

# NATIONAL HEALTH SURVEY SERBIA

---

2006

KEY FINDINGS

Hypertension

Smoking

Hygienic habits

Health status of adult population

Lifestyle

Reproductive health of women

Use of medicine

Diet

Mental health

Sexual behavior

*Republic of Serbia*  
*MINISTRY OF HEALTH*

*NATIONAL HEALTH SURVEY*  
*SERBIA, 2006*

*KEY FINDINGS*

*NATIONAL HEALTH SURVEY  
SERBIA, 2006  
KEY FINDINGS*

*Reviewers*

*Prof. Snežana Simić*

*Prof. Ljiljana Denić*

*Translator*

*Vesna Kostić, BLit*

*Publisher*

*Ministry of Health*

*Republic of Serbia*

*Design and pre-press*

*Dragan Brujić*

*Print run*

*500*

*Printed by*

*Donat Graf d.o.o.*

*2007*



*Republic of Serbia*  
*MINISTRY OF HEALTH*

# NATIONAL HEALTH SURVEY SERBIA, 2006

---

K E Y F I N D I N G S

---

*May 2007*

## FOREWORD

*This publication presents the key findings of the 2006 Health Survey of the Republic of Serbia that the Ministry of Health conducted with financial and professional support of the World Bank, the World Health Organization Regional Office for Europe – Country Office Serbia and the Institute of Public Health of Serbia „Dr Milan Jovanović Batut“. Fortunately, the 2000 Health Survey of the Republic of Serbia published immediately before the democratic changes in October of the same year pursued practically the same methodology, so that the results of that study provide a solid foundation to evaluate the effects of the Ministry of Health's work on the reform, development of the health care system and health protection and promotion of the Serbian population.*

*Health surveys, conducted periodically, provide precious data on social and economic health determinants, health status based on self-assessment of individuals, lifestyles, functional abilities, use of health care services and expenditures associated with health care. These data enable evaluation of policies and programs in the period between two surveys, identification of priority problems and implementation of pertinent measures and activities for health promotion and health care of the population, monitoring of the health status and epidemiological trends of diseases, formulation of health policy objectives and defining the health system development strategy. They are also indispensable for balancing the increasing health care needs with available resources in order to provide efficient and quality health care for longer life and better quality of life of the people.*

*Important success in reduction of the prevalence of smoking among adults and adolescents, higher level of information on risk factors and level of responsibility for own health, more frequent use of services in the public sector and higher satisfaction of users with the services rendered resulting from the findings of the health survey suggest responsible attitude of the Ministry of Health to the citizens and Government in management of the public resources earmarked for the development of the health care system of the Republic of Serbia.*



Minister of Health

Professor Tomica Milosavljević, MD, PhD

---

# **SURVEY BACKGROUND**

---

The 2006 National Health Survey for the population of Serbia (without data on Kosovo and Metohija) was conducted by the Ministry of Health of the Republic of Serbia with financial and professional support of the World Bank – the “Serbia Health Project”, the World Health Organization Regional Office for Europe – Country Office Serbia and the Institute of Public Health of Serbia “Dr Milan Jovanović Batut”.

## **STUDY TEAM**

### **Core Team Members**

Jasmina Grozdanov, MD, PhD, Principal Investigator  
(Institute of Public Health of Serbia)

Assoc. Prof. Dejana Vuković, MD, PhD, Deputy Principal Investigator  
(Social Medicine Institute, Faculty of Medicine, University of Belgrade)

Maja Krstić, MD, MSc, Study Secretary  
(Institute of Public Health of Serbia)

Biljana Vančevska-Slijepčević, MD  
(Ministry of Health, Republic of Serbia)

### **Local Consultants**

Prof. Vera Grujić, MD, PhD, for adult population,  
Institute of Public Health Vojvodina, Novi Sad

Zorica Dimitrijević, MD, PhD, for population of school children and adolescents,  
City Institute of Public Health Belgrade

Milena Vasić, MD, PhD, household profiles,  
Institute of Public Health of Serbia

Sanda Pešić, BMath, for IT support and preparing statistical analysis,  
Institute of Public Health of Serbia Consultancy Agency

### **Consultancy Agency**

Strategic Marketing (SMMRI) Belgrade for sampling,  
field study, entering, processing and statistical analyses of the data

### **International Consultant**

Prof. Elliot M. Berry MD, FRCP, Head of the World Health Organization Collaborative Center for Capacity Building in Public Health and Director of the Department of Human Nutrition and Metabolism of the Braun School of Public Health of the Hebrew University - Hadassah Medical School, Jerusalem, Israel

## **SUPERVISORY BOARD**

Prof. Tomica Milosavljević, MD, PhD,  
Minister of Health in the Government of the Republic of Serbia

Prof. Snežana Simić, MD, PhD,  
Assistant Minister of Health

Assoc. Prof. Goran Ilić, MD, PhD,  
Assistant Minister of Health

Tanja Knežević, MD, PhD,  
Director of the Institute of Public Health of Serbia

Prof. Mirjana Martinov Cvejin, MD, PhD,  
Director of the Public Health Institute Vojvodina, Novi Sad

Slobodan Tošović, MD,  
Director of the City Institute of Public Health Belgrade

Prof. Branislav Petrović, MD, PhD,  
Director of the Institute of Public Health Niš

Assoc. Prof. Goran Samardžić, MD, PhD,  
Director of the Institute of Public Health Kragujevac (by January 2007)

Saša Rikanović, MSc,  
Director of the World Bank Project Coordination Unit  
at the Ministry of Health of the Republic of Serbia

## **REVIEWERS**

Prof. Snežana Simić, MD, PhD,  
Institute of Social Medicine, Medical Faculty, University of Belgrade

Prof. Ljiljana Denić, MD, PhD,  
Institute of Epidemiology, Medical Faculty, University of Belgrade

## ACKNOWLEDGEMENTS

*The study team would like to thank particularly Prof. Tomica Milosavljević, the Minister of Health in the Government of the Republic of Serbia whose personal commitment has made this study possible.*

*We would also like to thank the following people for support and advice:*

*Tanja Knežević, MD, PhD  
(Institute of Public Health of Serbia)*

*Saša Rikanović, MSc,  
(World Bank Project Coordination Unit,  
Ministry of Health, Republic of Serbia)*

*Danijela Simić, MD  
(Institute of Public Health of Serbia)*

*Anđelka Dželetović, MD, PhD  
(Institute of Public Health of Serbia)*

*Ivana Bjelić, BMath  
(Strategic Marketing Belgrade)*

*Janko Janković, MD  
(Medical Faculty, University of Belgrade)*

*Tanja Bajić, MD  
(Ministry of Health, Republic of Serbia)*

# CONTENT

**Foreword**

**Survey background**

**Acknowledgements**

INTRODUCTION	11
HOUSEHOLD CHARACTERISTICS, HOUSEHOLD SOCIAL-ECONOMIC STATUS, DRINKING WATER SUPPLY AND WASTE DISPOSAL	13
HEALTH STATUS OF ADULT POPULATION	15
Self-assessment of health and satisfaction with life	15
Injuries	15
Prevalence and incidence of chronic diseases	15
Prevalence of high blood pressure	16
Nutritional status	18
Monitoring and counseling relating to risks for chronic non- communicable diseases	19
Mental health	20
Ability to perform activities of daily living	21
ADULT POPULATION LIFE STYLE, KNOWLEDGE AND ATTITUDES TO HEALTH	22
Hygienic habits	22
Diet	22
Leisure, exercise and sports	24
Behavior in traffic	24
Knowledge of health risks	24
Smoking	25
Alcohol consumption	26
Use of psychoactive substances	26
Sexual behavior	27
HIV/AIDS	28
REPRODUCTIVE HEALTH OF WOMEN	30

<b>USE OF HEALTH SERVICES– ADULT POPULATION</b>	<b>32</b>
Primary Health Care (PHC)	32
Dental health care	33
Private practice	34
Hospital health care	35
Use of medication	35
Patient satisfaction with health care	36
<b>HEALTH CARE PAYMENTS</b>	<b>38</b>
<b>HEALTH STATUS OF CHILDREN AND ADOLESCENTS AGED 7–19 YEARS</b>	<b>39</b>
Self assessment of health and satisfaction with life	39
Blood pressure	39
Nutritional status	40
Information and counseling relating to risks of chronic non-communicable diseases	40
Mental health	41
<b>LIFESTYLE, KNOWLEDGE AND ATTITUDES TO HEALTH IN CHILDREN AND ADOLESCENTS AGED 7–19 YEARS</b>	<b>43</b>
Hygienic habits	43
Diet	43
Leisure, exercise and sports	44
Behavior in traffic	44
Awareness of health risks	44
Smoking	44
Alcohol consumption	45
Use of psychoactive substances	46
Sexual behavior and awareness of HIV and AIDS	46
<b>RELATIONS OF CHILDREN AND ADOLESCENTS AGED 7-19 WITH PARENTS AND ATTITUDE TO SCHOOL</b>	<b>48</b>
<b>USE OF HEALTH SERVICES – CHILDREN AND ADOLESCENTS AGED 7-19 YEARS</b>	<b>49</b>
Primary health care services	49
Dental health care	49
Hospital care	50
Use of medication	50
Reproductive health of female adolescents	51
<b>CONCLUSIONS</b>	<b>52</b>

---

## INTRODUCTION

---

The 2006 National Health Survey for the population of Serbia (without data on Kosovo and Metohija) was carried out by the Ministry of Health of the Republic of Serbia with financial and professional support of the World Bank – the “Serbia Health Project”, the World Health Organization Regional Office for Europe – Country Office Serbia and the Institute of Public Health of Serbia “Dr Milan Jovanović Batut”. The study was the follow up of the baseline study conducted in 2000 under the title “Health Status, Health Needs and Utilization of Health Care of the Population of Serbia” by the Institute of Public Health of Serbia “Dr Milan Jovanović Batut” in collaboration with the network of public health institutes and primary health care centers, with technical and financial support of the World Health Organization and UNICEF.

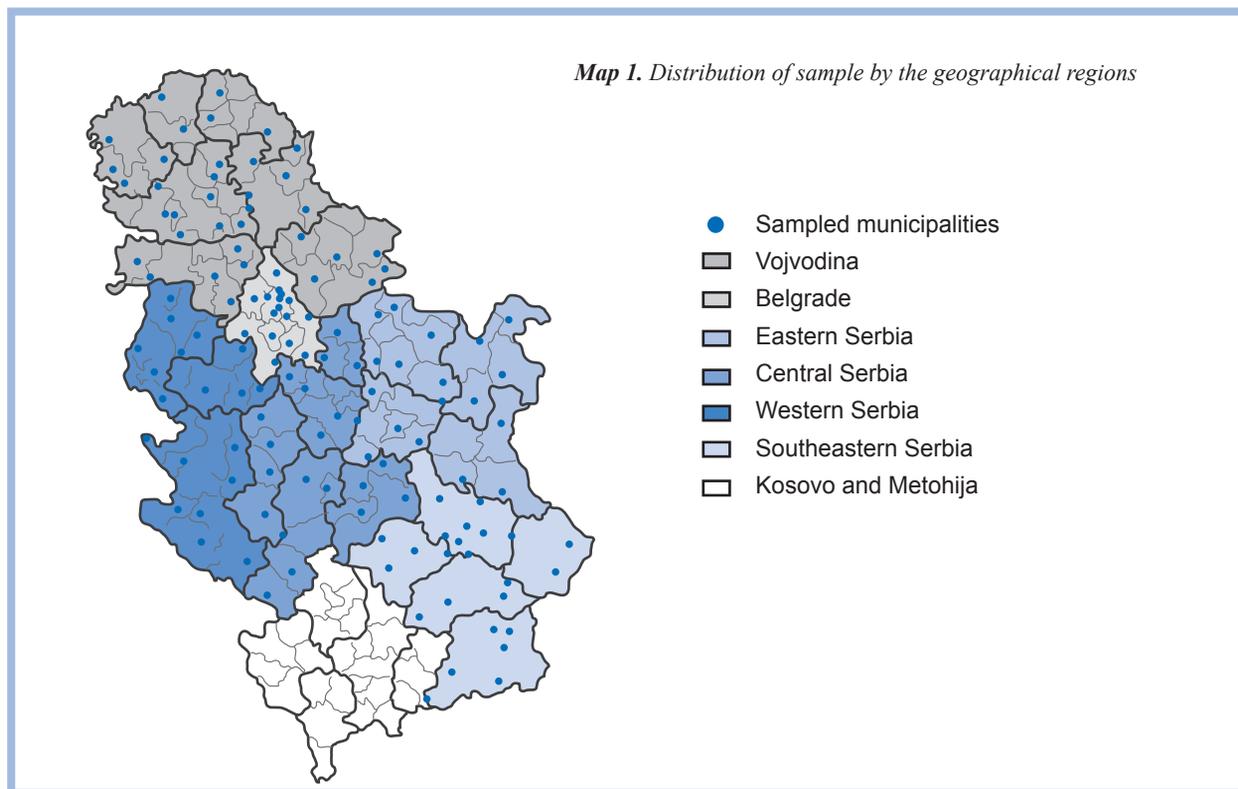
### **The primary objectives of the survey were:**

1. To evaluate health, identify the main health problems, health needs, use of health services and patient satisfaction with the health care, in a representative sample of the Serbian population over 7 years of age, on the national level and at the level of six geographical regions: Vojvodina, Belgrade, Western Serbia, Central Serbia, Eastern Serbia and Southeastern Serbia, as well as at the level of urban and non-urban settlements;
2. To investigate differences in the health status, exposure to risk factors and the use of health services in relation to demographic characteristics of the respective populations, social and economic status, geographical region and type of settlements in which they live;
3. To identify changes in the health status indicators, distribution of risk factors in the population, use of health services and patient satisfaction with health care in the period from 2000 to 2006.

