentile, but below the 95<sup>th</sup> percentile for body mass index by age and sex based on reference data from Cole, Bellizzi, Flegal, and Dietz, BMJ, May 2000.

<sup>2</sup>Students who were at or above the 95<sup>th</sup> percentile for body mass index by age and sex based on reference data from Cole, Bellizzi, Flegal, and Dietz, BMJ, May 2000.

### Prevalence of overweight

In Macedonia, 14% of students were at risk for becoming overweight (i.e., at or above the 85<sup>th</sup> percentile, but below the 95<sup>th</sup> percentile for body mass index by age and sex) and 1.5% were overweight (i.e., at or above the 95<sup>th</sup> percentile for body mass index by age and sex). Male students (18%) are significantly more likely than female students (9.4%) to be at risk for becoming overweight.

**Graph 1.** Percentage of students who are at risk for becoming overweight



### Prevalence of hunger

Overall, 1.9% of students (1.6% in the age group of 13-15) went hungry most of the time or always because there was not enough food in their home during the past 30 days. Male students (2.8%) were significantly more likely than female students (0.8%) to go hungry most of the time or always because there had not been enough food in their home.

### Fruit and vegetable intake

Overall, 83.7% of students usually ate fruit, such as apple, pear, orange, banana, grape, melon, or watermelon, one or more times per day during the past 30 days. There was no significant difference between male students (84.5%) and female students (82.8%) who ate fruit one or more times per day. Overall, 80.4% of students usually ate vegetables, such as tomato, paprika (pepper), potato, cucumber, or salad, one or more times per day during the past 30 days. There was no significant difference between male students (79.6%) and female students (81.8%) who ate vegetables one or more times per day. Overall, 31.5% of students usually ate fruits and vegetables five or more times per day during the past 30 days. There was no significant difference between male students (31.5%) and female students (31%) who ate fruits and vegetables five or more times per day.

### *Other dietary behaviours*

#### *Fast food and soft drink consumption*

Overall, 25.6% of students ate in a fast food restaurant, such as McDonalds, on three or more days during the past seven days. 50.3% of students usually drank carbonated soft drinks, such as Coke, Fanta or Schweppes two or more times per day during past 30 days.

#### *Healthy nutrition attitudes*

Overall, 77.2% of students most of the time or always have had their breakfast in the past 30 days and 37.1% of the students have stated they were taught about the benefits of healthy eating on classes in the current school year. There was no significant gender difference concerning these questions.

## **HYGIENE**

### *Background*

Dental caries affect between 60-90% of children in developing countries and is the most prevalent oral disease among children in several Asian and Latin American countries. In Africa, the incidence of dental caries is expected to rise drastically in the near future due to increased sugar consumption and inadequate fluoride exposure<sup>17</sup>. In addition to causing pain and discomfort, poor oral health can affect children's ability to communicate and learn. More than 50 million school hours are lost annually because of oral health problems<sup>18</sup>. In both developed and developing countries, many children do not have access to water fluoridation or professional dental care. Daily tooth cleaning or brushing can help prevent some dental disease<sup>19</sup>.

Diarrhoeal diseases kill nearly 2 million children every year. Hygiene education and the promotion of hand-washing can reduce the number of diarrhoeal cases by 45%<sup>20</sup>. About 400 million school-aged children are infected with worms worldwide. These parasites consume nutrients from children they infect, cause abdominal pain and malfunction, and can impair learning by slowing cognitive development<sup>21</sup>.

## Results

The hygiene indicators in the sample are described in the following table.

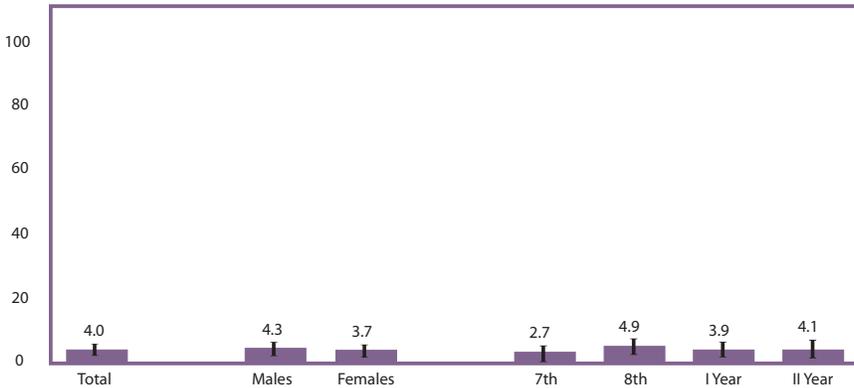
**Table 3.** Hygiene-related behaviours, by sex and age, Macedonia, 2007.

Question	Total % (CI)*	Sex		Age	
		Male % (CI)	Female % (CI)	13-15	16 or older
Did not clean or brush their teeth during the past 30 days	3.7 (2.6 - 4.7)	4.9 (3.1- 6.8)	2.0 (0.9 - 3.1)	2.8 (1.7 - 4.0)	5.4 (3.3 - 7.5)
Never or rarely washed their hands before eating during the past 30 days	2.2 (1.6 - 2.8)	2.1 (1.0- 3.2)	2.3 (1.1 - 3.6)	2.0 (1.2 - 2.8)	2.7 (1.4 - 3.9)
Never or rarely washed their hands after using the toilet or latrine	2.2 (1.5 - 2.9)	2.0 (1.3- 2.8)	2.2 (1.2 - 3.2)	2.2 (1.2 - 3.1)	2.3 ( 1.1 - 3.4)
Never or rarely used soap when washing their hands	4.0 (2.8 - 5.2)	4.3 (2.7- 6.0)	3.7 (2.1 - 5.2)	3.7 (2.5 - 5.0)	4.8 (2.6 - 6.9)

\*95% confidence interval.

### Personal hygiene

In Macedonia, the percentage of students who did not clean or brush their teeth during the past 30 days was 3.7%. Male students (4.9%) did not to clean or brush their teeth significantly more often than female students (2%). Overall, 2.2% of students never or rarely washed their hands before eating during the past 30 days. Male students (2.1%) are less likely than female students (2.3%) to never or rarely wash their hands before eating. Overall, 2.2% of students never or rarely washed their hands after using the toilet or latrine during the past 30 days. Male students (2%) were less likely than female students (2.2%) to never or rarely wash their hands after using the toilet or latrine. Overall, 4% of students never or rarely used soap when washing their hands during the past 30 days. Male students (4.3%) were more likely than female students (3.7%) to never or rarely use soap when washing their hands.

**Graph 2.** Percentage of students who never or rarely used soap when washing their hands

## VIOLENCE AND UNINTENTIONAL INJURY

### Background

Unintentional injuries are a major cause of death and disability among young children<sup>22</sup>. Each year about 875,000 children under the age of 18 die from injuries worldwide and 10 to 30 million have their lives affected by injury. Injuries are highly associated with age and gender. Males aged 10 to 14 years have a death rate from injury that is 60% higher than for females. Teenagers aged 15 to 19 years have higher rates of fatal injury than those aged 10 to 14 years (64% deaths vs 29% per 100,000).

The global estimate of death rates from homicide for males aged 15 to 17 years is 9 per 100,000<sup>23</sup>. For every youth homicide, approximately 20 to 40 victims of non-fatal youth violence receive hospital treatment<sup>24</sup>. Many unintentional injuries lead to permanent disability and brain damage, depression, substance abuse, suicide attempts and risky health behaviours.

Even victims of bullying experience increased stress and a reduced ability to concentrate, and are at increased risk for substance abuse, aggressive behaviours and suicide attempts<sup>25</sup>.

### Results

The results of the survey responses on violence and unintentional injury are presented in the following table.

**Table 4.** Violence and unintentional injury among students, by sex and age, Macedonia, 2007

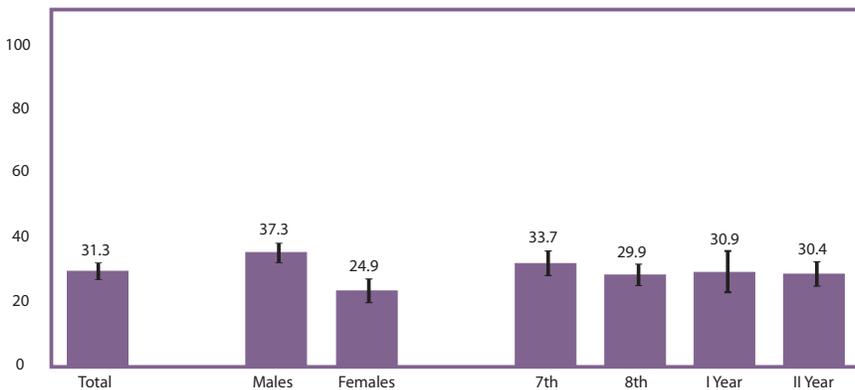
Question	Total % (CI)*	Sex		Age	
		Male % (CI)	Female % (CI)	13-15	16 or older
Percentage of students who were physically attacked one or more times during the past 12 months	18.7 (14.8-22.6)	24.4 (19.0-29.8)	12.4 (9.8-15.0)	19.5 (15.0 - 24.1)	18.6 (14.0 - 23.2)
From students who had a boyfriend or a girlfriend, the percentage of those whose boyfriend or girlfriend ever hit, slap, or physically hurt them on purpose during the past 12 months	8.4 (6.2-10.6)	9.7 (6.8-12.6)	6.4 (4.4-8.3)	7.8 (5.1 - 10.6)	9.3 (5.8 - 12.8)
Percentage of students who were in a physical fight one or more times during the past 12 months	30.5 (27.4 - 33.7)	41.1 (37.5- 44.8)	18.7 (14.5 - 22.9)	30.1 (26.5 - 33.7)	34.4 (29.7 - 39.0)
Percentage of students who were seriously injured one or more times during the past 12 months	31.3 (28.9 - 33.7)	37.3 (34.6- 39.9)	24.9 (21.4 - 28.4)	31.3 (28.6 - 34.0)	31.3 (27.9 - 34.7)
From students who were seriously injured during the past 12 months, the percentage of those whose most serious injury happened while they were playing or training for a sport	26.4 (21.6 - 31.1)	31.4 (26.2- 36.6)	18.9 (12.1 - 25.8)	27.8 (22.2 - 33.4)	19.8 (9.1 - 30.5)
From students who were seriously injured during the past 12 months, the percentage of those whose most serious injury was the result of a fall	32.5 (26.7 - 38.4)	31.6 (25.9- 37.4)	34.6 (23.1 - 46.1)	35.9 (28.8 - 43.0)	21.4 (14.9 - 27.9)
From students who were seriously injured during the past 12 months, the percentage of those whose most serious injury was the result of self-hurting by accident	31.6 (26.8 - 36.3)	31.4 (23.8- 39.0)	32.7 (26.9 - 38.4)	32.6 (26.9 - 38.4)	29.8 (20.8 - 38.8)
From students who were seriously injured during the past 12 months, the percentage of those who had a broken bone or a dislocated joint as their most serious injury	28.2 (22.8 - 33.6)	28.8 (22.1- 35.6)	27.3 (21.5 - 33.1)	28.8 (23.6 - 34.1)	26.6 (16.9 - 36.4)
Percentage of students who were bullied on one or more days during the past 30 days	10.0 (8.3 - 11.7)	10.2 (7.7- 12.8)	9.8 (7.5 - 12.2)	10.1 (8.2 - 12.0)	10.6 (8.6 - 12.6)
From students who were bullied during the past 30 days, the percentage of those who were bullied most often by being hit, kicked, pushed, shoved around, or locked indoors	16.9 (10.6 - 23.2)	-	-	18.5 (11.2 - 25.7)	-
Percentage of students who carried a weapon, such as a gun, knife, or club on one or more days during the past 30 days	5.1 (3.7 - 6.5)	8.5 (6.3- 10.7)	1.3 (0.3 - 2.3)	4.6 (3.0 - 6.3)	6.9 (4.8 - 8.9)
Percentage of students who had been physically forced to have sexual intercourse when they did not want to	5.3 (4.4 - 6.2)	5.8 (3.9- 7.8)	4.6 (3.3 - 5.9)	4.9 (3.8 - 6.0)	6.1 (4.1 - 8.0)
From students who rode in a motor vehicle driven by someone else, the percentage of those who never or rarely used a seat belt during the past 30 days	39.9 (36.2 - 43.5)	41.6 (36.8- 46.4)	38.0 (33.9 - 42.1)	38.8 (34.3 - 43.3)	45.9 (41.8 - 49.9)
Percentage of students who rode in a car or other motor vehicle driven by someone who had been drinking alcohol one or more times during the past 30 days	19.3 (16.6 - 22.0)	22.4 (19.0- 25.7)	16.5 (13.4 - 19.6)	18.3 (15.6 - 21.0)	24.6 (20.9 - 28.2)