### **Implementation of the survey**

A stratified two-stage sample of the population of the Republic of Serbia was used in the survey. The sample was selected to provide statistically reliable estimates of the health indicators at the national level and at the levels of six geographical regions. The following information was collected: on characteristics of families and households; demographic and socio-economic characteristics of responders, health self-assessment, mental health characteristics, characteristics of social interactions, ability to perform activities of daily living, characteristics of behavioral habits, diseases and injuries, health check-ups and early diagnosis of diseases, use of health services and patient satisfaction with health care, “out-of-pocket” payment for health care and objective health status.

The information on the health of the population of the Republic of Serbia was obtained from interviews, anthropometric and blood pressure measurements. Five questionnaires were used to collect the data: household questionnaire, questionnaire for adults aged 20+ years, and questionnaire for children and adolescents aged 7-19 years (face to face), self-administered questionnaire for adults aged 20+ years, and self-administered questionnaire for children and adolescents aged 12-19 years.



## Response rate

Out of 7,673 households selected for the sample, 7,119 were actually living at the address and 6,156 were interviewed.

The household response rate was 86.5%. In the households there were 15,563 adults aged 20+ years, of which 14,522 were interviewed yielding a 93.3% response rate. Out of 2,921 children aged 7 to 19 years, 2,721 were surveyed yielding a 93.2% response rate. The response rate in the self-administered questionnaire was 70.3% for adults and 77.0% for children and adolescents aged 12-19 years. The overall adult and children (aged 12-19) response rates were 80.7% and 80.6%, respectively.

## Presentation of results

This publication presents the key findings of the study by gender and age of the survey population, social-economic characteristics, education, household income and Demographic and Health Survey Wealth Index (hereafter - wealth index).

The population distribution was made from the lowest to the highest household value of the wealth index into five categories (quintiles), where the first comprised the poorest and the fifth the richest sector of the population. Also, the results are presented by the geographical regions and type of settlement in which the population live. The results are compared with the findings of the 2000 Health Survey.

## HOUSEHOLD CHARACTERISTICS, HOUSEHOLD SOCIAL-ECONOMIC STATUS, DRINKING WATER SUPPLY AND WASTE DISPOSAL

In 2006, the average Serbian household comprised 3 members, and the most common were the ones composed of 2 members.

The average apartment area per household member was 33.4 m<sup>2</sup>, with the average number of persons per bedroom being 1.6. In 2006, the average square area per person in an apartment was increased in comparison with 2000 when it was 26.8 m<sup>2</sup>.

Living conditions were estimated as poor by 17.3% of households, most commonly in Southeastern Serbia (23.3%), and other, i.e. non-urban settlements (22.4%), and in the group of the poorest households (41.0%).

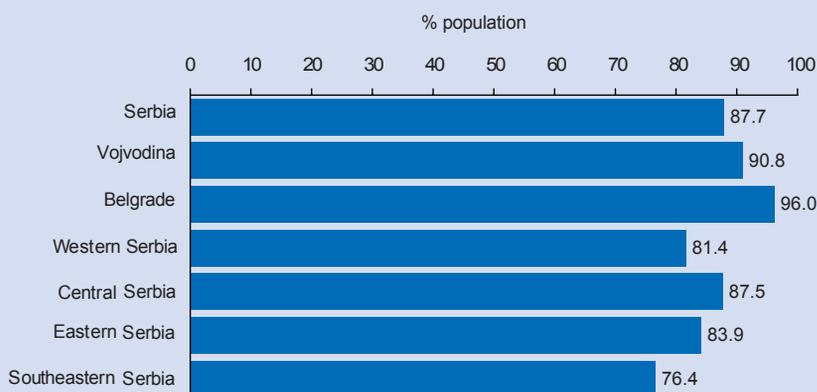
In 2006, 95.2% of the population of Serbia had running water available in the apartment; a significantly lower percentage was registered in Southeastern Serbia

(91.2%), and significantly higher in Belgrade (98.3%). A significant increase was recorded in comparison with 2000 when 91.9% of the households had connection to water supply system in the house / apartment.

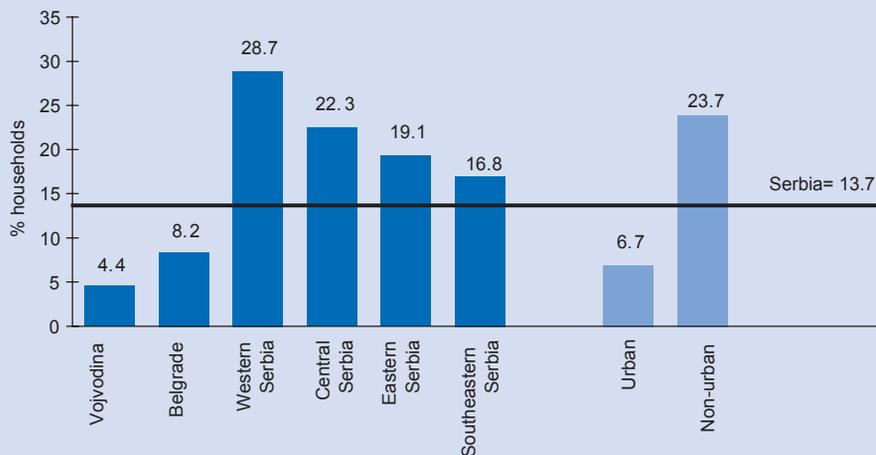
Sanitation facilities were available in 85.2% of the households in Serbia, representing a fall in comparison with 2000 when these were available in 89.3% of the households. Also, the number of households linked to sewerage networks or septic tanks fell from 90.7% in 2000 to 87.7% in 2006.

In 2006 in Belgrade (96.0%) and Vojvodina (90.8%) a significantly higher percentage of the population lived in households linked to a sewerage network or septic tank, while significantly under-average values were recorded in the Western, Eastern and Southeastern regions of Serbia (Figure 1).

**Figure 1.** Percentage of population living in households linked to the sewerage network or a septic tank, by geographical regions, Serbia, 2006



**Figure 2.** Households that are 4 km or more away from the nearest primary care clinic, by the regions and type of settlement, Serbia, 2006



In 40.5% of households in Serbia in 2006 the income in the month preceding the survey was sufficient to cover basic outlays (food, personal hygiene, cleaning of the apartment, clothing, footwear and utility bills); in 32.9% they were sufficient to cover all expenditures, which is a significant improvement in comparison with 2000 when the values were 16.8%, and 7.4%, respectively.

In 2006 more than one third (37.0%) of the households in Serbia described their financial situation

as poor, which is a significant improvement over 2000 (40.0%).

In 2006, one in seven households (13,7%) was 4 km or more from the nearest primary care clinic. A significantly lower percentage of households were 4 km or more away from the nearest primary care clinic in Vojvodina (4.4%) and Belgrade (8.2%), and urban settlements (6.7%), while the percentage was significantly higher in Western, Central and Eastern Serbia and non-urban settlements (Figure 2).

## HEALTH STATUS OF ADULT POPULATION

### Self-assessment of health and satisfaction with life

In 2006, 15.7% of adults self-assessed their health as very poor or poor; 37.1% as fair, and 47.0% rated it as good or very good. A significantly higher number of women perceived their health as fair or poor, contrary to men who tended to perceive their health as good or very good. Noticeably, people older than 55 yrs tended to assess their health as poor, while those above the age of 65 described it as very poor (Figure 3).

Although in the 2006 scale of life values (rank 1 most important, rank 9 least important) the adult population of Serbia prioritized health with an average rank of 1.5, only one quarter of the adults (24.4%) shared the desirable attitude on responsibility for own health. Responsibility for own health was recognized significantly more commonly by persons aged 20–44, groups with secondary or higher educational levels, those living in urban settlements, Belgrade and the richest by the wealth index (Figure 4).

### Injuries

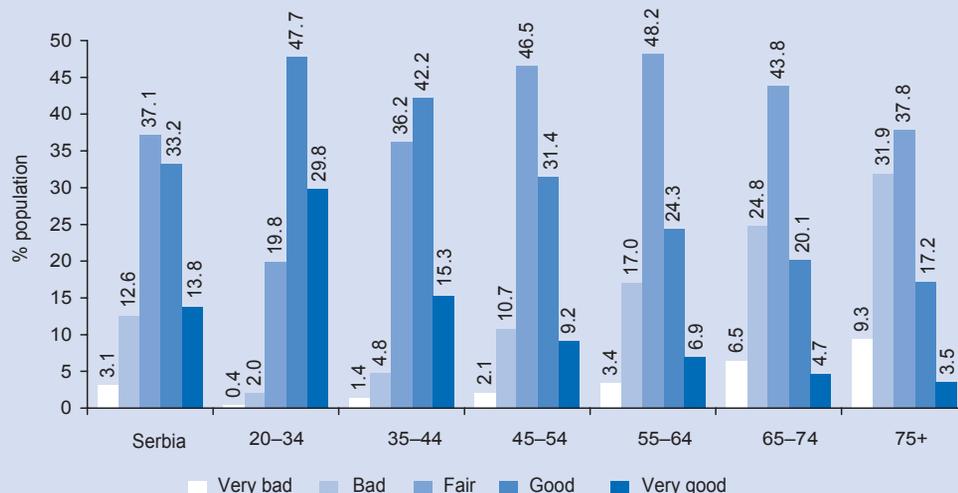
In 2006 in Serbia 8.3% of the adult population suffered an injury in the 12 months preceding the survey, which is significantly less than the figure for 2000 - 10.9%. One in eleven men suffered an injury (9.2%), while women were less prone to injuries (7.2%), significantly less in comparison to the Serbian average.

Injuries suffered by adults were significantly higher in Vojvodina (9.8%), and significantly lower in Western Serbia (4.8%).

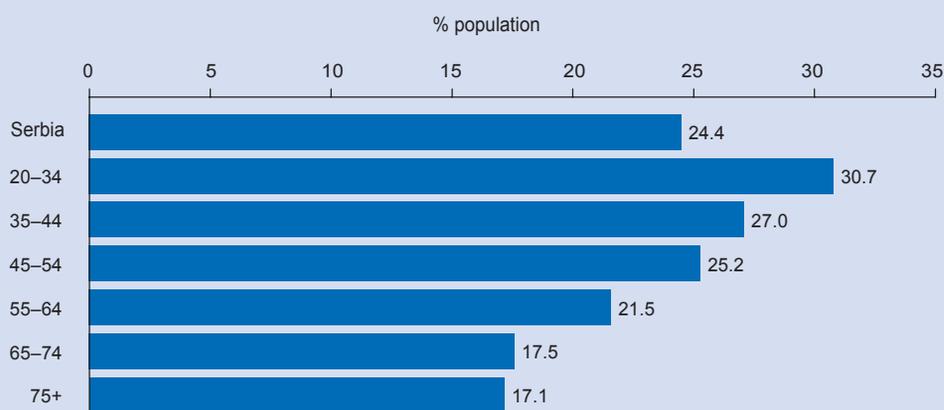
### Prevalence and incidence of chronic diseases

In 2006 over a half of the adult population of Serbia (55.9%), reported one of the 19 listed chronic diseases. The most common disease was elevated blood pressure (23.0%); it was followed by rheumatic joint diseases (16.8%), elevated blood lipids (7.9%), kidney diseases (6.0%) and allergies except for asthma (5.3%) (Figure 5).