\*95% confidence interval.

## Serious Injuries

In Macedonia, 18.7% of students were physically attacked one or more times during the past 12 months. Male students (24.4%) were physically attacked significantly more often than female students (12.4%) one or more times during the past 12 months. Among students who were going out with boyfriend/girlfriend, 8.4% had been physically hurt in some manner by their partner in the past 12 months; male students (9.7%) reported to be hurt significantly more often than female students (6.4%). 30.5% of students had a physical fight one or more times during the past 12 months. Male students (41.1%) were involved in a physical fight significantly more often than female students (18.7%). Overall, 31.3% of students said they had been seriously injured one or more times during the past 12 months. Male students (37.3%) were significantly more often seriously injured than female students (24.9%). Among students who were seriously injured during the past 12 months, 26.4% were playing or training for a sport when their most serious injury happened to them; 32.5% had their most serious injury caused by fall; 31.6% had their most serious injury as a result of hurting themselves by accident and 28.2% experienced a broken bone or dislocated joint as their most serious injury. Male students (31.4%) were more significantly seriously injured while playing or training sport than female students (18.9%). There were no significant gender differences concerning other causes.

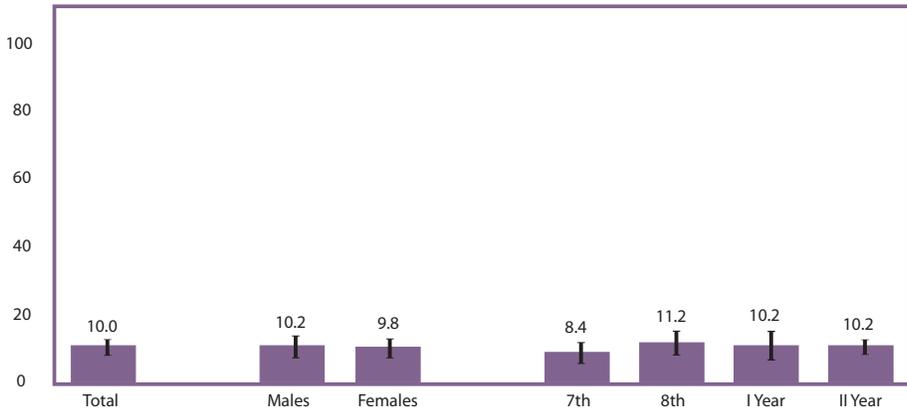
**Graph 3.** Percentage of students who were seriously injured one or more times during the past 12 months



## Bullying

Overall, 10.0% of students were bullied on one and more days during the past 30 days. The share was the same for male and female students. Among those bullied during the past 30 days, 16.9% most often experienced being hit, kicked, pushed, shoved around, or locked indoors. 18.5% of students at age 13 to 15 experienced these types of bullying.

**Graph 4.** Percentage of students who were bullied on one or more days during the past 30 days



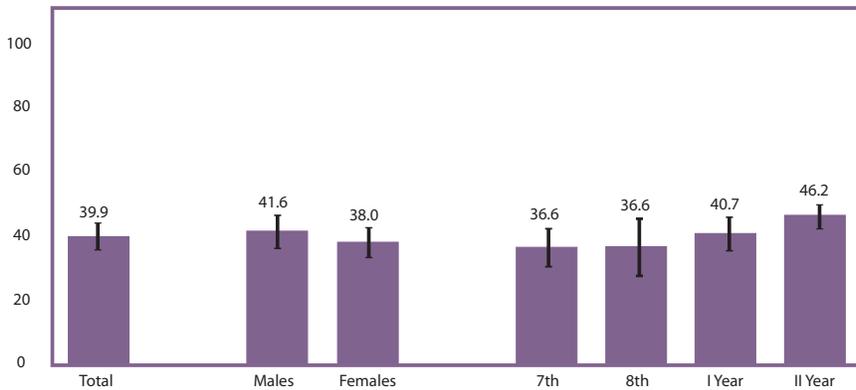
### *Violence*

5.1% of all students reported to have carried some kind of weapon at school in the past 30 days. Males (8.5%) carried weapons significantly more often compared to girls (1.3%). Overall, 5.3% of students reported they had been forced to have a sexual intercourse, even they did not want it. There was no significant difference between boys and girls (5.8% boys and 4.6% girls).

### *Traffic safety*

Overall, 39.9% of all students have never or have rarely used seat belt in the past 30 days when they were riding in the car driven by somebody else. Male students (41.6%) did not use seat belt significantly more often than female students (38.0%) in the past 30 days when they were riding in the car driven by somebody else. 19.3% of all students were riding in a car driven by somebody else who had been drinking alcohol in the past 30 days. Males (22.4%) were significantly more likely to find themselves in such situation as compared to females (16.5%).

**Graph 5.** The percentage of students who rode in a motor vehicle driven by someone else and who never or rarely used a seat belt during the past 30 days



## MENTAL HEALTH

### Background

Worldwide, approximately 20% of children and adolescents suffer from a disabling mental illness<sup>26</sup>. Anxiety disorders, depression and other mood disorders, and behavioural and cognitive disorders are among the most common mental health problems among adolescents. Half of all lifetime cases of mental disorders start by the age of 14<sup>27</sup>.

Every country and culture has children and adolescents struggling with mental health problems. Most of these young people suffer needlessly, unable to access appropriate resources for recognition, support, and treatment. Being ignored, these young people are at a high risk for abuse and neglect, suicide, alcohol and other drug use, school failure, violent and criminal activities, mental illness in adulthood, and health-jeopardizing impulsive behaviours. Each year, about 4 million adolescents worldwide attempt suicide. Suicide is the third leading cause of death among adolescents<sup>28,29</sup>.

### Results

The mental health indicators in the sample are described in the following table.

**Table 5:** Mental health issues among students, by sex and age, Macedonia, 2007

Question	Total % (CI)*	Sex		Age	
		Male % (CI)	Female % (CI)	13-15	16 or older
Percentage of students who felt lonely most of the time or always during the past 12 months	6.4 (5.5 - 7.3)	4.2 (3.0 - 5.4)	9.0 (7.3 - 10.7)	6.2 (4.8 - 7.5)	8.3 (6.2 - 10.5)
Percentage of students who most of the time or always felt so worried about something that they could not sleep at night during the past 12 months	6.8 (5.8 - 7.8)	3.8 (2.8 - 4.8)	9.8 (8.3 - 11.3)	6.6 (5.4 - 7.8)	8.4 (5.1 - 11.7)
Percentage of students who seriously considered attempting suicide during the past 12 months	8.6 (7.5 - 9.7)	6.8 (5.5 - 8.2)	10.5 (8.7 - 12.2)	7.9 (6.5 - 9.4)	11.8 (8.5 - 15.1)
Percentage of students who made a plan about how they would attempt suicide during the past 12 months	5.7 (4.7 - 6.6)	4.8 (3.6 - 6.0)	6.6 (5.3 - 8.0)	4.7 (3.4 - 5.9)	9.3 (6.2 - 12.3)
Percentage of students who had no close friends	2.7 (1.8 - 3.6)	2.5 (1.4 - 3.5)	2.8 (1.6 - 4.0)	2.3 (1.2 - 3.5)	3.7 (2.2 - 5.2)
Percentage of students who were taught in any of their classes during this school year how to handle stress in healthy ways	15.5 (12.3 - 18.6)	14.5 (10.9 - 18.1)	16.2 (12.3 - 20.2)	17.1 (13.3 - 21.0)	11.1 (5.2 - 17.1)

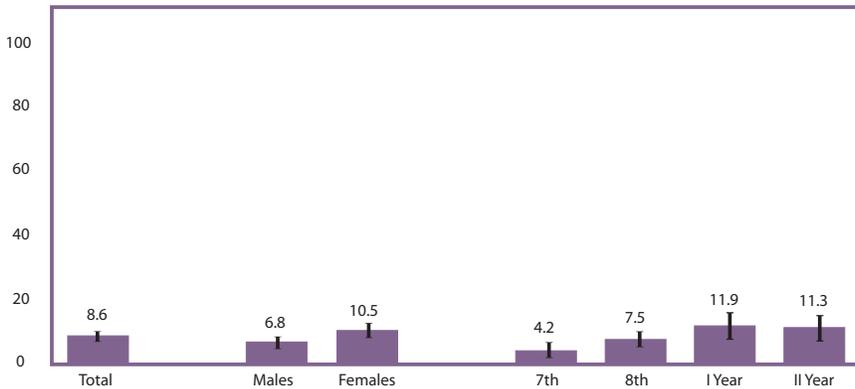
\*95% confidence interval.