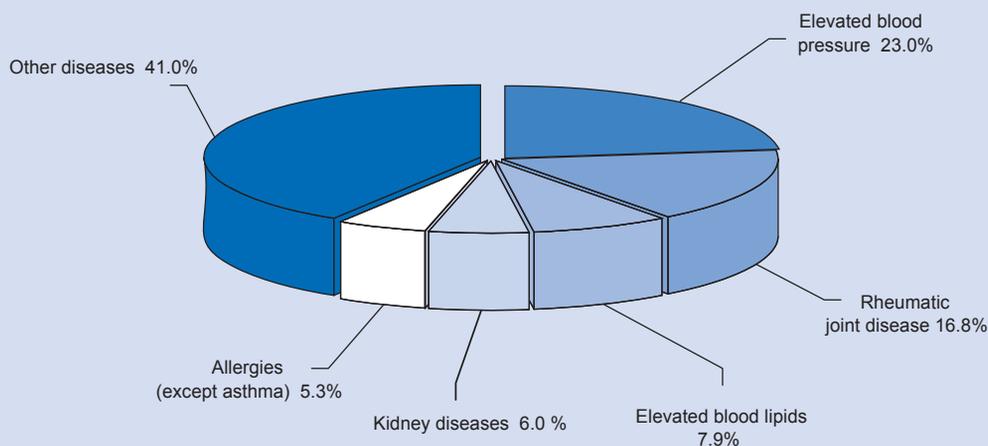
Figure 3. Self-assessment of overall health status of adult population by age, Serbia, 2006



**Figure 4.** Adult population sharing the desirable attitude on responsibility for own health, by age groups, Serbia, 2006



**Figure 5.** Adult population with history of any of the listed diseases, Serbia, 2006



The population of Belgrade (60.2%) and those with the lowest educational level (69.0%) had a significantly higher prevalence of all reported diseases as opposed to the population with secondary education (47.0%) and those rated the richest by the wealth index (52.7%).

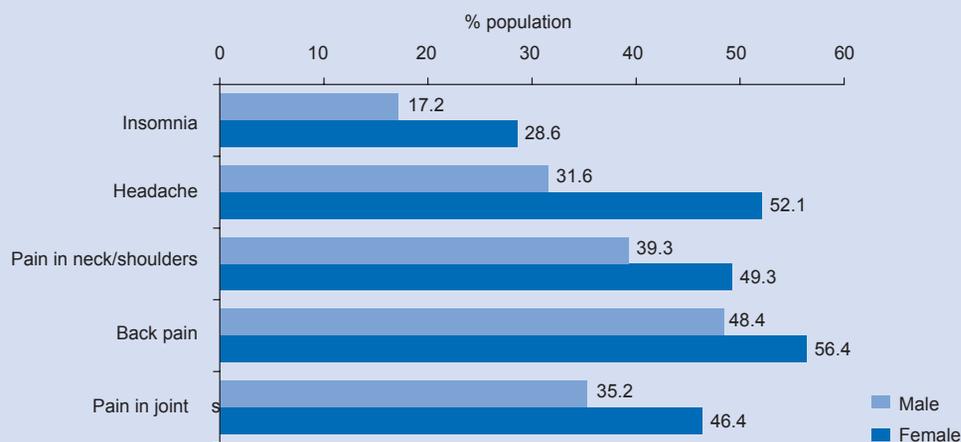
In the 12 months preceding the 2006 survey, some of the 19 selected diseases were initially diagnosed in 16.3% of adults (incidence).

The most common symptoms or health complaints experienced by the adult population of Serbia in 2006 in the 4 weeks preceding the survey were pain and insomnia (Figure 6).

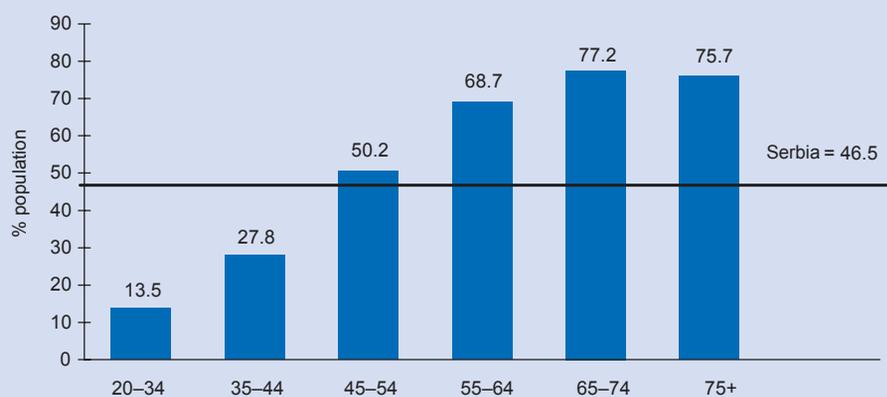
### Prevalence of high blood pressure

In 2006 in Serbia, measurements showed elevated systolic ( $\geq 140$  mmHg) or diastolic ( $\geq 90$  mmHg) blood

**Figure 6.** Adult population by the symptoms or health complaints experienced in the 4 weeks preceding the survey, by gender, Serbia, 2006



**Figure 7.** Adult population of Serbia with hypertension and potential hypertension, by age groups, Serbia, 2006



pressures in 46.5% of adults, or that they took medication to reduce blood pressure, i.e. may be described as persons with hypertension or potential hypertension (high blood pressure). In 2006 the percentage of hypertensive population was higher in comparison with 2000, when it was 44.5%. In 2006 the average value of the systolic pressure in adult population of Serbia was 134.2 mmHg (136.3 mmHg in men, vs. 131.9 mmHg in women) and systolic pressure 82.0 mmHg (83.4 mmHg in men vs. 80.5 mmHg in women).

Hypertension was more common in men (48.9%), persons over 45 yrs, those living in Southeastern Serbia (49.9%) as well as in those with the lowest education level (62.7%), poorest (53.1%) and poorer (49.3%) according to the wealth index (Figure 7).

In 2006 antihypertensive medication was used by 24.1% adults in Serbia. Every other person with hypertension and potential hypertension (51.3%) used antihypertensive medication, which is significantly more than in 2000 (46.5%). In the 4 weeks preceding

the survey 68.2% persons with hypertension were regularly medicated, which is significantly more than in 2000 when only 49.8% did so. The percentage of regular medication users was significantly higher in women (62.1%), and significantly lower in men (42.5%).

Also, this percentage increased in the population over the age of 55, those living in Southeastern of Serbia (59.8%), those with the lower education level (56.9%) and those with the household income exceeded RSD 15,000 per capita (i.e. household member) (56.6%) (Figure 8, Figure 9).

Out of the total number of people with hypertension in Serbia, 28.4% were aware of the disease; more precisely one in three women (30.8%) and one in four men (26.3%). The knowledge on the presence of

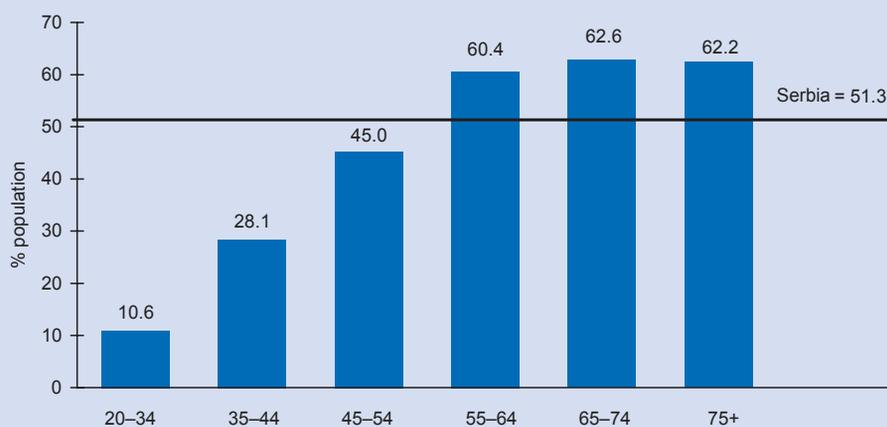
elevated blood pressure rose with age and peaked in the population over the age of 55. In 2006 of those aware of their hypertension, 87.9% received treatment, which was a significant improvement over 2000 when only 81.5% did so.

### Nutritional status

In 2006 in Serbia, based on the body mass index (BMI), 38.3% of the population had optimum weight, one in two was overweight (54.5%), subdivided as 18.3% obese and 36.2% pre-obese (Figure 10). There were also 2.3% of people underweight.

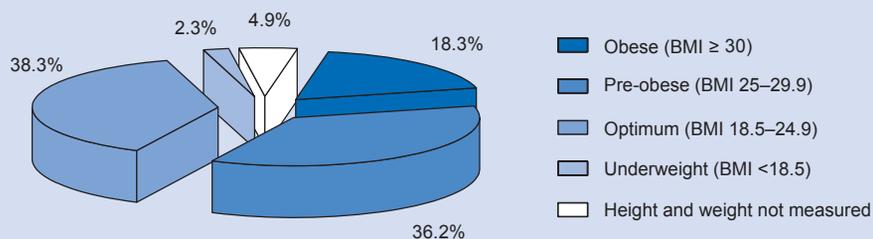
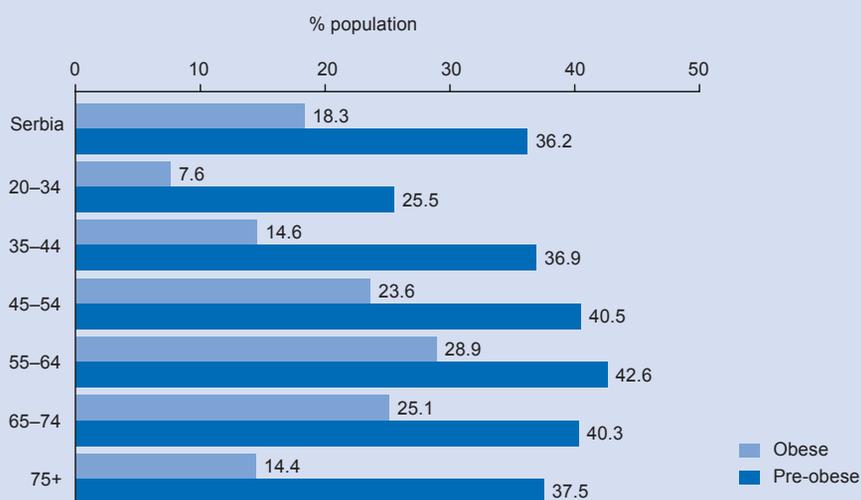
The average body mass index of the adult population of Serbia aged 20+ years was 26.7 kg/m<sup>2</sup> (27.4 for men vs. 26.0 for women).

**Figure 8.** Antihypertensive drug use in the population with hypertension or potential hypertension by age groups, Serbia, 2006



**Figure 9.** Antihypertensive drug use in the population with hypertension or potential hypertension by geographical regions and average income per household member (in RSD), Serbia, 2006



**Figure 10.** Adult population by body mass index categories, Serbia, 2006**Figure 11.** Adults population classified as obese and pre-obese by age groups, Serbia, 2006

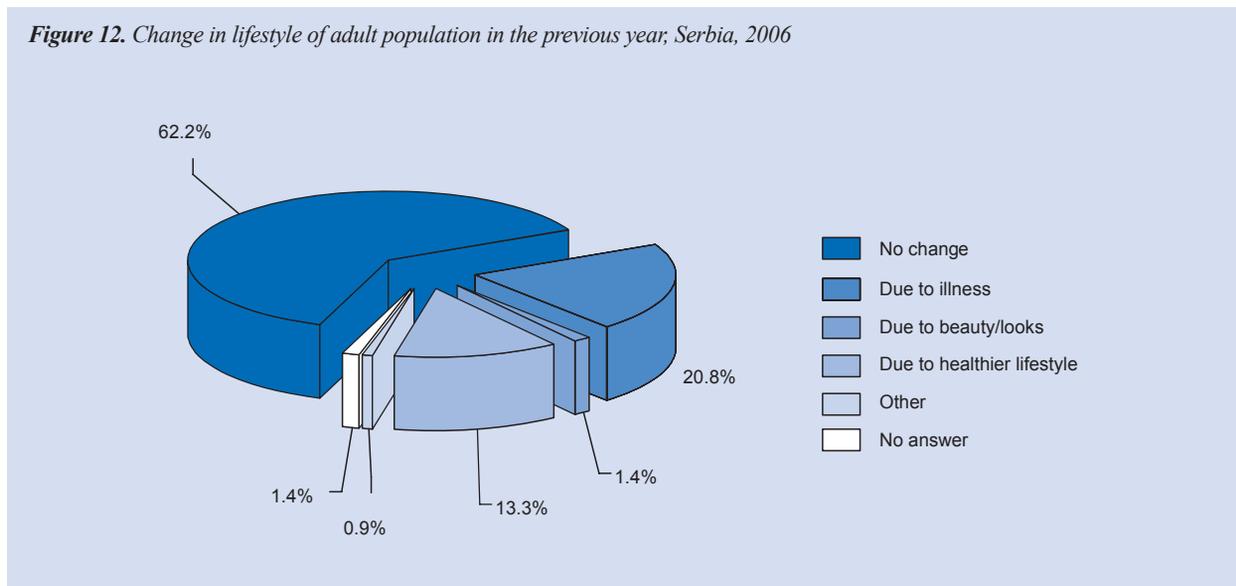
The highest percentage of obese people was found among those with the least education (23.1%), middle layer according to the wealth index (20.8%) and the populations of Vojvodina (20.5%) and Eastern Serbia (21.4%), while the pre-obese status was more prevalent in men (42.2%) and the richest group (38.3%). The percentage of obese and pre-obese people increased with age until 64, whereas in the population of 75+ a significant decrease in the percentage of obesity was noted (figure 11).

### Monitoring and counseling relating to risks for chronic non-communicable diseases

In 2006, almost every other adult citizen of Serbia received advice for change of life style (49.7%), which was significantly less than in 2000 (53.3%).

In the year preceding the survey, more than one third of the Serbian population made at least one change in health-related attitudes (37.8%). Disease was the most

**Figure 12.** Change in lifestyle of adult population in the previous year, Serbia, 2006



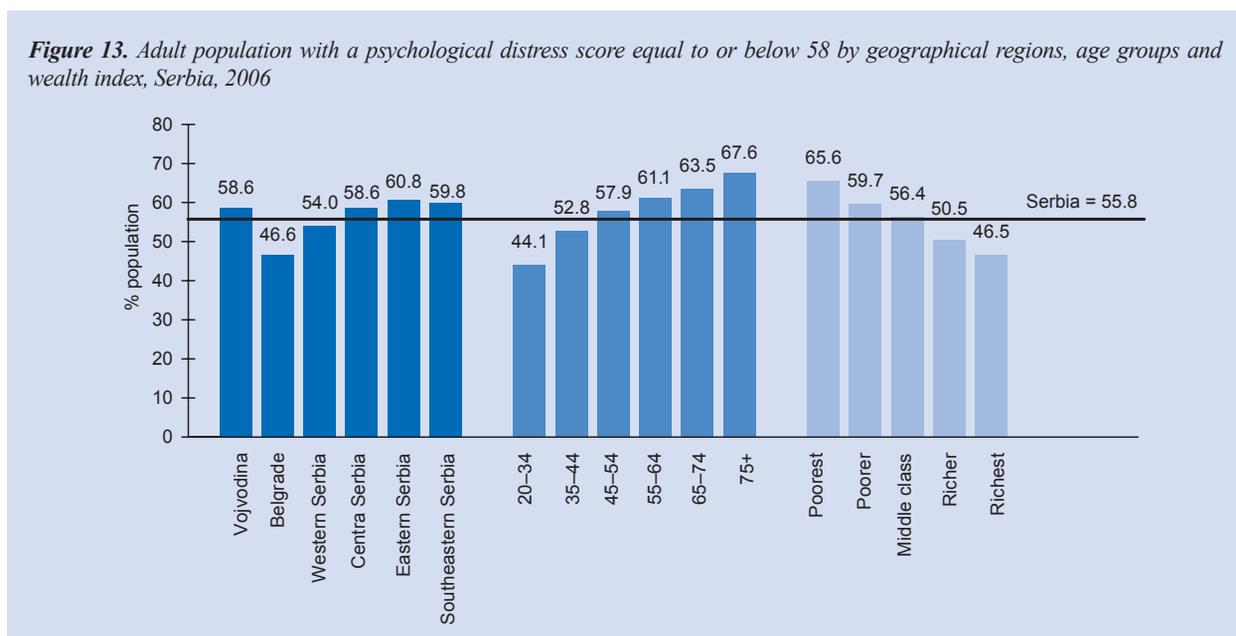
important impetus for change (20.8%) together with aspiration to a healthy lifestyle (13.3%) (Figure 12).

### Mental health

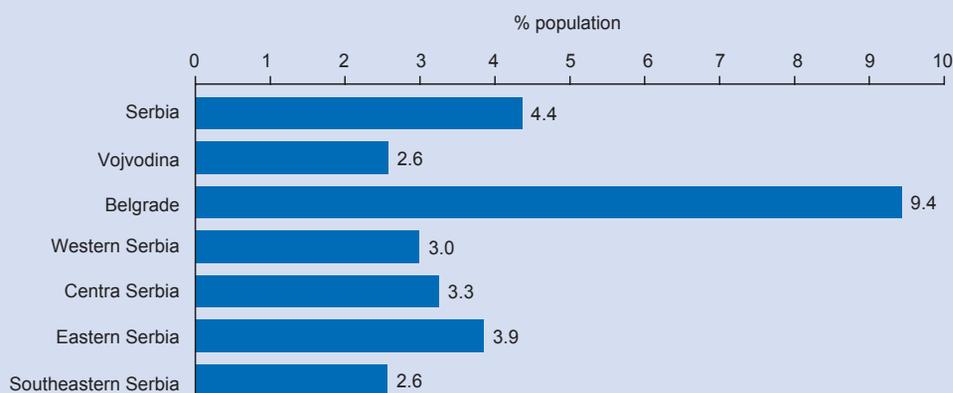
Based on the results obtained from the psychological distress scale (range 0 to 100) indicating the incidence of nervousness, despair, sadness, exhaustion and tiredness, it was found that these adverse conditions and feelings (score  $\leq 58$ ) were present longer over 4 weeks

preceding the 2006 survey, in over half the population (55.8%). These symptoms were significantly more common in women, those over the age of 55, in the population of Vojvodine, Southeastern Serbia, those living in non-urban settlements, as well as among the poorest and poorer citizens, measured by the wealth index (figure 13). Positive states and feelings (enthusiasm, serenity, calmness, happiness, energy), the prevalence of which was evaluated on the vitality scale score (range 0 to 100), were registered as a long-

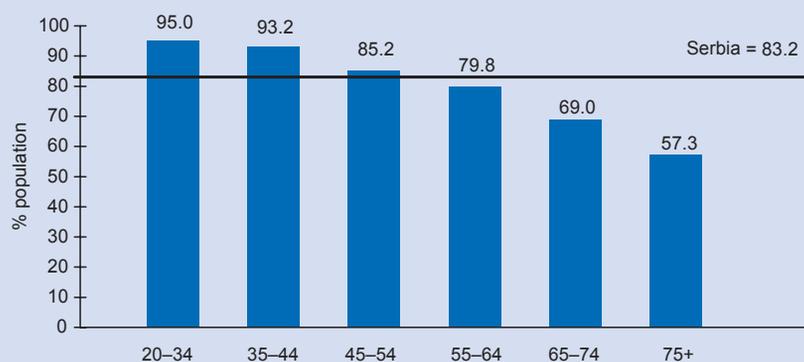
**Figure 13.** Adult population with a psychological distress score equal to or below 58 by geographical regions, age groups and wealth index, Serbia, 2006



**Figure 14.** Adult population with a vitality score equal to or over 72.5 by geographical region, Serbia, 2006



**Figure 15.** Adult population experiencing no difficulties in performing everyday activities for health reasons, by age groups, Serbia, 2006



term state (score  $\geq 72.5$ ) in the four weeks preceding the 2006 survey in only 4.4% of the adult population, more frequently among people living in Belgrade, those with an household income per member exceeding RSD 10,000 and those who were classified as the richest by the wealth index (Figure 14).

### Ability to perform activities of daily living

In 2006 in Serbia 83.2% of adults did not have any problems in performing everyday activities. The largest

proportion of the population (between 85% and 95%) who managed their everyday activities easily without difficulties from health problems were between 20 and 54 years of age, after which a sharp fall in the ability to perform everyday activities was recorded (Figure 15).

It is noteworthy that the percentage of people unable to perform everyday activities was highest in those with the lowest educational level, (72.8%), as well as those whose income per household member was below RSD 4,500 (80.7%), and the group ranked the poorest by the wealth index (76.4%).

## ADULT POPULATION LIFE STYLE, KNOWLEDGE AND ATTITUDES TO HEALTH

### Hygienic habits

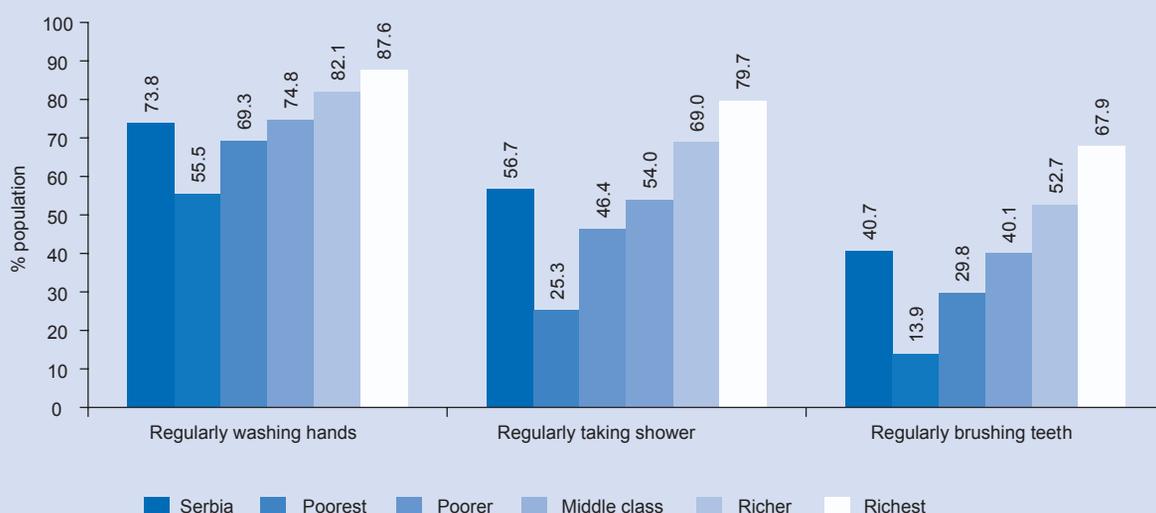
In 2006 in Serbia 73.8% of adults washed their hands regularly, which was a significant improvement over 2000, when only 67.4% did so. The percentage of the population taking a regular bath/shower fell from 64.9% in 2000 to 56.7% in 2006. The same applied to dental hygiene: in 2000 56.7% of the population brushed their teeth at least once a day, as compared to only 40.7% in 2006. In 2006 the best hygiene indices were recorded among adults below the age of 35, women, the urban population, citizens of Belgrade and those classified as the richest (Figure 16).

### Diet

In 2006 three main meals were regularly consumed by 56.6% of adults in Serbia, which was an improvement in comparison with 2000 when only 52.8% had them. More than three quarters (77.6%) of the Serbian population had a regular breakfast. The oldest, the poorest and those living in non-urban settlements had their meals more regularly than those that were better off and lived in cities.

In 2006 over half of the population (57.2%) used predominantly white bread, and 14.8% of adults used whole grain, rye and similar types of bread.

**Figure 16.** Adult population with good hygiene habits, by the wealth index, Serbia, 2006

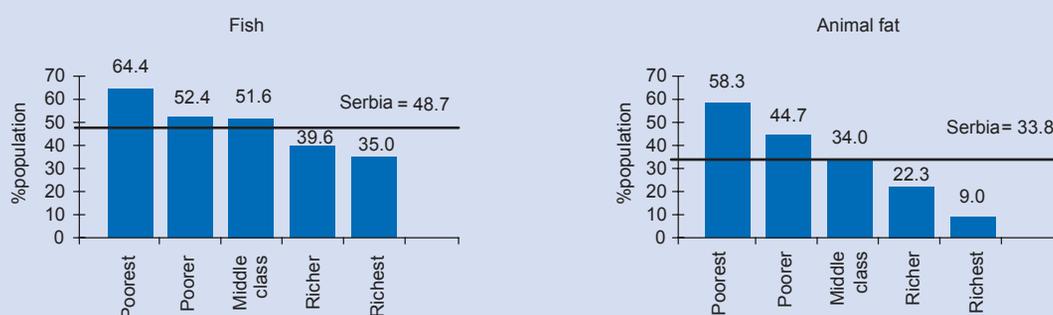


The use of animal lard to prepare meals was reduced in 2006 (33.8%) in comparison with 2000 (41.0%). Animal fats were mostly used to prepare meals in Western Serbia (44.5%) and Vojvodina (43.8%), and least in Belgrade (14.2%). The use of animal fats was most prevalent among the poorest population (58.3%) and poorer (44.7%), and it gradually fell with the rise of wealth index, so that only 9.0% of the richest used this type of fat to prepare their meals (Figure 17).

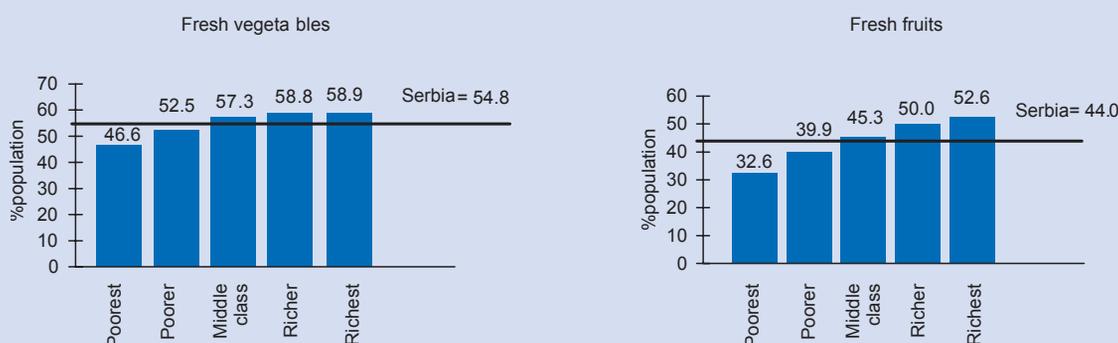
In 2006 in Serbia 48.7% of the population ate fish less than once a week. The population of Belgrade and Vojvodina, the richest and those living in urban settlements had fish in their diet more frequently (Figure 17).