### *Loneliness/depression*

In Macedonia, 6.4% of students most of their time or always felt lonely during the past 12 months. Male students (4.2%) felt lonely significantly less than female students (9.0%) most of their time or always. Overall, 6.8% of students most of the time or always felt so worried about something that they could not sleep at night during the past 12 months. Male students (3.8%) significantly less than female students (9.8%) felt most of the time or always so worried about something they could not sleep at night.

### *Suicidal behaviour*

Overall, 8.6% of students seriously considered attempting suicide during the past 12 months. Male students (6.8%) seriously considered attempting suicide significantly less than female students (10.5%). Overall, 5.7% of students made a plan about how they would attempt suicide during the past 12 months. A significantly smaller number of male students (4.8%) made a plan how they would attempt suicide than female students (6.6%). Overall, 2.7% of students had no close friends and 15.5% were taught in any of their classes during this school year how to handle stress in healthy ways. There was no significant difference between male and female students in response to these questions.

**Graph 6.** Percentage of students who seriously considered attempting suicide during the past 12 months.

## **TOBACCO USE**

### *Background*

About 1.1 billion people worldwide smoke and the number of smokers continue to increase. Among these, about 84% live in developing and transitional economy countries. Currently 5 million people die each year from tobacco consumption, the second leading cause of death worldwide. If present consumption patterns continue, it is estimated that deaths from tobacco consumption will be 10 million people per year by 2020<sup>30</sup>. The overwhelming majority of smokers begin tobacco use before they reach adulthood. Among those young people who smoke, nearly one-quarter smoked their first cigarette before they reached the age of ten.

Smokers have markedly increased risks of multiple cancers, particularly lung cancer, and are at far greater risk of heart disease, strokes, emphysema and many other fatal and non-fatal diseases. If they chew tobacco, they risk cancer of the lip, tongue and mouth. Children are at particular risk from adults' smoking. Adverse health effects include pneumonia and bronchitis, coughing and wheezing, worsening of asthma, middle ear disease, and possibly neurobehavioral impairment and cardiovascular disease in adulthood. Many studies show that parental smoking is associated with higher youth smoking<sup>31</sup>.

### *Results*

The indicators about tobacco use in the sample are described in the following table.

**Table 6.** Tobacco use among students, by sex and age, Macedonia, 2007

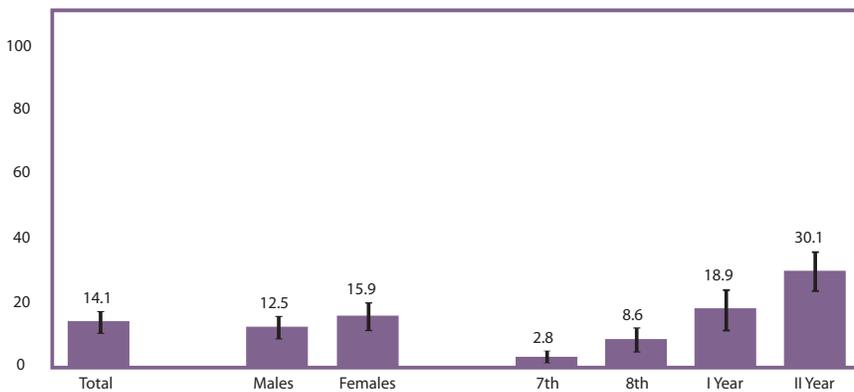
Question	Total % (CI)*	Sex		Age	
		Male % (CI)	Female % (CI)	13-15	16 or older
Of students who smoked cigarettes on one or more of the past 30 days, the percentage who tried their first cigarette at age 13 or younger	50.6 (43.5 - 57.7)	55.8 (45.5- 66.2)	45.8 (37.7 - 53.9)	58.8 (52.4 - 65.3)	38.4 (26.4 - 50.4)
Percentage of students who smoked cigarettes on one or more days during the past 30 days	14.1 (11.1 - 17.2)	12.5 (9.3- 15.7)	15.9 (11.9 - 19.8)	10.5 (8.2 - 12.9)	30.0 (24.2 - 35.8)
From students who tried to buy cigarettes during the past 30 days, the percentage of those who had someone refuse to sell them cigarettes because of their age	17.4 (12.5 - 22.4)	19.4 (12.3- 26.5)	14.2 (7.6 - 20.8)	19.7 (13.1 - 26.3)	12.9 (7.4 - 18.5)
From students who smoked cigarettes during the past 12 months, the percentage of those who tried to stop smoking cigarettes	59.4 (51.9 - 66.8)	53.3 (42.1- 64.5)	65.0 (56.7 - 73.3)	57.7 (48.7 - 66.7)	62.2 (53.6 - 70.7)
Percentage of students who probably or definitely would smoke if one of their best friends offered them a cigarette	17.6 (13.6 - 21.6)	15.8 (11.8- 19.8)	19.8 (14.8 - 24.8)	14.5 (10.3 - 18.6)	32.7 (27.0 - 38.4)
Percentage of students who reported people smoking in their presence on one or more days during the past 7 days	71.2 (67.2 - 75.2)	68.9 (63.9- 73.9)	74.1 (69.6 - 78.6)	68.6 (65.2 - 72.0)	82.9 (75.1 - 90.8)
Percentage of students who have a parent or guardian who uses any form of tobacco	45.9 (42.4 - 49.4)	43.1 (39.0- 47.2)	49.2 (44.9 - 53.5)	44.6 (40.1 - 49.0)	51.0 (45.1 - 56.9)
Percentage of students who are in favour of banning smoking in public places	83.3 (80.7 - 85.9)	82.1 (79.6- 84.7)	84.4 (81.1 - 87.7)	84.5 (81.5 - 87.6)	78.0 (74.3 - 81.6)

\*95% confidence interval

### Prevalence of tobacco use

50.6% of students in the Republic of Macedonia who smoked cigarettes on one or more days during the past 30 days had tried their first cigarette at the age of 13 or younger. Male students (55.8%) had had their first cigarette at the age of 13 or younger more often than female students (45.8%) Overall, 14.1% of students smoked cigarettes on one or more days during the past 30 days. Male students (12.5%) smoked cigarettes significantly less than female students (15.9%) on one or more days during the past 30 days. 10.5% of students aged 13-15 years smoked cigarettes on one or more days during the past 30 days. Female students (12.3%) smoked cigarettes significantly more often than male students (8.8%) on one or more days during the past 30 days. Among students who smoked cigarettes during the past 12 months, 59.4% tried to stop smoking cigarettes. A significantly smaller number of male students (53.3%) than female students (65.0%) tried to stop smoking cigarettes.

**Graph 7.** Percentage of students who smoked cigarettes on one or more days during the past 30 days



### Parents or guardian tobacco use

Overall, 71.2% of students reported that people smoked in their presence on one or more days during the past seven days. A significantly smaller number of male students (68.9%) than female students (74.1%) reported that people had smoked in their presence on one or more days. Overall, 68.6% of students aged 13-15 years reported that people had smoked in their presence on one or more days during the past seven days. Smaller number of male students (66.1%) than female students (71.7%) reported that people had smoked in their presence on one or more days.

Overall, 45.9% of students had a parent or guardian who used any form of tobacco. A significantly smaller number of male students (43.1%) than female students (49.2%) reported to have a parent or guardian who used any form of tobacco. Overall, 83.3% of students were in favour of banning smoking in public places. The share was similar in male and female students.

### *Other tobacco use results*

Overall, 17.4% of students who tried to buy cigarettes during the past 30 days were refused to get cigarettes because of their age. Male students (19.4%) were more likely to be refused than female students (14.2%).

Overall, 17.6% of students would smoke if one of their best friends offered them a cigarette. Male students (15.8%) were significantly less likely than female students (19.8%) to smoke if their best friend offered them one.

## **ALCOHOL AND OTHER DRUG USE**

### *Background*

Worldwide, alcohol use causes 3% of deaths (1.8 million) annually, which is equal to 4% of the global disease burden. Across sub-regions of the world, the proportion of disease burden attributable to alcohol use is greatest in the Americas and Europe ranging from 8% to 18% of total burden for males and 2% to 4% of total burden for females. Besides the direct effects of intoxication and addiction, alcohol use causes about 20% to 30% of each of oesophageal cancer, liver disease, homicide and other intentional injuries, epilepsy, and motor vehicle accidents worldwide<sup>32</sup>, and heavy alcohol use places one at greater risk for cardiovascular disease<sup>33</sup>.

In most countries, alcohol-related mortality is highest among 45 to 54-year-olds, but the relationship between the age of initiation of alcohol use and the pattern of its use and abuse in adulthood makes the study of alcohol consumption among adolescents important<sup>34</sup>.

Intentional and unintentional injuries are far more common among youth and young adults. Unintentional injuries are the leading cause of death among 15- to 25-year-olds and many of these injuries are related to alcohol use<sup>35</sup>.

Young people who drink are more likely to use tobacco and other drugs and engage in risky sexual behaviour than those who do not drink<sup>36,37</sup>. Problems with alcohol can impair adolescents' psychological development and influence on both the school environment and leisure time negatively<sup>38</sup>.

### *Results*

The alcohol and drug use characteristics of the sample are described in the following table.