In 2006 fresh vegetables were eaten daily by 54.8% of adults, which was significantly more than in 2000 when only 42.4% did so. In Vojvodina and Central Serbia a significantly lower number of people used fresh vegetables in their daily diet (44.0% and 49.3%, respectively). Fresh fruits were a part of the everyday diet of 44.0% of the population. The frequency of use of fresh fruits has increased in comparison with 2000 when it was 34.4%. The population of Western Serbia and Belgrade used fresh fruits significantly more (51.4% and 51.0%, respectively), compared to those living in Central Serbia (35.4%) and Vojvodina (40.4%). The richer and richest people used fresh fruits and vegetables more often (Figure 18).

**Figure 17.** Adult population using fish in their diet less than once a week and using animal fats to prepare meals, by the wealth index, Serbia, 2006



**Figure 18.** Adult population that eat fresh fruits and vegetables daily, by the wealth index, Serbia, 2006



In 2006 one in five adults in Serbia (19.9%) never thought of the health implications when they chose what to eat, which was more than in 2000 (15.4%). When selecting their diet, the elderly (75+) appeared to think less (25.3%), and so did the population of Southeastern Serbia (24.8%) and the poorest part of population (28.7%).

### Leisure, exercise and sports

In 2006 two thirds of the population of Serbia (67.7%) spent their free time mainly in a sedentary way (Figure 19).

In 2006 the percentage of adults who exercised more than 3 times a week intensively, i.e. sweating and breathing faster, reached 25.5% which was significantly more than in 2000 when only 13.7% did so.

In 2006, one third of the employed population in Serbia (31.1%) had a sedentary type of work: one quarter of men (25.4%) and two fifths of women (40.6%). The percentage of employees with a sedentary type of work was significantly increased in comparison with 2000 when it was only 25.2%. The number is the highest among the richest (49.7%) and tends to fall with the wealth index, reaching the lowest value with the poorest, i.e. only 12.0%.

### Behavior in traffic

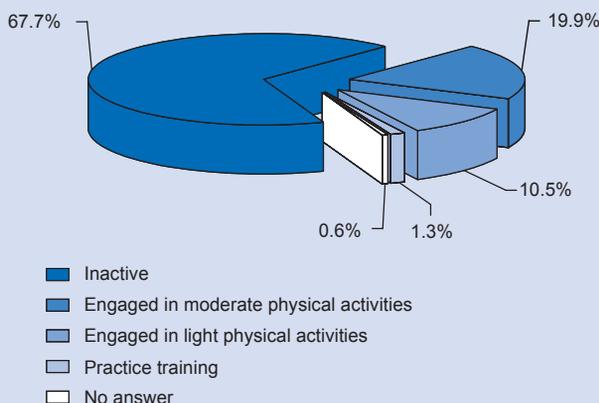
In 2006, more than four fifths of drivers (83.0%) in Serbia used a safety belt while driving, which was significantly more than in 2000 (31.4%). In the 18–34 age group, practically all drivers have occasionally driven under the influence of alcohol (97.7%), exceeded the speed limit (88.9%) and used their mobile phone while driving (82.9%).

In 2006 the percentage of the adult population, based on their own admission, that behaved recklessly, crossing streets at undesignated areas (no zebra), or at red traffic light was 6.5%, peaking in Belgrade at 8.4%.

### Knowledge of health risks

In 2006 the percentage of the adult population in Serbia who were not aware of a single health risk in their environment was 1.9%, which was significantly less than in 2000 when it reached 5.0%. Health risks associated with ultraviolet radiation was recognized by 28.1% of the population, most in Vojvodina (37.6%), those aged 20–44 (33.2%) and the richest (36.0%). Violence as a health risk was identified by 23.8% adults in 2006 which was significantly less than in 2000 when 26.6% identified it. Violence and crime were recognized mostly as health risks by the richest (40.2%) and urban populations (32.4%).

Figure 19. Adult population who spend their free time in an active manner; by intensity of the exercise, Serbia, 2006



## Smoking

In 2006 in Serbia 33.6% of the population were smokers (regular or occasional), suggesting a reduction of the smoking rate by 6.9% in comparison with 2000. Although the reduced number of smokers was higher among men, the habit was still more prevalent among them (38.1%) than among women (29.9%) (Figure 20).

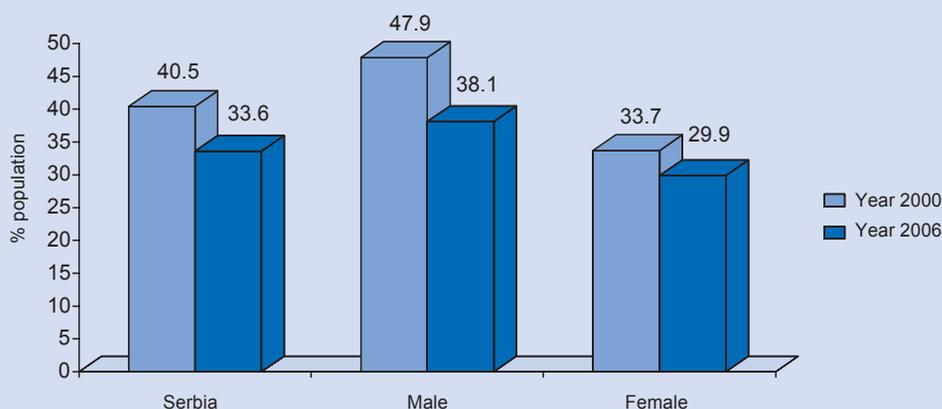
In 2006 in Serbia 27.7% of adults, or almost one in four women (23.7%) together with one in three men (32.5%) smoked on a daily basis. In Vojvodina the number of smokers was significantly higher, both the

overall number (37.5%) and in the group of those that smoked every day (30.7%) (Figure 21). The same applied to urban settlements where the number of smokers was higher than in other types of settlements.

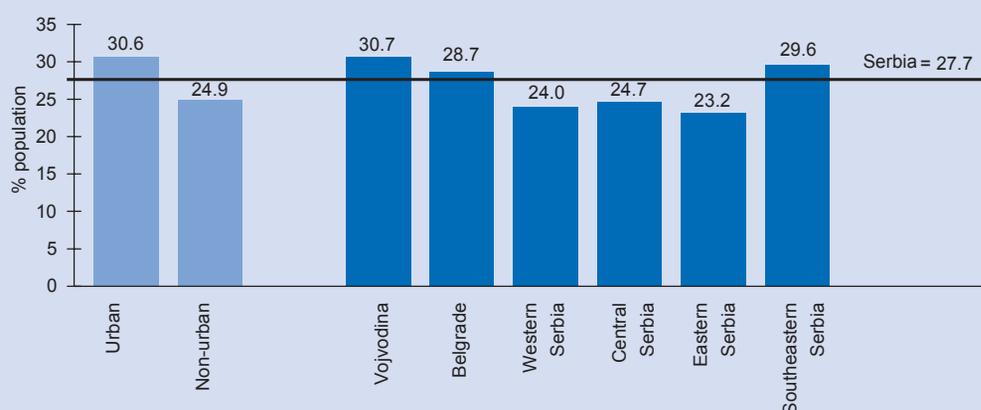
In 2006, out of the total number of people that smoked daily, 66.8% smoked more than 20 cigarettes a day, while the history of smoking of those that smoked every day was 18.8 years on the average.

In 2006 almost two thirds of the population of Serbia (61.7%) was exposed to tobacco smoke at home and 44.9% were exposed to tobacco smoke at work, significantly more in Vojvodina and Western Serbia.

**Figure 20.** Smoking prevalence among adults, by gender; Serbia



**Figure 21.** Adult population – regular (daily) smokers by the type of settlement and geographical regions, Serbia, 2006



In 2006 57.5% of the population of Serbia was aware of the noxious effects of smoking, i.e. tobacco smoke, which was an outstanding improvement over 2000, when only 34.6% knew that.

### Alcohol consumption

In 2006 in Serbia 40.3% of the population drank alcohol (occasionally or daily), where the number of non-consumers of alcohol increased by 5% in comparison with 2000. The 3.4% of the adult population of Serbia drank alcohol on a daily basis. Most commonly they drank strong spirits, which are followed by beer and wine. The greatest percentage of regular alcohol consumers is recorded in the age group of the elderly (75+ yrs), in Eastern Serbia and among the poorest (Figure 22).

In 2006 in Serbia the average number of weekly alcoholic drinks amounted to 6.4 which was significantly less than in 2000 when it was 8.3. On the average, men drank four times more than women (8.5 vs. 2.0 drinks per week).

In 2006 somewhat less than 3% of women were classified as being at medium risk (daily consumption of more than 20gr ethanol) for the development of chronic illnesses resulting from excessive

consumption of alcohol. Conversely, 8.7% of men were classified in the same group (daily consumption of more than 40gr ethanol).

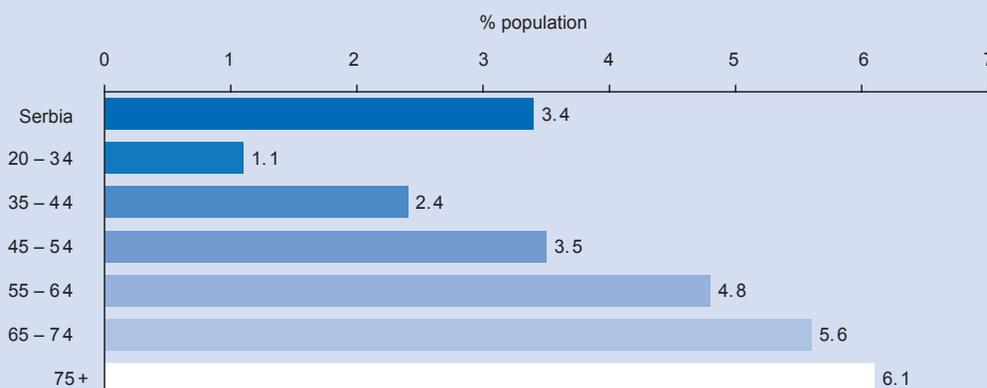
The percentage of adults who drink over 50gr ethanol daily is an indicator of heavy drinking. In 2006 the group at high risk for development of chronic illnesses resulting from excessive use of alcohol comprised 3.9% of adult population of Serbia. In Eastern Serbia a higher percentage of population belonged to this group (7.6%) and the same was recorded in the group of the poorest (6.1%).

### Use of psychoactive substances

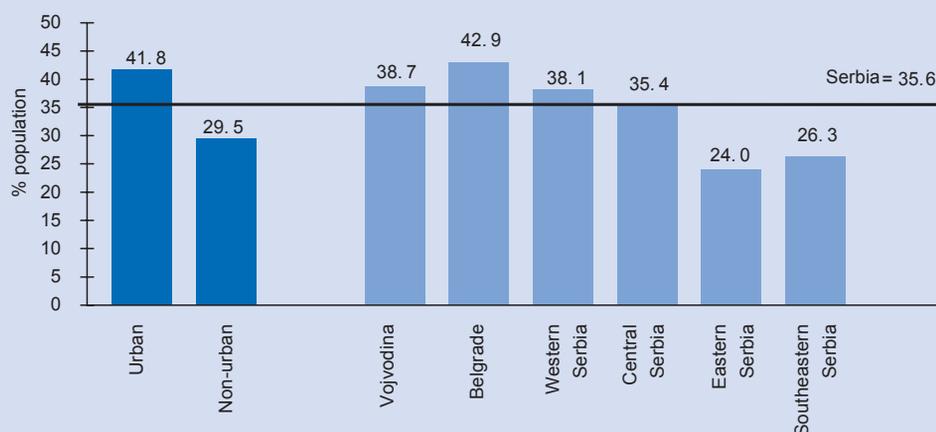
In 2006 in Serbia 35.6% of adult population were familiar with the effects of psychoactive substances (they knew that cannabis, ecstasy, cocaine, LSD, heroin and crack were always harmful), which is 7% more than in 2000. A significantly lower percentage of adults familiar with the effects of psychoactive drugs was recorded in Eastern (24.0%) and Southeastern Serbia (26.3%), as well as in populations living in non-urban settlements (29.5%) (Figure 23).

Also, the percent of properly informed people on the effects of psychoactive substances was lower among the poor and uneducated groups (Figure 24).