**Table 7.** Alcohol use and other drug use among students, by sex and age, Macedonia, 2007.

Question	Total % (CI)*	Sex		Age	
		Male % (CI)	Female % (CI)	13-15	16 or older
From students who had a drink of alcohol other than a few sips, the percentage of those who had their first drink of alcohol before age of 14 years	61.2 (56.0 - 66.3)	71.2 (64.8- 77.7)	47.1 (40.9 - 53.3)	68.9 (63.6 - 74.3)	38.8 (35.4 - 42.2)
From students who drank alcohol, the percentage of those who were in a bar, pub, or disco the last time they had a drink containing alcohol	47.0 (41.7 - 52.4)	43.0 (36.7- 49.3)	53.1 (47.3 - 58.9)	42.8 (37.5 - 48.1)	62.1 (54.9 - 69.3)
Percentage of students who had at least one drink containing alcohol on one or more days during the past 30 days	39.4 (32.6 - 46.3)	44.2 (35.2- 53.1)	34.6 (27.7 - 41.5)	35.7 (29.3 - 42.2)	58.1 (45.8 - 70.5)
From students who had at least one drink containing alcohol during the past 30 days, the percentage of those who usually drank two or more drinks per day on the days they drank alcohol during the past 30 days	40.9 (36.4 - 45.5)	41.8 (36.7- 47.0)	40.0 (34.2 - 45.9)	35.8 (31.3 - 40.2)	53.5 (47.8 - 59.2)
From students who had at least one drink containing alcohol during the past 30 days, the percentage of those who usually got the alcohol they drank by buying it in a store, shop, or from a street vendor	53.2 (48.0 - 58.4)	58.4 (52.2- 64.7)	45.3 (38.4 - 52.3)	53.6 (46.1 - 61.0)	53.0 (45.8 - 60.1)
Percentage of students who drank so much alcohol that they were really drunk one or more times during their life	25.6 (20.4 - 30.9)	29.7 (23.2- 36.1)	21.6 (16.2 - 27.1)	21.7 (17.3 - 26.2)	45.0 (35.2 - 54.9)
From students who tried to buy alcohol during the past 30 days, the percentage of those who had someone refuse to sell them alcohol because of their age	24.2 (20.1 - 28.2)	26.6 (21.6- 31.6)	21.3 (16.4 - 26.2)	26.6 (21.6 - 31.6)	20.3 (10.8 - 29.9)
Percentage of students who had a hang-over, felt sick, got into trouble with their family or friends, missed school, or got into fights, as a result of drinking alcohol one or more times during their life	20.2 (17.4 - 23.0)	20.7 (16.8- 24.5)	20.0 (16.8 - 23.2)	17.8 (15.8 - 19.8)	32.5 (26.3 - 38.7)
Percentage of students who used drugs, such as marijuana one or more times during their life	3.0 (2.2 - 3.7)	3.9 (2.8- 5.0)	2.0 (1.3 - 2.6)	1.8 (1.0 - 2.5)	7.8 (5.3 - 10.3)
From students who tried drugs such as marijuana, the percentage of those who tried drugs for the first time before age of 14 years	-	-	-	-	-
Percentage of students who had been offered, sold, or given a drug at school during the past 30 days	7.8 (6.3 - 9.3)	9.8 (7.4- 12.1)	5.6 (4.4 - 6.8)	7.0 (5.6 - 8.4)	11.0 (7.0 - 15.0)
Percentage of students who were taught in any of their classes during this school year the dangers of using drugs	46.6 (42.3 - 50.9)	45.3 (39.9- 50.7)	47.8 (43.0 - 52.6)	48.2 (44.5 - 51.9)	41.6 (31.1 - 52.2)
Percentage of students who were taught in any of their classes during this school year where to get help to stop using drugs	26.2 (22.1 - 30.2)	25.0 (20.5- 29.5)	26.9 (22.0 - 31.8)	25.0 (21.5 - 28.4)	28.6 (21.1 - 36.1)

\* 95% confidence interval

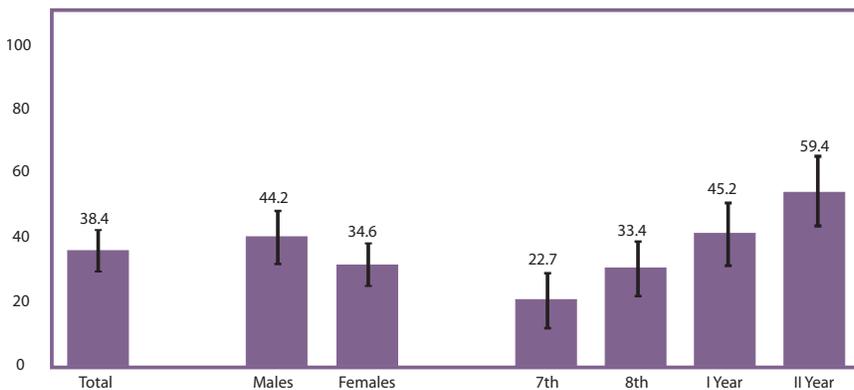
### Prevalence of current alcohol use

In the Republic of Macedonia, the prevalence of current alcohol use among students (i.e., drinking at least one drink containing alcohol on one or more of the past 30 days) is 39.4%. Male students (44.2%) significantly more often than female students (34.6%) reported current alcohol use. 35.7% of students aged 13-15 years had at least one drink containing alcohol on one or more days during the past 30 days. A significantly bigger number of boys (40.8%) than girls (30.6%) drank on one or more days during the past 30 days.

From the students who had a drink of alcohol other than a few sips, 61.2% were younger than 14 years of age when they tried it for the first time. There was a significant difference between males (71.2%) and females (47.1%) concerning their first drink before the age of 14.

From the students who had at least one drink in the past 30 days, 40.9% had two or more drinks. The share of male students (41.8%) and female students (40.0%) who drank two or more drinks per day on the days they drank alcohol during the past 30 days was not significantly different.

**Graph 8.** Percentage of students who had at least one drink containing alcohol on one or more days during the past 30 days



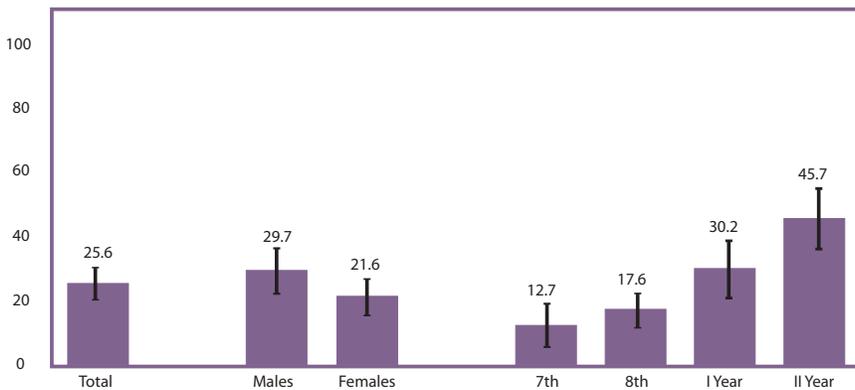
### Access to alcohol products

Overall, 53.2% of students usually got the alcohol they drank by buying it in a store, shop, or from a street vendor during the past 30 days. Male students (58.4%) significantly more often than female students (45.3%) usually got the alcohol they drank by buying it from a store, shop, or from a street vendor. Overall, 47% of students had their last drink in a bar, pub, or disco. A significantly smaller number of males (43.0%) than females (53.1%) had their last drink in a bar, pub, or disco. 24.2% of students were refused to get alcohol because of their age. There was no significant gender difference regarding this question.

### *Drunkenness and consequences of drinking*

Overall, 25.6% of the students drank so much alcohol that they were really drunk one or more times during their life. Male students (29.7%) significantly more often than female students (21.6%) were really drunk one or more times during their life. 21.7% of students aged 13-15 years (25.7% of boys and 17.8% of girls) were really drunk one or more times during their life. 20.2% of students got into trouble with their family or friends, missed school, or got into fights, as a result of drinking alcohol one or more times during their life. The share between male students (20.7%) and female students (20%) was not significantly different. 17.8% of students aged 13-15 years got into trouble as a result of drinking alcohol during their life.

**Graph 9.** Percentage of students who drank so much alcohol that they were really drunk one or more times during their life



### *Prevalence of lifetime drug use*

In the Republic of Macedonia, the prevalence of lifetime drug use (using drugs, such as marijuana, one or more times during their life) is 3.0%. Male students (3.9%) significantly more often than female students (2.0%) reported lifetime drug use. 1.8% of students aged 13-15 years used drugs one or more times during their life. Only 29 students in the sample have reported trying drugs before the age of 14.

### *Drug availability at school*

Overall, 7.8% of students confirmed they were offered, sold, or given a drug at school during the past 30 days. Male students (9.8%) significantly more often than female students (5.6%) were offered, sold, or given a drug at school during the past 30 days.

### *School preventing activities*

Overall, 46.6% of students have reported they were taught in any of their classes during this school year the dangers of using drugs and 26.2% were taught in any of their classes during this school year where to get help to stop using drugs. There was no significant gender difference in the answers of these two questions.

## Mass media

### Results

The mass media indicator in the sample is described in the following table.

**Table 8.** Mass media coverage of risk factors, Macedonia, 2007

Question	Total % (CI)*	Sex		Age	
		Male % (CI)	Female % (CI)	13-15	16 or older
Percentage of students who have seen a lot of advertisements on TV, radio, billboards, posters, or the daily news; in magazines; or at the movies against smoking, drinking alcohol, using drugs, or violence during the past 30 days	38.5 (36.3 - 40.6)	39.2 (36.4- 42.0)	37.3 (34.1 - 40.6)	38.5 (36.1 - 40.9)	39.3 (35.0 - 43.7)

\*95% confidence interval

Overall, 38.5% of students have seen advertisements on TV, radio, billboards, posters, or the daily news, in magazines, or at the movies against smoking, drinking alcohol, using drugs, or violence during the past 30 days. There was no significant gender difference in the answer of this question.

## **SEXUAL BEHAVIOURS THAT CONTRIBUTE TO HIV INFECTION, OTHER STI, AND UNINTENDED PREGNANCY**

### Background

AIDS has killed more than 25 million people since 1981. As of 2005, an estimated 40.3 million people have been living with HIV. In that year alone, roughly 3.1 million people died of HIV and another 4.9 million people became infected with HIV.<sup>39</sup> Young people between the ages of 15 and 24 are the most threatened group, accounting for more than half of those newly infected with HIV. At the end of 2003, an estimated 10 million young people aged 15 to 24 were living with HIV. Studies have shown that adolescents who begin sexual activity early are likely to have sex with more partners and with partners who have been at risk of HIV exposure and are not likely to use condoms. In many countries, HIV infection and AIDS is reducing average life expectancy, threatening food security and nutrition, dissolving households, overloading the health care system, reducing economic growth and development, and reducing school enrolment and the availability of teachers.<sup>40</sup>

STIs are among the most common causes of illness in the world and have far-reaching health consequences. They facilitate the transmission of HIV and, if left untreated, can lead to cervical cancer, pelvic inflammatory diseases,

and ectopic pregnancies.<sup>41</sup> Worldwide, the highest reported rates of STIs are found among people between 15 and 24 years of age; up to 60% of the new infections and half of all people living with HIV globally are in this age group.<sup>42</sup>

## Results

The indicators about sexual behaviour that contribute to HIV infection, other STI and unintended pregnancy in the sample are described in the following table.

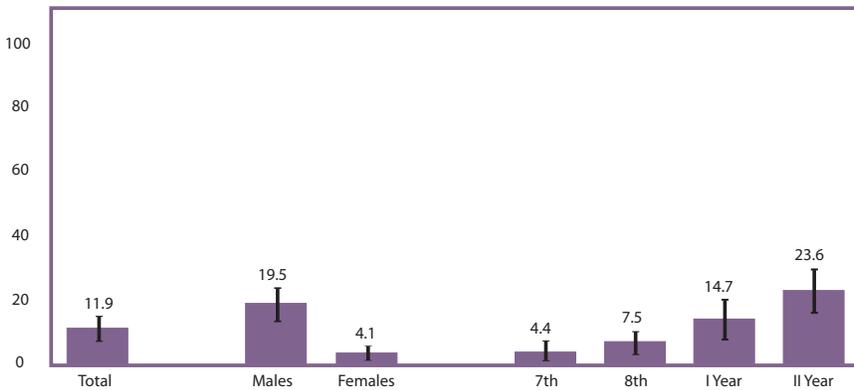
**Table 9.** Sexual behaviours that contribute to HIV infection, other STI, and unintended pregnancy among students, by sex and age, Macedonia, 2007

Question	Total % (CI)*	Sex		Age	
		Male % (CI)	Female % (CI)	13-15	16 or older
Percentage of students who have ever had sexual intercourse	11.9 (8.6 - 15.2)	19.5 (14.5- 24.4)	4.1 (2.1 - 6.1)	8.9 (6.4 - 11.5)	24.1 (16.8 - 31.4)
Percentage of students who had sexual intercourse for the first time before age of 13	4.6 (2.7 - 6.5)	7.5 (4.4- 10.6)	1.3 (0.4 - 2.1)	4.4 (2.2 - 6.6)	5.4 (2.3 - 8.5)
Percentage of students who have had sexual intercourse with two or more people during their life	6.9 (4.9 - 8.9)	11.9 (8.8- 15.0)	1.6 (0.6 - 2.7)	4.6 (3.0 - 6.1)	15.7 (11.0 - 20.3)
Percentage of students who had sexual intercourse during the past 12 months	14.2 (11.4 - 17.1)	20.7 (16.9- 24.6)	7.1 (5.2 - 9.1)	11.5 (9.3 - 13.8)	25.6 (17.8 - 33.4)
From students who had sexual intercourse during the past 12 months, the percentage of those who used a condom the last time they had had sexual intercourse	80.4 (75.6 - 85.3)	78.8 (74.0- 83.6)	-	81.5 (74.1 - 88.9)	-

95% confidence interval

### Sexual intercourse

In the Republic of Macedonia, 11.9% of students have had sexual intercourse during their life. A significantly bigger number of male students (19.5%) than female students (4.1%) have had sexual intercourse. Percentage of students aged 13-15 years who have ever had sexual intercourse is 8.9 (14.4 male, 3.1 female). Overall, 4.6% of students initiated sexual intercourse before the age of 13 years. Male students (7.5%) significantly more often than female students (1.3%) have initiated sexual intercourse before the age of 13 years.

**Graph 10.** Percentage of students who have ever had sexual intercourse

Overall, 6.9% of students had sexual intercourse with multiple partners (i.e., two or more) during their life. Male students (11.9%) significantly more often than female students (1.6%) had multiple partners. 4.6% of students aged 13-15 years had sexual intercourse with more than one person (7.8% male students and 1.1% female students). Overall, 14.2% of students had sexual intercourse during the past 12 months. Male students (20.7%) significantly more often than female students (7.1%) had sexual intercourse during the past 12 months. From students who had sexual intercourse during the past 12 months, 80.4% used a condom during their last sexual intercourse.

## PHYSICAL ACTIVITY

### Background

Practicing adequate physical activity throughout the life span and maintaining normal weight are the most effective ways of preventing many chronic diseases, including cardiovascular diseases and diabetes<sup>43</sup>.

The prevalence of type 2 diabetes is increasing globally and now it occurs during adolescence and childhood<sup>44</sup>. Participating in adequate physical activity also helps to build and maintain healthy bones and muscles, to control weight, reduce blood pressure, ensure a healthy blood profile, reduce fat, and promote psychological well-being<sup>45</sup>.

Roughly 60% of the world's population is estimated not to get enough physical activity. Patterns of physical activity acquired during childhood and adolescence are more likely to be maintained throughout the life span, thus sedentary behaviour adopted at a young age is likely to persist<sup>46</sup>.

There is convincing evidence that regular physical activity is protecting against unhealthy weight gain whereas sedentary lifestyles, particularly sedentary occupations and inactive recreation such as watching television, pro-

mote it. Most epidemiological studies show smaller risk of weight gain, overweight and obesity among persons who currently engage regularly in moderate to large amounts of physical activity<sup>47</sup>.

## Results

The physical activity indicators in the sample are described in the following table.

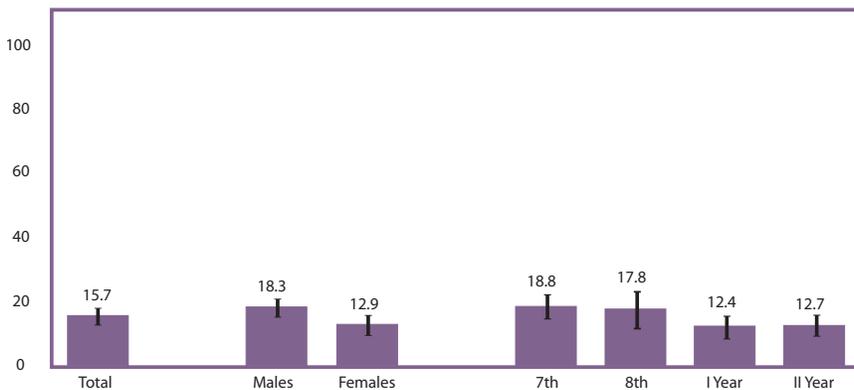
**Table 10 .** Physical activity among students, by sex and age, Macedonia, 2007.

Question	Total % (CI)*	Sex		Age	
		Male % (CI)	Female % (CI)	13-15	16 or older
Physically active all seven days for a total of at least 60 minutes per day during the past seven days	15.7 (13.4 - 17.9)	18.3 (15.9- 20.6)	12.9 (10.3 - 15.4)	16.2 (13.6 - 18.9)	12.1 (9.2 - 14.9)
Physically active seven days for a total of at least 60 minutes per day during a typical or usual week	15.2 (13.3 - 17.0)	17.2 (14.6- 19.9)	13.0 (10.9 - 15.1)	16.1 (13.5 - 18.7)	11.1 (8.9 - 13.3)
Physically active five or fewer days for a total of at least 60 minutes per day during a typical or usual week	76.5 (73.5 - 79.6)	73.9 (70.1- 77.6)	79.4 (76.5 - 82.3)	76.0 (72.7 - 79.4)	81.2 (76.4 - 86.1)
Spent three or more hours per day doing sedentary activities during a typical or usual day	52.2 (47.8 - 56.6)	51.1 (46.6- 55.5)	54.0 (48.3 - 59.8)	49.8 (45.8 - 53.8)	63.3 (53.6 - 73.0)
Did not walk or bicycle to and from school during the past seven days	37.2 (32.9 - 41.6)	38.4 (33.8- 43.1)	35.7 (30.8 - 40.6)	35.3 (31.1 - 39.5)	44.9 (38.1 - 51.8)
Usually took less than 30 minutes to get to and from school each day during the past seven days	76.4 (72.0 - 80.7)	76.6 (70.3- 82.8)	76.2 (72.4 - 79.9)	79.9 (76.2 - 83.6)	60.1 (51.7 - 68.6)
Percentage of students who were taught in any of their classes during this school year the benefits of physical activity	42.5 (38.0 - 47.0)	42.2 (37.4- 47.1)	42.5 (37.1 - 47.9)	44.7 (40.0 - 49.3)	36.6 (28.3 - 44.9)

\*95% confidence interval.

In Macedonia, 15.7% of students were physically active all 7 days during the past 7 days for a total of at least 60 minutes per day. Male students (18.3%) were significantly more physically active than female students (12.9%) during all 7 days for a total of at least 60 minutes per day. 15.2% of students were physically active 7 days during a typical or usual week for a total of at least 60 minutes per day. Male students (17.2%) were significantly more physically active than female students (12%) on 7 days during a typical or usual week for a total of at least 60 minutes per day. 76.5% of students participated in insufficient physical activity (i.e., participated in physical activity for a total of at least 60 minutes per day on five or fewer days on average). Male students (73.9%) significantly less often than female students (79.4%) participated in insufficient physical activity (i.e., participated in physical activity for a total of at least 60 minutes per day on five or fewer days on average).

**Graph 11.** Percentage of students who were physically active for a total of at least 60 minutes per day on all seven days during the past seven days



### *Sedentary behaviour*

Overall, 52.2% of students spent three or more hours per day doing sedentary activities during a typical or usual day. There was no significant gender difference between male students (51.1%) and female students (54%) who spent three or more hours per day doing sedentary activities.

### *Walk or bicycle to and from school*

Overall, 37.2% of students did not walk or bicycle to and from school during the past 7 days. There was only a very small difference between male students (38.4%) and female students (35.7%) who did not walk or bicycle to and from school during the past 7 days. Overall, 76.4% of students usually took less than 30 minutes to get to and from school each day during the past 7 days. There was no significant difference between male students (76.6%) and female students (76.2%) regarding this question.

### *School education for physical activity*

Overall, 42.5% of students have reported they were taught in any of their classes during this school year about the benefits of physical activity. There was no gender difference regarding this question.

## **PROTECTIVE FACTORS**

### *Background*

For most adolescents, school is the most important setting outside of the family. School attendance is related to the prevalence of several health risk behaviours including violence and sexual risk behaviours.<sup>48</sup>

Adolescents who have a positive relationship with teachers, and who have positive attitudes towards school are less likely to initiate sexual activity early, less likely to use substances, and less likely to experience depression. Adolescents who live in a social environment which provides meaningful relationships, encourages self-expression, and also provides structure and boundaries, are less likely to initiate sex at a young age, less likely to experience depression, and less likely to use substances.<sup>49</sup>

Being liked and accepted by peers is crucial to young people's health development, and those who are not socially integrated are far more likely to exhibit difficulties with their physical and emotional health. Isolation from peers in adolescence can lead to feelings of loneliness and psychological symptoms. Interaction with friends tends to improve social skills and strengthen the ability to cope with stressful events.<sup>50</sup>

Parental bonding and connection is associated with lower levels of depression and suicidal ideation, alcohol use, sexual risk behaviours, and violence.<sup>51</sup>

### *Results*

The protective factors in the sample are described in the following table.