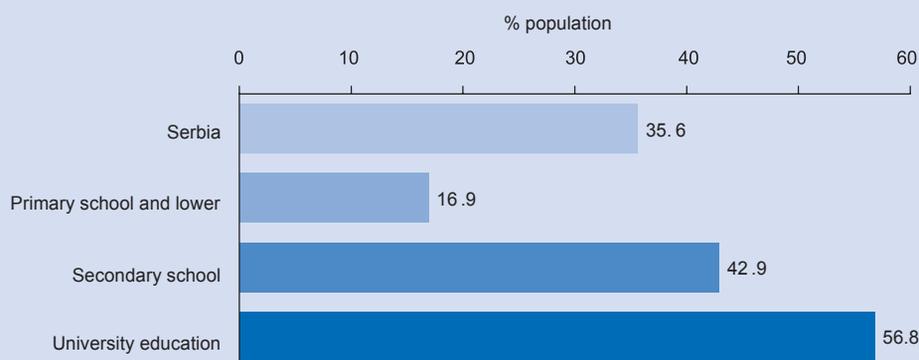
Figure 22. Adults using alcohol on a daily basis, by age groups, Serbia, 2006



**Figure 23.** Adults familiar with effects of psychoactive substances by the type of settlement and geographical regions, Serbia, 2006



**Figure 24.** Adults familiar with effects of psychoactive substances by educational level, Serbia, 2006



The questions relating to the use of certain psychoactive substances were associated with very low response rate, substantiating the impression that in this area specially designed studies should be conducted.

## Sexual behavior

In the course of the 12 months preceding the 2006 survey, 7.6% adults in the population of Serbia had sexual relations with a non-regular partner (defined as a partner to whom they are neither married nor living

with). Men and the population in the age group 20 to 34 years had significantly more sexual relations with non-regular partners (12.4% and 16.3%, respectively); a significantly lower percentage of sexual relations with non-regular partners was recorded in women (3.6%) (Figure 25). The average number of casual partners was 2.4.

Out of the total population of Serbia who had sexual relations with non-regular partners in the 12 months preceding the 2006 survey, only 51.6% used a condom

for the latest intercourse. The use of condom for intercourse with non-regular partners was more prevalent in the population aged 20 to 34 (66.1%) and among those classified as rich (63.4%), and less so among the population in the 45+ ages group and the poor (39.3%) (Figure 26).

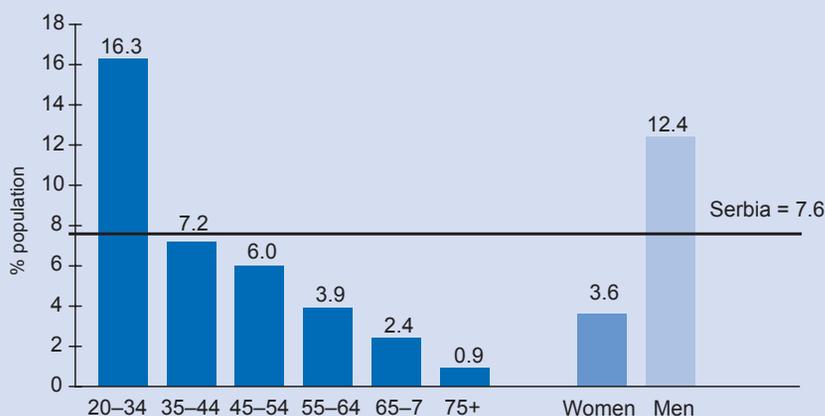
In 2006 out of the total number of women of childbearing age with a steady partner 37.3% used proper birth control (contraceptive pill, intra uterine device, local chemicals, condom, diaphragm), while 36.9% used unreliable methods of birth control (unfertile days, interrupted coitus).

## HIV/AIDS

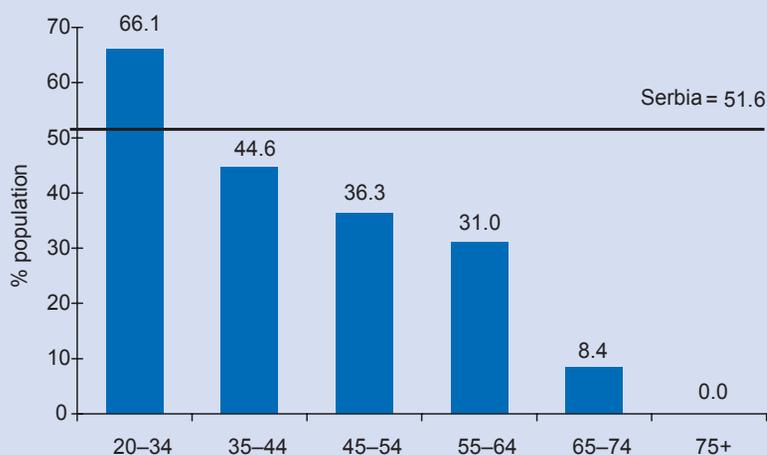
In 2006 in Serbia 90.5% were aware of HIV and AIDS, significantly more in urban settlements (93.9%) than in the others (87.1%). The level of information about HIV and AIDS was the highest in Belgrade (94.8%), and significantly lower in Western (87.7%) and Southeastern Serbia (87.9%).

In 2006 somewhat more than a third of the population of Serbia (37.9%) knew where they could get tested for HIV. Knowledge of the testing site was more

**Figure 25.** Adults having had sexual relations with non-regular partners in the 12 months preceding the survey, by age group and gender, Serbia, 2006



**Figure 26.** Adults using a condom with non-regular partners, by the age groups, Serbia, 2006



prevalent in women (40.1%) and less in men (35.1%). In Serbia 4.2% of adults have been tested for HIV.

Less knowledge in relation to prevention of HIV infection, and more prejudices against the infected persons were registered in Western Serbia, the population of non-urban settlements, the poor and uneducated groups. Nevertheless, in Serbia in 2006, in comparison with 2000 the increased tolerance, i.e. lack of prejudices against HIV infected people was registered in 35-45 age-group, from 13.7% to 18.9%.

In 2006 Central Serbia registered the sharpest rise in the number of people in this age group that were free of prejudices (no discrimination), 29.2%.

In 2006 somewhat more than one fifth of the young (20.3%) in Serbia aged 15 to 24 had sufficient knowledge on HIV and AIDS, i.e. identified correctly ways to prevent sexual transmission and at the same time denied misconceptions relating to transmission of HIV, their number having trebled in comparison with 2000 (7.3%).

## REPRODUCTIVE HEALTH OF WOMEN

According to the 2006 survey, the average age of women in Serbia at their first visit to a gynecologist was 21.3 years, while 6.3% have never visited a gynecologist. The percentage of those that have never been to a gynecologist was significantly higher in Southeastern Serbia (9.1%), in non-urban settlements (7.9%), the poorest households (12.4%) and those with the lowest education level (8.4%) (Figure 27).

In the year that preceded the 2006 survey 45.8% of women of child-bearing age visited a gynecologist, which was substantially less than in 2000 when 49.8% of them did so. The average number of visits of women of child-bearing age using gynecological care was 2.6. The most common reasons for visits to a gynecologist were check-ups (45.4%), followed

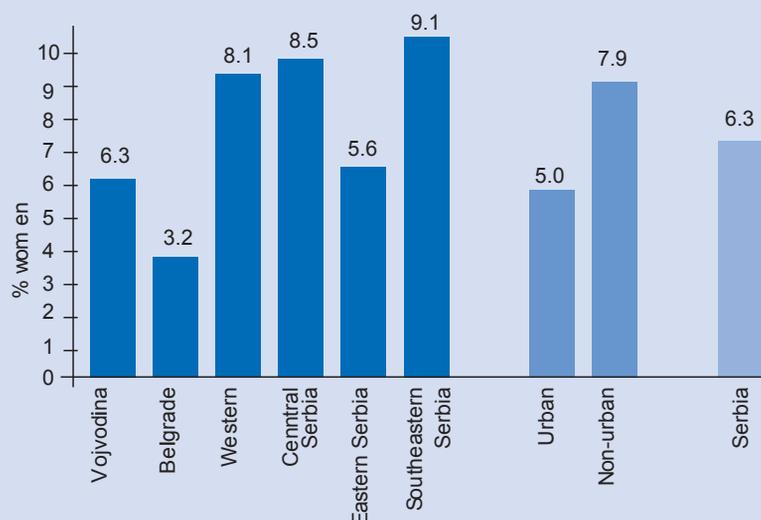
by pregnancy (30.2%) and complaints (18.8%).

One in eight women in Serbia aged 15–24 years was pregnant (15.9%). Out of these 3.9% terminated the last pregnancy intentionally. The percentage of women aged 15–24 years that were pregnant was significantly higher in the poorest households (30.7%) and non-urban settlements (23.3%).

Out of the total number of women in Serbia who gave birth in the year preceding the 2006 survey 77.4% received a home visit from a health worker in the first post-delivery week, which was significantly more than in 2000 when only 45.6% received such visit.

The 2006 survey in Serbia has shown that one in three women (34.1%) performs a self-examination of the breast once a month, while one in ten of those

**Figure 27.** Women above the age of 20 who have never visited a gynecologist, by the geographical region and type of settlement, Serbia, 2006



in the 40–69 age group (10.4%) had a mammography in three years preceding the study. The percentage of women in the 40–69 age group who had a mammography was significantly higher in Belgrade (16.6%) and in urban settlements (13.2%) than in non-urban settlements (6.8%).

In Serbia 30.5% women over the age of 20 had a Papanicolaou smear (for detection of cervical cancer) in the three years preceding the 2006 study, while 2.0% of women had the test done within an organized preventive screening, significantly more in Eastern Serbia (5.2%).

---

## USE OF HEALTH SERVICES – ADULT POPULATION

---

### Primary Health Care (PHC)

In 2006 every other citizen of Serbia (50.6%), had their own GP or occupational medicine specialist, which was significantly more than in 2000 (43.4%).

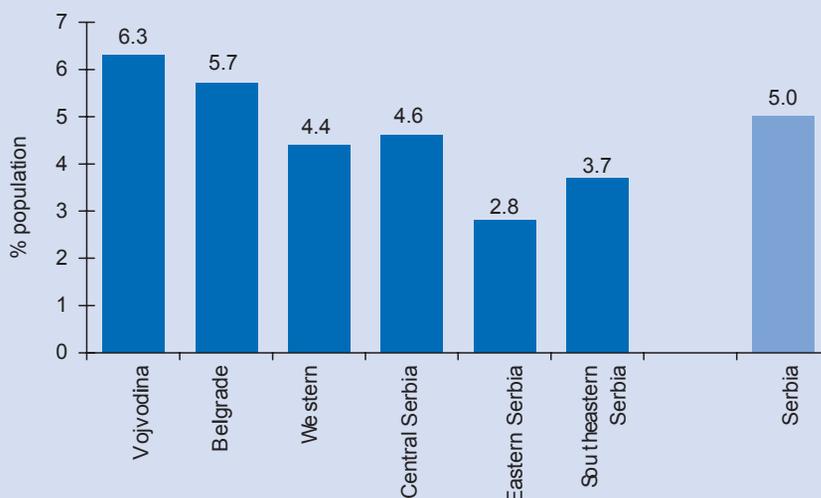
In the year preceding the 2006 survey, over half of the population visited a GP (54.2%) which was on the 2000 level. Specialist services of primary health care centers were used by 29.7% of the population, significantly less than in 2000 when 31.9% of adults visited specialists. In 2006 users of the abovementioned forms of health care visited their GP 5.6 times and a doctor in the specialist services 3.3 times. These services were used mostly in Southeastern and Eastern Serbia. The use of health care services in 2006 linked with the average number of visits per user remained at the same level as it was in 2000.

The percentage of adults who waited for diagnostic examinations in the primary health care services for over a month was 5.0% in 2006 which was more than in 2000 when it was 3.8%. The population of Eastern Serbia waited for these examinations significantly less than the average of Serbian population (2.8%) (Figure 28).

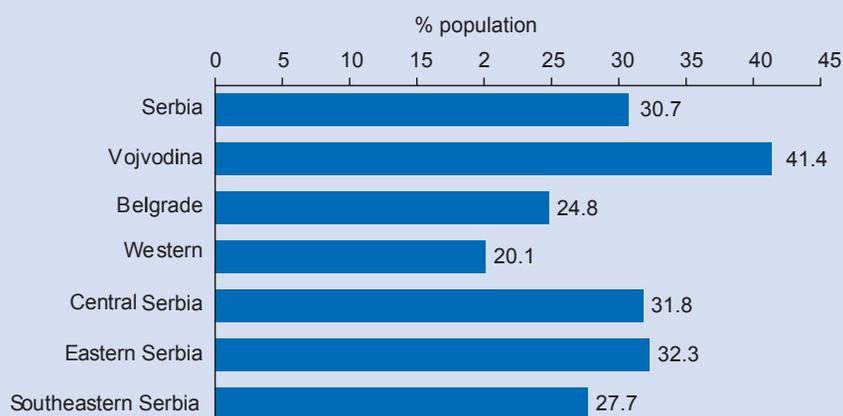
The percentage of adults waiting for specialist examinations over a month was longer in 2006 (6.4%) than in 2000 (4.4%). Significantly fewer inhabitants of Central (3.8%) and Southeastern Serbia (2.8%) waited for specialist examinations in PHC for over a month.