**Table 11.** Protective factors among students, by sex and age, Macedonia, 2007.

Question	Total % (CI)*	Sex		Age	
		Male % (CI)	Female % (CI)	13-15	16 or older
Percentage of students who missed classes or school without permission on one or more days during the past 30 days	23.5 (21.5-25.4)	26.7 (24.0-29.4)	20.4 (16.5-24.3)	21.1 (19.1- 23.2)	33.8 (27.9- 39.8)
Percentage of students who reported that most of the students in their school were never or rarely kind and helpful during the past 30 days	37.1 (32.7-41.5)	42.7 (36.6- 48.8)	31.3 (27.8-34.8)	37.2 (32.7- 41.7)	37.3 (31.8- 42.9)
Percentage of students whose parents or guardians never or rarely checked to see if their homework was done during the past 30 days	37.3 (32.9-41.7)	35.5 (30.3- 40.7)	39.2 (34.8-43.7)	34.9 (29.5- 40.2)	48.4 (43.9- 52.9)
Percentage of students whose parents or guardians never or rarely understood their problems and worries during the past 30 days	21.6 (18.4-24.8)	23.1 (18.7- 27.4)	20.1 (17.7-22.5)	20.9 (17.2- 24.5)	26.9 (22.6- 31.3)
Percentage of students whose parents or guardians never or rarely really knew what they were doing with their free time during the past 30 days	19.8 (16.9- 22.7)	24.2 (21.2- 27.1)	15.1 (12.1 - 18.1)	19.8 (16.5- 23.1)	20.3 (15.8- 24.8)

\* 95% confidence interval

### Missing classes

In the Republic of Macedonia 23.5% of students missed classes or school without permission on one or more of the past 30 days. Male students (26.7%) significantly more often than female students (20.4%) missed classes or school without permission. 21.1% of students aged 13-15 years missed classes or school without permission on one or more days during the past 30 days. Male students (24.6%) more often than female students (17.5%) missed classes during the past 30 days.

### *Being kind and helpful*

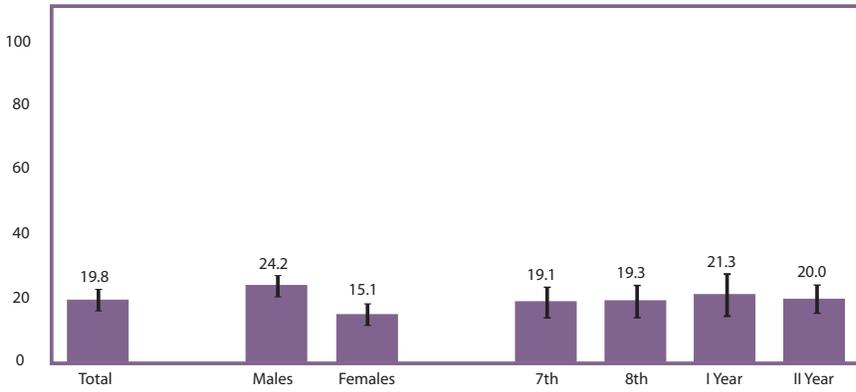
Overall, 37.1% of students reported that most of the students in their school were never or rarely kind and helpful during the past 30 days. Male students (42.7%) significantly more often than female students (31.3%) reported that most of the students in their school had been kind and helpful most of the time or always during the past 30 days. There was a significant gender difference in the answer to this question by students aged 13-15 years. Male students in 43% and female students in 30.9% reported that most of the students in their school were never or rarely kind and helpful during the past 30 days.

### *Parents or guardians*

Overall, 21.6% of students reported that their parents or guardians never or rarely understood their problems and worries during the past 30 days and 37.3% of students reported their parents or guardians never or rarely checked to see if their homework was done during the past 30 days. There was no significant difference between male and female students concerning these two questions.

Overall, 19.8% of students reported their parents or guardians never or rarely knew what they were doing with their free time most of the time or always during the past 30 days. Male students (24.2%) significantly more often than female students (15.1%) reported that their parents or guardians really knew what they had been doing with their free time most of the time or always.

**Graph 12.** Percentage of students whose parents or guardians never or rarely really knew what they were doing with their free time during the past 30 days







## Part 3: Conclusions and Recommendations

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### CONCLUSIONS

The GSHS survey showed that students in Macedonia face a number of health problems related to behaviours, e.g. dietary behaviour, tobacco use, use of alcohol, sexual behaviour, violence and injury risk behaviour. The survey also showed that such behaviours are not simply the actions of individuals but take place in a social context, e.g. education about prevention in school. The survey highlighted health issues that were known but insufficiently regarded, and it also brought other problems to light. For example, mental health problems have been acknowledged as an issue for adolescents in Macedonia, but the survey has indicated that more attention, more prevention and more support efforts are urgently required in this area.

The main conclusions from the Global School-based Student Health Survey in the Republic of Macedonia in 2007/2008 can be summarized:

Adolescence is a period of rapid physical growth calling for adequate nutrition intake to meet growth requirements and a period of emotional and psychological change, during which there is a tendency to reject conventional dietary habits. There is an increasing tendency among adolescents to eat in fast food restaurants three or more days a week, and drink carbonated soft drinks which inhibit calcium absorption. The current percentage of overweight among students demonstrates the increasing risk, particularly in males. Boys were not aware about the problem of overweight or the risk of becoming overweight as females were. Certain percentage of students experience hunger, which has reflected the low socio-economic status of their families. 80% - 84% of students ate fruits and vegetables regularly, which is a protective factor.

Results have indicated that there is still a need to focus on personal hygiene due to its important role in controlling health-related problems, such as parasitic and faecal-oral infections. Female students were taking better care about themselves than males, despite the overall good health practices regarding personal hygiene, such as brushing or cleaning teeth and using soap when washing their hands. Male students were taking care about themselves better than females regarding personal hygiene, such as washing hands before eating and after using the toilet or latrines.

The survey drew further attention to the issue of violence against children and adolescents, indicating an increasing abuse and bullying by other students or student partners especially among males. High level of serious injuries has been reported in performing different activities and in various conditions. Students have shown low tendency in carrying weapons, with higher percentage in male students. Another segment worth attention is the issue of traffic-related risk behaviour, in particular riding in a car without seat-belt on, or riding in a car driven by a person who is under the influence of alcohol.

The survey has acknowledged the mental health problems in adolescent issues, with loneliness and anxiety as dominant ones. There is an increasing suicidal tendency among the youth.

Tobacco prevalence has increased, with 10,5% of students aged 13-15 years who smoked cigarettes on one or more days during the past 30 days, which is higher than 8.2% of the students who confirmed smoking cigarettes in a GYTS survey conducted in 2002. Half of the students who smoked cigarettes had tried their first cigarette at the age of 13 or younger compared to GYTS which showed that 20% of students had started to smoke at the age of 10. Every second questioned student has a smoking parent or guardian, and a large number of persons smoke in front of them. Cigarettes are easily available for students in shops, and many would smoke if offered by a friend.

Special attention should be given to the fact that 61.2% were younger than 14 years of age when they had tried alcohol for the first time. Children are able to buy alcohol in stores, shops and from street vendors, as well as to consume it in bars, pubs or discos. Many have reported to have been drunk one or more times and due to drunkenness have got into trouble. The prevalence of lifetime drug use such as marijuana, is 3.0%. There is relative availability of drug substances at the students' schools, even though there is a relatively high level of education on drug abuse.

Many students had their first sexual intercourse at a young age. Although percentage of students aged 13-15 years who have ever had sexual intercourse is relatively low (slightly higher in males than in females), attention needs to be drawn. Male students have had sexual intercourses with two or more sexual partners more frequently than females. A relatively large number of students have been using condoms during sexual intercourse.

Majority of students have seen advertisements on TV, radio, billboards, posters, or in daily news, in magazines, or at the movies against smoking, drinking alcohol, using drugs, or violence during the past 30 days.

Most of the students of both sexes were physically inactive and involved irregularly in physical activities. They have sedentary life and practicing sitting activities such as computer games since computers are available at home and at school. There is need to activate and increase physical activity sessions in schools.

Students tend to miss classes without permission and tend to be unkind and unhelpful to their fellow students. Parents do not spend a lot of their time with their children and they do not follow their work or deal with their problems. There is a relatively large number of students whose parents or guardians never or rarely really knew what they were doing with their free time.

## RECOMMENDATIONS

According to the findings of this survey it is necessary to pay special attention to the direction of the programmes for health promotion and health prevention. A lot has to be done on improvement of the information and improvement of the healthy lifestyle based on behavioural change. First of all, adolescents-health improvement goals and joint actions have to be developed and promoted by health facilities, families, schools, community institutions.

The most important is the coordinating role and activities which have to be done by the Ministry of Health and Republic Institute for Health Protection in the Republic of Macedonia – strategic planning, implementation of training programmes, monitoring and evaluating the adolescent and youth health.

Development, endorsement and implementation of the National Adolescent Health Strategy 2008-2015 is of utmost importance. The strategy aims to improve and promote health and development of adolescents, addressing the following key priority areas: strengthening data collection system on adolescent health, reduction of mortality, morbidity and disability rates by addressing their underlying causes, promotion of healthy lifestyles among adolescents, improving the capacities of the Ministry of Health, the Republic Institute for Health Protection and other relevant institutions in coordination and management of adolescent health programs.

Following the endorsement of the National Adolescent Health Strategy, the Ministry of Health and the Republic Institute for Health Protection will require a package of capacity building programs in terms of adolescent health planning, budgeting and programming. Initial step forward would be to establish strategic partnership and exchange of experience and practice in this area, with relevant health ministries and public health institutions from countries in the EU that have more advanced adolescent health programs. Successive steps in building capacities comprise:

- To improve the overall health surveillance system in the country to provide data on adolescent health and lifestyle and to serve as a monitoring instrument to measure impact and effectiveness in implementation of the National Adolescent Health Strategy;
- To build capacity of the Republic Institute for Health Protection and the regional institutes for health protection to monitor priority health-risk behaviours among adolescents in the country by conducting regular health surveys, every third year;
- To identify more precisely the geographical areas and sub-groups of adolescents where particular public health problems occur and to influence development of appropriate health interventions where needed;
- To disseminate timely information among public health professionals about existing and burdening public health problems related to adolescents;
- To increase public financing of healthy lifestyle programmes for adolescents;
- To increase the human capacity for design and implementation of training programmes;
- To establish Youth Friendly Services under the umbrella of the National Adolescent Health Strategy.

Additionally, data generated through the surveys will support the regional institutes for health protection and local health authorities to implement new competencies within the decentralization process in relation to planning and implementation of regional and local health programmes targeting adolescents.

It is necessary to monitor student health behaviours regularly, based on established indicators, in order to assess both the current state of student health and trends in student health and to serve as a basis for shaping the healthy lifestyle programmes.

Adolescent Health Strategy and healthy lifestyle programmes in Macedonia will promote healthy behaviours changing the existing high risk behaviours of adolescents, protecting the health of individuals, groups and wider society. The programmes should pay attention to the special capacities of schools and teachers to influence the health status of children and adolescents, applying integrated approach: school, teachers, students, families.

There is a need to expand school health educational programmes to broaden the knowledge of students about food, nutrition, hygiene, violence and unintentional injury, mental health, tobacco use, alcohol and other drug use, sexual behaviours that contribute to HIV infection, other STIs and unintended pregnancy, physical activity and protective factors, changing their risk behaviours.

It is also necessary to develop guidelines about healthy lifestyle and conduct skill-based training workshops to raise level of knowledge of students, teachers, and custodians, to improve their healthy practices, and to protect themselves and the others from relevant health problems.

There is a need of different types of information materials to be prepared for students and for parents. Awareness, information and education for students can be effectively expressed through creative forms. There is also an opportunity for the effective practice of "peer-to-peer" counselling where students with the right combination of characteristics and experience are trained to serve as a resource for other students.

It is important to take advantage of the influential role of mass media, especially television and radio, in forming adolescent awareness of health issues, both in creation and promotion of programmes that address the mental and physical health issues that students face and experience.

Finally, in order to achieve the strategic goal of promoting and supporting healthy behaviours among adolescents in Macedonia, special attention should be given to development and implementation of the strategic interaction among education, health, family and community systems.





## Part 4 : Appendices

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### Appendix 1.

#### 2007/2008 GSHS MACEDONIA QUESTIONNAIRE

##### 2007/2008 Macedonia Global school-based student health survey

This survey is about your health and the things you do that may affect your health. Students like you all over your country are doing this survey. Students in many other countries around the world also are doing this survey. The information you give will be used to develop better health programs for young people like yourself.

DO NOT write your name on this survey or the answer sheet. The answers you give will be kept private. No one will know how you answer. Answer the questions based on what you really know or do. There are no right or wrong answers.

Completing the survey is voluntary. Your grade or mark in this class will not be affected whether or not you answer the questions. If you do not want to answer a question, just leave it blank.

Make sure to read every question. Fill in the circles on your answer sheet that match your answer. Use only the pencil you are given. When you are done, do what the person who is giving you the survey says to do.

Here is an example of how to fill in the circles:

Fill in the circles like this  Not like this  or 

Survey

1. Do fish live in water?
  - a. Yes
  - b. No

Answer sheet

1.  A  B  C  D  E  F  G  H

Thank you very much for your help.

1. How old are you?

- A. 11 years old or younger
- B. 12 years old
- C. 13 years old
- D. 14 years old
- E. 15 years old
- F. 16 years old
- G. 17 years old or older

2. What is your gender?

- A. Male
- B. Female

3. In what grade are you?

- A. 7<sup>th</sup> grade (elementary school)
- B. 8<sup>th</sup> grade (elementary school)
- C. I year – (secondary school)
- D. II year – (secondary school)

**The next 4 questions ask about your height, weight, going hungry, and eating breakfast.**

4. How tall are you without your shoes on? ON THE ANSWER SHEET, WRITE YOUR HEIGHT IN THE SHADED BOXES AT THE TOP OF THE GRID. THEN FILL IN THE OVAL BELOW EACH NUMBER.

**Example**  
Height (cm)

<b>1</b>	<b>5</b>	<b>3</b>
○ 0	○ 0	○ 0
●	○ 1	○ 1
○ 2	○ 2	○ 2
	○ 3	●
	○ 4	○ 4
	●	○ 5
	○ 6	○ 6
	○ 7	○ 7
	○ 8	○ 8
	○ 9	○ 9
○ 9	I do not know	I do not know

5. How much do you weigh without your shoes on? ON THE ANSWER SHEET, WRITE YOUR WEIGHT IN THE SHADED BOXES AT THE TOP OF THE GRID. THEN FILL IN THE OVAL BELOW EACH NUMBER.

**Example**  
Weight (cm)

0	5	2
●	○	○
○	○	○
○	○	●
	○	○
	○	○
	●	○
	○	○
	○	○
	○	○
	○	○
○	I do not know	I do not know

6. During the past 30 days, how often did you go hungry because there was not enough food in your home?
- Never
  - Rarely
  - Sometimes
  - Most of the time
  - Always
7. During the past 30 days, how often did you eat breakfast?
- Never
  - Rarely
  - Sometimes
  - Most of the time
  - Always

**The next 5 questions ask about foods you might eat, drinks you might consume, and what you were taught about healthy eating.**

8. During the past 30 days, how many times per day did you usually eat fruit, such as apple, pear, orange, banana, grape, melon, water melon?
- I did not eat fruit during the past 30 days
  - Less than one time per day
  - 1 time per day
  - 2 times per day
  - 3 times per day
  - 4 times per day
  - 5 or more times per day

9. During the past 30 days, how many times per day did you usually eat vegetables, such as tomato, paprika (pepper), potato, cucumber, salad?
- A. I did not eat vegetables during the past 30 days
  - B. Less than one time per day
  - C. 1 time per day
  - D. 2 times per day
  - E. 3 times per day
  - F. 4 times per day
  - G. 5 or more times per day
10. During the past 30 days, how many times per day did you usually drink carbonated soft drinks, such as Coke, Fanta, or Schweppes?
- A. I did not drink carbonated soft drinks during the past 30 days
  - B. Less than one time per day
  - C. 1 time per day
  - D. 2 times per day
  - E. 3 times per day
  - F. 4 times per day
  - G. 5 or more times per day
11. During the past 7 days, on how many days did you eat at a fast food restaurant, such as McDonalds?
- A. 0 days
  - B. 1 day
  - C. 2 days
  - D. 3 days
  - E. 4 days
  - F. 5 days
  - G. 6 days
  - H. 7 days
12. During this school year, were you taught in any of your classes the benefits of healthy eating?
- A. Yes
  - B. No
  - C. I do not know

**The next 4 questions ask about personal health activities.**

13. During the past 30 days, how many times per day did you usually clean or brush your teeth?
- A. I did not clean or brush my teeth during the past 30 days
  - B. Less than 1 time per day
  - C. 1 time per day
  - D. 2 times per day
  - E. 3 times per day
  - F. 4 or more times per day

14. During the past 30 days, how often did you wash your hands before eating?

- A. Never
- B. Rarely
- C. Sometimes
- D. Most of the time
- E. Always

15. During the past 30 days, how often did you wash your hands after using the toilet?

- A. Never
- B. Rarely
- C. Sometimes
- D. Most of the time
- E. Always

16. During the past 30 days, how often did you use soap when washing your hands?

- A. Never
- B. Rarely
- C. Sometimes
- D. Most of the time
- E. Always

**The next 2 questions ask about physical attacks. A physical attack occurs when one or more people hit or strike someone, or when one or more people hurt another person with a weapon (such as a stick, knife, or gun). It is not a physical attack when two students of about the same strength choose to fight each other.**

17. During the past 12 months, how many times were you physically attacked?

- A. 0 times
- B. 1 time
- C. 2 or 3 times
- D. 4 or 5 times
- E. 6 or 7 times
- F. 8 or 9 times
- G. 10 or 11 times
- H. 12 or more times

18. During the past 12 months, did your boyfriend or girlfriend ever hit, slap, or physically hurt you on purpose?

- A. I have not had a boyfriend or girlfriend during the past 12 months
- B. Yes
- C. No

**The next question asks about physical fights. A physical fight occurs when two or more students of about the same strength or power choose to fight each other.**

19. During the past 12 months, how many times were you in a physical fight?

- A. 0 times
- B. 1 time
- C. 2 or 3 times
- D. 4 or 5 times
- E. 6 or 7 times
- F. 8 or 9 times
- G. 10 or 11 times
- H. 12 or more times

**The next 5 questions ask about the most serious injury that happened to you during the past 12 months. An injury is serious when it makes you miss at least one full day of usual activities (such as school, sports, or a job) or requires treatment by a doctor or nurse.**

20. During the past 12 months, how many times were you seriously injured?

- A. 0 times
- B. 1 time
- C. 2 or 3 times
- D. 4 or 5 times
- E. 6 or 7 times
- F. 8 or 9 times
- G. 10 or 11 times
- H. 12 or more times

21. During the past 12 months, what were you doing when the most serious injury happened to you?

- A. I was not seriously injured during the past 12 months
- B. Playing or training for a sport
- C. Walking or running, but not as part of playing or training for a sport
- D. Riding a bicycle, moped, roller boots, or skate board
- E. Driving of a car or other motor vehicle
- F. Doing any paid or unpaid work, including housework, yard work, or cooking
- G. Nothing
- H. Something else

22. During the past 12 months, what was the major cause of the most serious injury that happened to you?

- A. I was not seriously injured during the past 12 months
- B. I was in a motor vehicle accident or hit by a motor vehicle
- C. I fell
- D. Something fell on me or hit me
- E. I was fighting with someone
- F. I was attacked, assaulted, or abused by someone
- G. I was in a fire or too near a flame or something hot
- H. Something else caused my injury

23. During the past 12 months, how did the most serious injury happen to you?

- A. I was not seriously injured during the past 12 months
- B. I hurt myself by accident
- C. Someone else hurt me by accident
- D. I hurt myself on purpose
- E. Someone else hurt me on purpose

24. During the past 12 months, what was the most serious injury that happened to you?

- A. I was not seriously injured during the past 12 months
- B. I had a broken bone or a dislocated joint
- C. I had a cut, or stab wound
- D. I had a concussion or other head or neck injury, was knocked out, or could not breathe
- E. I had a gunshot wound
- F. I had a bad burn
- G. I lost all or part of a foot, leg, hand, or arm
- H. Something else happened to me

**The next 2 questions ask about bullying. Bullying occurs when a student or group of students say or do bad and unpleasant things to another student. It is also bullying when a student is teased a lot in an unpleasant way or when a student is left out of things on purpose. It is not bullying when two students of about the same strength or power argue or fight or when teasing is done in a friendly and fun way.**

25. During the past 30 days, on how many days were you bullied?

- A. 0 days
- B. 1 or 2 days
- C. 3 to 5 days
- D. 6 to 9 days
- E. 10 to 19 days
- F. 20 to 29 days
- G. All 30 days

26. During the past 30 days, how were you bullied most often?
- A. I was not bullied during the past 30 days
  - B. I was hit, kicked, pushed, shoved around, or locked indoors
  - C. I was made fun of because of my skin color
  - D. I was made fun of because of my religion
  - E. I was made fun of with sexual jokes, comments, or gestures
  - F. I was left out of activities on purpose or completely ignored
  - G. I was made fun of because of how my body or face looks
  - H. I was bullied in some other way

**The next 2 questions ask about violence.**

27. During the past 30 days, on how many days did you carry a weapon, such as a gun, knife, or club?
- A. 0 days
  - B. 1 day
  - C. 2 or 3 days
  - D. 4 or 5 days
  - E. 6 or more days

28. Have you ever been physically forced to have sexual intercourse when you did not want to?

- A. Yes
- B. No

**The next 2 questions ask about safety and precaution measures in traffic.**

29. During the past 30 days, how often did you use a seat belt when riding in a car or other motor vehicle driven by someone else?