In 2006 less than a third of the Serbian population (30.7%) using specialist health care procured medication and medical consumables to provide

**Figure 28.** Adults who waited for diagnostic examination in primary health centers (PHC) over a month, by geographical regions, Serbia, 2006



**Figure 29.** Adult population that procured medication and medical consumables upon request, by the geographical regions, Serbia, 2006



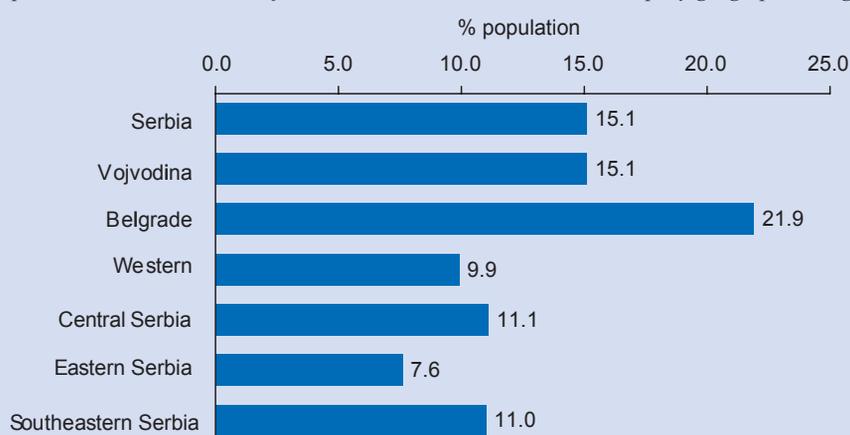
for their health care. The population of Vojvodina procured medication and medical consumables significantly more frequently (41.4%) than the population of Belgrade (24.8%) and Western Serbia (20.1%) (Figure 29).

In 2006 in Serbia payment of health care services was the main reason for 3.0% of the population not to use health care, which was significantly less than in 2000 when the corresponding percentage was 4.2%. Significantly more of the poorest (8.1%), those living in the Western (4.2%) and Southeastern Serbia (4.4%) did not use the health care services because of such payments.

## Dental health care

In 2006 34.8% of the population of Serbia had their own dentist, the number being the lowest among the poorest (14.3%), and the highest among the richest, (60.4%). The percentage of population visiting their dentist in the year preceding the 2006 survey (30.7%) was significantly lower than in 2000 (36.8%). For 15.1% of the Serbian population, the main reason for a visit to the dentist in 2006 was a check-up of dental health, which was a significantly higher percentage than in 2000, i.e. 8.6% (Figure 30). The population of Belgrade was most regular in their dental check-up visits (21.9%).

**Figure 30.** Adult population whose main reason for a visit to a dentist was dental check-up, by geographical regions, Serbia, 2006



In 2006 in Serbia 8.5% of adult population had all of their teeth, 9.3% were edentulous, while a quarter of the population (26.6%) did not have more than 10 teeth. The number of missing teeth increased with age, the lowest number of missing teeth was present among the population below 55 years of age, and the highest number among those above the age of 55 (Figure 31).

### Private practice

In 2006 a lower percentage of the population of Serbia used the private practice services (19.4%) than in 2000

(23.9%). These services were used significantly more by those in the 20-34 yr age group (24.5%), women (23.4%), and particularly those living in Belgrade (29.5%) as well as the richest (31.8%) (Figure 32).

Among the population of Serbia the most common reasons for opting for private practice included absence of waiting (66.5%), higher quality work (51.9%) and attitude/kindness (37.0%).

In 2006 absence of waiting was the most common reason for resorting to private practice—a substantially higher percentage than in 2000. The percentage of the

Figure 31. Missing teeth in adult population, by the age groups, Serbia, 2006

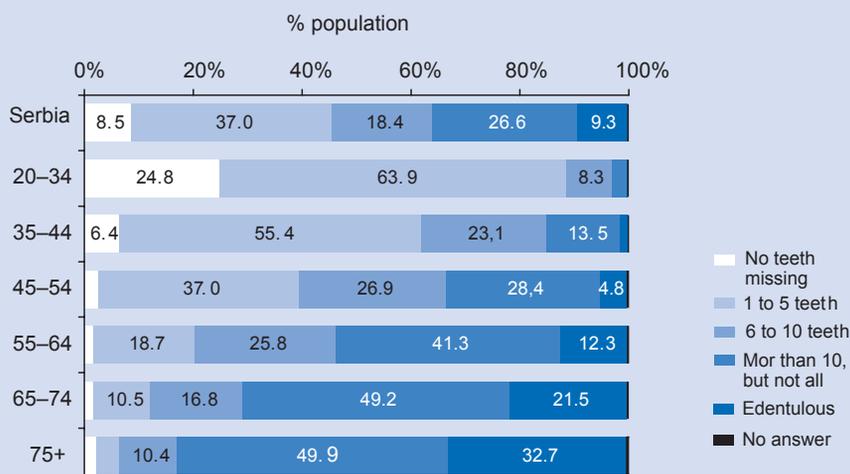
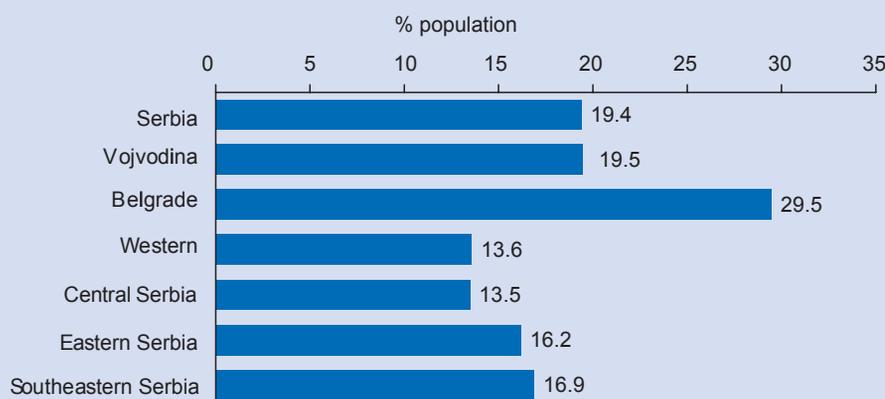
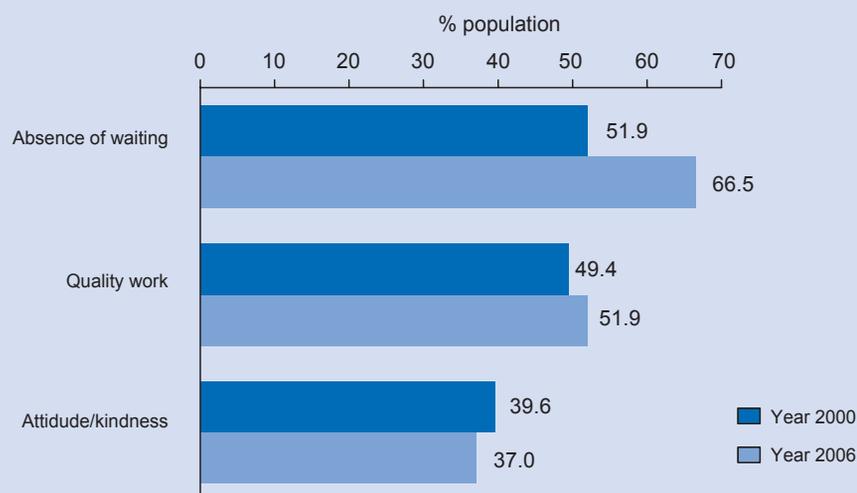


Figure 32. Adult population using the private practice health services by the geographical regions, Serbia, 2006



**Figure 33.** Adult population by the most common reasons for resorting to private practice, Serbia

population of Serbia that resorted to private practice for the better quality of their services and attitude did not change in comparison to 2000 (Figure 33).

## Hospital health care

In 2006 in Serbia 6.6% of adult population received hospital care in the year preceding the survey. The population receiving in-patient care had 1.3 hospitalizations on the average, which was comparable with the data in 2000 (1.7). The population over the age of 65 used these services more. Almost three quarters of all users (74.0%) was referred and admitted immediately, while 2.7% waited for over a month, significantly less in Central and Eastern Serbia. In 2006 the percentage of the population in Serbia waiting for hospitalization for over a month was the same as in 2000.

## Use of medication

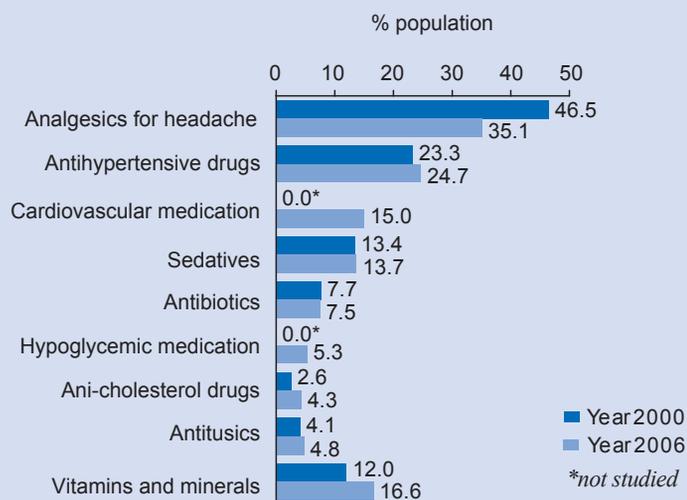
In 2006 in Serbia 29.1% of adult population used self-medication. Women resorted to self-medication more than men (33.5% and 25.1%, respectively). The population aged 55+ and those living in Belgrade

tended to do this more (40.7%), than those living in Western (18.6%) and Central Serbia (23.1%). Analgesics (26.0%), vitamins and minerals (14.8%), antibiotics, and drugs for specific diseases (9.4%) were most commonly used in this manner. In comparison with 2000 the percentage of self-medication was reduced by 7.3% in 2006.

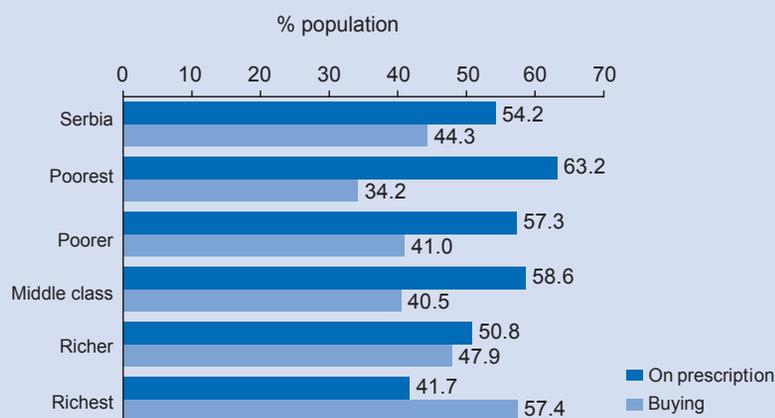
However, in comparison with 2000 the percentage of population using anti-cholesterol drugs in the week preceding the 2006 survey was significantly increased: from 2.6% to 4.3%. The same applied to vitamins and minerals, from 12.0% to 16.6% (Figure 34).

In 2006 54.2% of the population of Serbia who used medication obtained them mostly by prescription, which was significantly more than in 2000 when the corresponding percentage was 39.4%. The poorest used prescriptions the most (63.2%). 44.3% of the population most commonly bought the drugs, significantly more by those that were classified as the richer (47.9%) and richest (57.4%) by the wealth index (Figure 35). In comparison with 2000 the share of population buying their medication in 2006 was reduced by 12.8%. Also, the percentage of those

**Figure 34.** Use of drugs in the adult population of Serbia



**Figure 35.** Most common ways of obtaining drugs in the adult population by the wealth index, Serbia, 2006



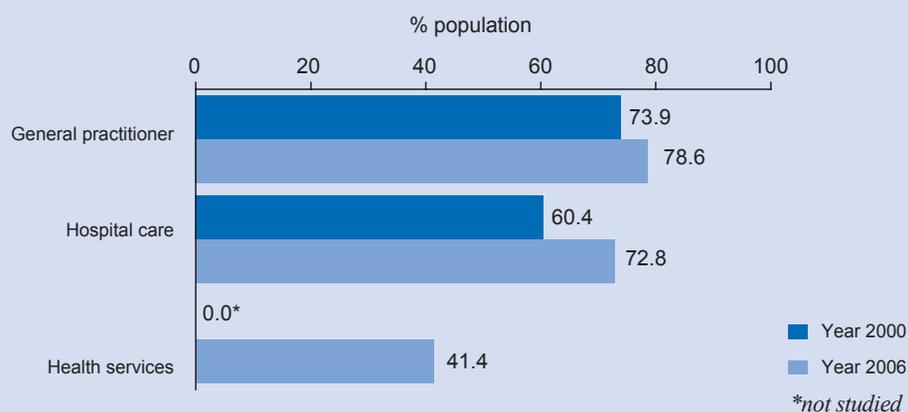
who did not take medication because of the price was reduced from 1.2% in 2000 to 0.2% in 2006.