- A. I did not ride in a motor vehicle driven by someone else
- B. Never
- C. Rarely
- D. Sometimes
- E. Most of the time
- F. Always

30. During the past 30 days, how often did you ride in a car or other motor vehicle driven by someone who had been drinking alcohol?

- A. 0 times
- B. 1 time
- C. 2 or 3 times
- D. 4 or 5 times
- E. 6 or more times

**The 6 questions ask about your feelings and friendships.**

31. During the past 12 months, how often have you felt lonely?
- A. Never
  - B. Rarely
  - C. Sometimes
  - D. Most of the time
  - E. Always
32. During the past 12 months, how often have you been so worried about something that you could not sleep at night?
- A. Never
  - B. Rarely
  - C. Sometimes
  - D. Most of the time
  - E. Always
33. During the past 12 months, did you ever seriously consider attempting suicide?
- A. Yes
  - B. No
34. During the past 12 months, did you make a plan about how you would attempt suicide?
- A. Yes
  - B. No
35. How many close friends do you have?
- A. 0
  - B. 1
  - C. 2
  - D. 3 or more
36. During this school year, were you taught in any of your classes how to handle stress in healthy ways?
- A. Yes
  - B. No
  - C. I do not know

**The next 8 questions ask about cigarette and other tobacco use.**

37. How old were you when you first tried a cigarette?

- A. I have never smoked cigarettes
- B. 7 years old or younger
- C. 8 or 9 years old
- D. 10 or 11 years old
- E. 12 or 13 years old
- F. 14 or 15 years old
- G. 16 years old or older

38. During the past 30 days, on how many days did you smoke cigarettes?

- A. 0 days
- B. 1 or 2 days
- C. 3 to 5 days
- D. 6 to 9 days
- E. 10 to 19 days
- F. 20 to 29 days
- G. All 30 days

39. During the past 30 days, did anyone ever refuse to sell you cigarettes because of your age?

- A. I did not try to buy cigarettes during the past 30 days
- B. Yes, someone refused to sell me cigarettes because of my age
- C. No, my age was not an obstacle for buying cigarettes

40. During the past 12 months, have you ever tried to stop smoking cigarettes?

- A. I have never smoked cigarettes
- B. I did not smoke cigarettes during the past 12 months
- C. Yes
- D. No

41. If one of your best friends offered you a cigarette, would you smoke it?

- A. Definitely not
- B. Probably not
- C. Probably yes
- D. Definitely yes

42. During the past 7 days, on how many days have people smoked in your presence?

- A. 0 days
- B. 1 or 2 days
- C. 3 or 4 days
- D. 5 or 6 days
- E. All 7 days

43. Which of your parents or guardians use any form of tobacco?

- A. Neither
- B. My father /male guardian
- C. My mother /female guardian
- D. Both
- E. I do not know

44. Are you in favor of banning smoking in public places, such as in restaurants; in buses, trains; in schools; on playgrounds; sport arenas; and in discos?

- A. Yes
- B. No

**The next 8 questions ask about drinking alcohol. This includes drinking beer, wine, whiskey, ouzo, or rakija. Drinking alcohol does not include drinking a few sips of wine for religious purposes.**

45. How old were you when you had your first drink of alcohol other than a few sips?

- A. I have never had a drink of alcohol other than a few sips
- B. 7 years old or younger
- C. 8 or 9 years old
- D. 10 or 11 years old
- E. 12 or 13 years old
- F. 14 or 15 years old
- G. 16 years old or older

46. Where were you the last time you had a drink of alcohol?

- A. I have never had a drink of alcohol
- B. At home
- C. At someone else's home
- D. At school
- E. Out on the street, in a park, or in some other open area
- F. At a bar, parlor, pub, or disco
- G. In a restaurant
- H. Some other place

47. During the past 30 days, on how many days did you have at least one drink containing alcohol?

- A. 0 days
- B. 1 or 2 days
- C. 3 to 5 days
- D. 6 to 9 days
- E. 10 to 19 days
- F. 20 to 29 days
- G. All 30 days

48. During the past 30 days, on the days you drank alcohol, how many drinks did you usually drink per day?
- A. I did not drink alcohol during the past 30 days
  - B. Less than one drink
  - C. 1 drink
  - D. 2 drinks
  - E. 3 drinks
  - F. 4 drinks
  - G. 5 or more drinks
49. During the past 30 days, how did you usually get the alcohol you drank? SELECT ONLY ONE RESPONSE.
- A. I did not drink alcohol during the past 30 days
  - B. I bought it in a store, shop, or from a street vendor
  - C. I gave someone else money to buy it for me
  - D. I got it from my friends
  - E. I got it from home
  - F. I stole it
  - G. I got it some other way
50. During your life, how many times did you drink so much alcohol that you were really drunk?
- A. 0 times
  - B. 1 or 2 times
  - C. 3 to 9 times
  - D. 10 or more times
51. During the past 30 days, did anyone refuse to sell you alcohol because of your age?
- A. I did not try to buy alcohol during the past 30 days
  - B. Yes, someone refused to sell me alcohol because of my age
  - C. No, my age was not an obstacle for buying alcohol
52. During your life, how many times have you ever had a hang-over, felt sick, got into trouble with your family or friends, missed school, or got into fights, as a result of drinking alcohol?
- A. 0 times
  - B. 1 or 2 times
  - C. 3 to 9 times
  - D. 10 or more times

**The next 5 questions ask about drugs.**

53. During your life, how many times have you used drugs, such as marijuana?
- A. 0 times
  - B. 1 or 2 times
  - C. 3 to 9 times
  - D. 10 or more times

54. How old were you when you tried drugs, such as marijuana, for the first time?

- A. I have never tried drugs, such as marijuana
- B. 7 years old or younger
- C. 8 or 9 years old
- D. 10 or 11 years old
- E. 12 or 13 years old
- F. 14 or 15 years old
- G. 16 years old or older

55. During the past 30 days, has anyone offered, sold, or given you a drug at school?

- A. Yes
- B. No

56. During this school year, were you taught in any of your classes the dangers of using drugs?

- A. Yes
- B. No
- C. I do not know

57. During this school year, were you taught in any of your classes where to get help to stop using drugs?

- A. Yes
- B. No
- C. I do not know

**The next question asks about the role of media.**

58. During the past 30 days, how many advertisements have you seen (on TV, radio, billboards, posters, or the daily news; in magazines; or at the movies) about smoking, drinking alcohol, using drugs, or violence?

- A. A lot
- B. A few
- C. None

**The next 5 questions ask about sexual intercourse.**

59. Have you ever had sexual intercourse?

- A. Yes
- B. No

60. How old were you when you had sexual intercourse for the first time?

- A. I have never had sexual intercourse
- B. 11 years old or younger
- C. 12 years old
- D. 13 years old
- E. 14 years old
- F. 15 years old
- G. 16 years old or older

61. During your life, with how many people have you had sexual intercourse?

- A. I have never had sexual intercourse
- B. 1 partner
- C. 2 partners
- D. 3 partners
- E. 4 partners
- F. 5 partners
- G. 6 or more partners

62. During the past 12 months, have you had sexual intercourse?

- A. Yes
- B. No

63. The last time you had sexual intercourse, did you or your partner use a condom?

- A. I have never had sexual intercourse
- B. Yes
- C. No

**The next 3 questions ask about physical activity. Physical activity is any activity that increases your heart rate and makes you get out of breath some of the time. Physical activity can be done in sports, playing with friends, or walking to school. Some examples of physical activity are running, fast walking, biking, dancing, football, and skateboard.**

ADD UP ALL THE TIME YOU SPEND IN PHYSICAL ACTIVITY EACH DAY. DO NOT INCLUDE YOUR PHYSICAL EDUCATION.

64. During the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day?

- A. 0 days
- B. 1 day
- C. 2 days
- D. 3 days
- E. 4 days
- F. 5 days
- G. 6 days
- H. 7 days

65. During a typical or usual week, on how many days are you physically active for a total of at least 60 minutes per day?

- A. 0 days
- B. 1 day
- C. 2 days
- D. 3 days
- E. 4 days
- F. 5 days
- G. 6 days
- H. 7 days

66. During this school year, were you taught in any of your classes the benefits of physical activity?

- A. Yes
- B. No
- C. I do not know

**The next question asks about the time you spend mostly sitting when you are not in school or doing homework.**

67. How much time do you spend during a typical or usual day sitting and watching television, playing computer games, talking with friends, or doing other sitting activities?

- A. Less than 1 hour per day
- B. 1 to 2 hours per day
- C. 3 to 4 hours per day
- D. 5 to 6 hours per day
- E. 7 to 8 hours per day
- F. More than 8 hours per day

**The next 2 questions ask about going to and coming home from school.**

68. During the past 7 days, on how many days did you walk or ride a bicycle to and back from school?

- A. 0 days
- B. 1 day
- C. 2 days
- D. 3 days
- E. 4 days
- F. 5 days
- G. 6 days
- H. 7 days

69. During the past 7 days, how long did it usually take for you to get to and back from school each day? ADD UP THE TIME YOU SPEND GOING TO AND COMING HOME FROM SCHOOL.

- A. Less than 10 minutes per day
- B. 10 to 19 minutes per day
- C. 20 to 29 minutes per day
- D. 30 to 39 minutes per day
- E. 40 to 49 minutes per day
- F. 50 to 59 minutes per day
- G. 60 or more minutes per day

**The next 5 questions ask about your experiences at school and at home.**

70. During the past 30 days, on how many days you did not participated on classes inexcusably?

- A. 0 days
- B. 1 or 2 days
- C. 3 to 5 days
- D. 6 to 9 days
- E. 10 or more days

71. During the past 30 days, how often were most of the students in your school kind and helpful?

- A. Never
- B. Rarely
- C. Sometimes
- D. Most of the time
- E. Always

72. During the past 30 days, how often did your parents or guardians check to see if you have finished your homework ?

- A. Never
- B. Rarely
- C. Sometimes
- D. Most of the time
- E. Always

73. During the past 30 days, how often did your parents or guardians understand your problems and worries?

- A. Never
- B. Rarely
- C. Sometimes
- D. Most of the time
- E. Always

74. During the past 30 days, how often did your parents or guardians really knew what you were doing during your free time?
- A. Never
  - B. Rarely
  - C. Sometimes
  - D. Most of the time
  - E. Always



## **Appendix 2.**

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