### Patient satisfaction with health care

In 2006 in Serbia a high percentage of health care users were satisfied with their GP (78.6%) and the hospital care in general (72.8%). The level of satisfaction was significantly improved from 2000 when 73.9% were satisfied with their GP and 60.4% with hospital care.

The population aged 65 to 74 led in their satisfaction with their GP (83.8%), together with those in Central (88.4%) and Southeastern Serbia (86.2%). The level of satisfaction was the lowest among the population of Belgrade (71.7%), 20-34 yr age group (72.5%) and the richest (74.9%). The share of those satisfied with hospital care has significantly increased, from 20.9% in 2000 to 33.2% in 2006, while the satisfaction with health care workers in hospitals (63.2%) remained the same as in 2000.

**Figure 36.** Satisfaction of adult population with their GP, hospital care and overall health services, Serbia



In 2006 in Serbia 41.4% of the population were satisfied with overall health services. The percentage was highest among women (44.9%), those over 55 yrs of

age, living in Central Serbia (49.4%), and it was lowest among the men, population of Vojvodina (36.0%) and those defined as the richest (38.3%) (Figure 36).

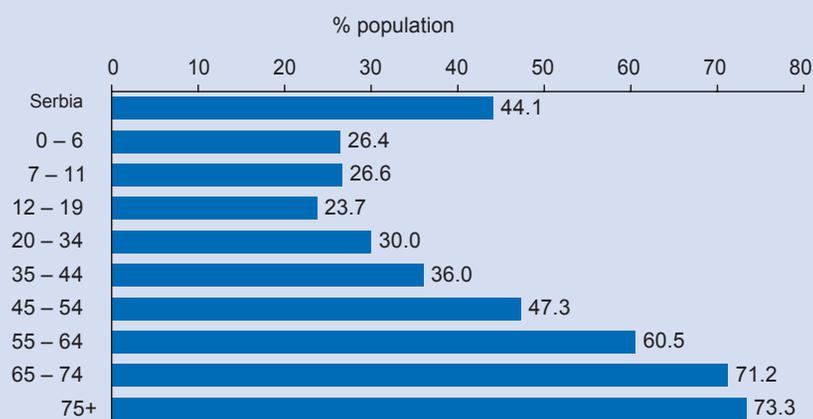
## HEALTH CARE PAYMENTS

In the 12 months preceding the 2006 survey in Serbia, 44.1% of the total population had expenditures for health care, almost a half of women (48.0%) and two fifths of men (40.5%), as well as over 70.0% of the population over 65 yrs of age (Figure 37). By the geographical regions, the population in Southeastern Serbia covered most of the expenses “out of pocket”

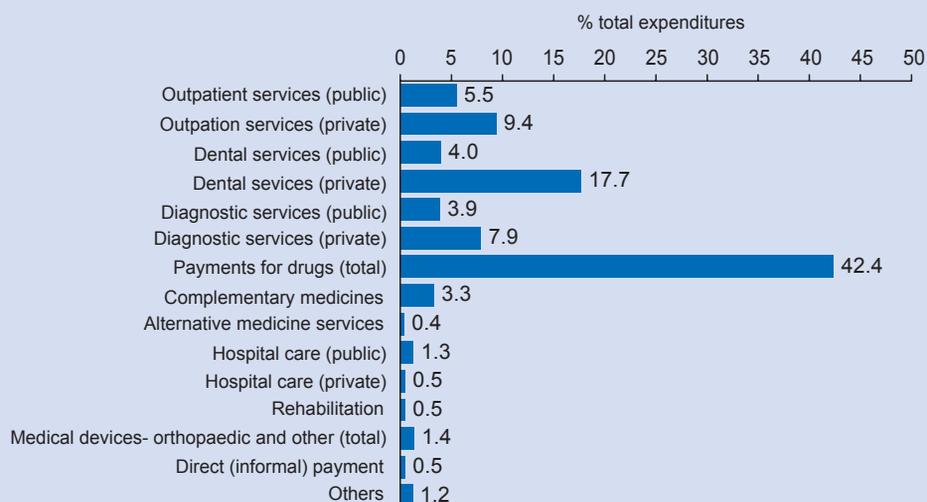
(50.5%). Those in Central (34.9%) and Western Serbia (35.5%) did so the least.

The average total annual amount of “out of pocket” payments for health care was RSD 14,696.7 per capita. Over two fifths of the health care payments are for medication (Figure 38).

**Figure 37.** Population paying health care “out of pocket” by age groups, Serbia, 2006



**Figure 38.** Share of certain types of expenditures in the total health care expenditures, Serbia, 2006



---

## HEALTH STATUS OF CHILDREN AND ADOLESCENTS AGED 7–19 YEARS

---

### Self assessment of health and satisfaction with life

In 2006, almost all children and adolescents in Serbia (92.3%) defined their health as good or very good (Figure 39).

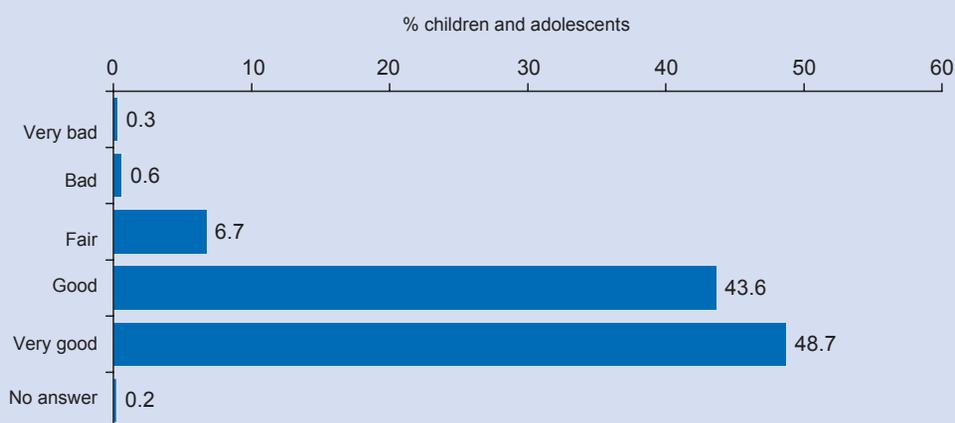
Relatively few considered themselves obese (7.5%) or underweight (14.0%). Only one third of children and adolescents (31.7%) evaluated their level of exercise as good, 20.9% described it as average, and 3.9% described it as poor or very poor. The young from Central (21.3%) and Southeastern Serbia (24.3%) defined their level of physical exercise as very good significantly less than the young in Belgrade (49.2%). Children and adolescents from the poorest households were prone to define their level of physical activity positively much less (22.5%).

Correct, i.e. desirable attitude on responsibility for one's own health was reported by only a quarter of the population of children and adolescents in Serbia (25.3%) (Figure 40). Nevertheless, health was on the top of their list of life values. The average satisfaction with life of the young (1-10 scale) reached 8.2 in 2006, which was an increase in comparison with the significantly lower rank of 6.4 recorded in 2000. The young were mostly dissatisfied with lack of money (33.5%) – significantly more so in Southeastern Serbia (45.8%) and those from the poorest households (51.2%).

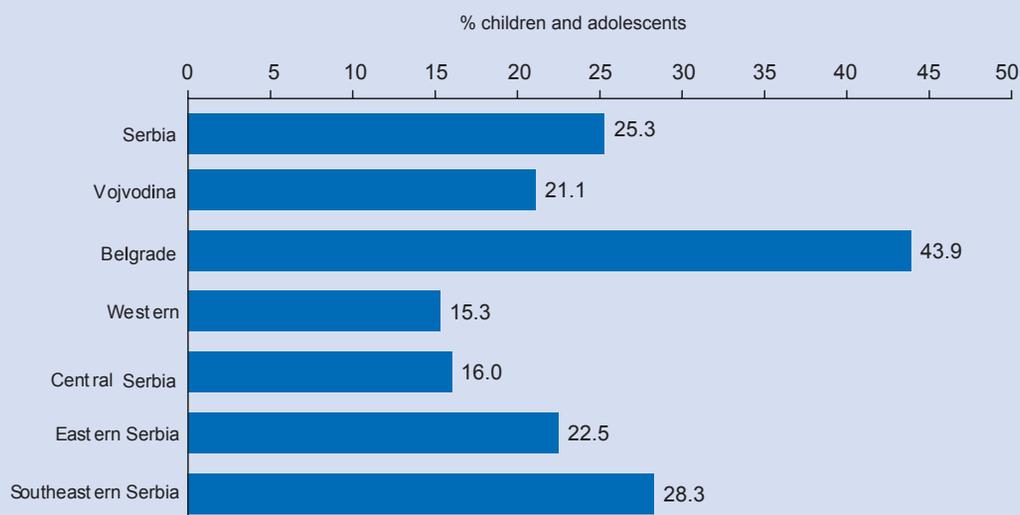
### Blood pressure

The average value of the measured systolic blood and diastolic pressures in children and adolescents

*Figure 39. Self-assessment of general health status of children and adolescents aged 7–19 years, Serbia, 2006*



**Figure 40.** Children and adolescents aged 7–19 sharing the desirable attitude on responsibility for own health, by the geographical regions, Serbia, 2006



in Serbia in 2006 were 111.3 mmHg and 69.3 mmHg, respectively. No significant differences were identified by gender, age, geographical regions and social-economic status for either of the parameters. The obtained values were comparable with those recorded in 2000: where the average systolic and diastolic pressures were 111.1mmHg and 70,9 mmHg, respectively.

### Nutritional status

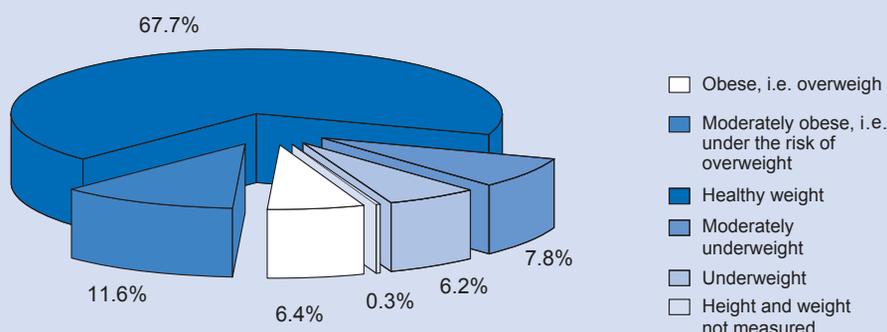
In 2006 two thirds of children and adolescents aged 7–19 in Serbia had a healthy weight (67.7%) (Figure 41). Almost one fifth of the young (18.0%) were moderately obese, i.e. under the risk of overweight (11.6%) and obese, i.e. overweight (6.4%) which is an increase in comparison with 2000 when there were 8.2% and 4.4% of moderately obese and obese, respectively. Among children aged 7 to 11 in 2006 there were significantly more obese (9.8%) in comparison with the total population of the young. In 2006 there were 6.2% of

underweight children, which was an improvement in comparison with 2000 (8.4%).

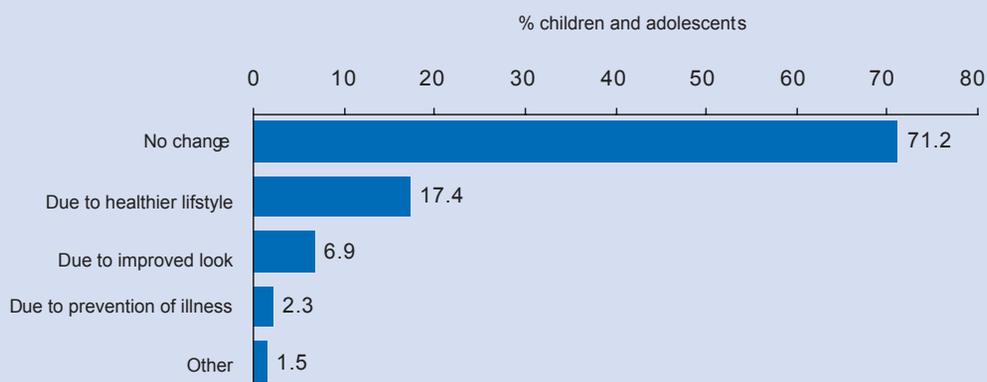
### Information and counseling relating to risks of chronic non-communicable diseases

In 2006 almost a half of children and adolescents aged 7 to 19 in Serbia (47.9%) were advised to change their lifestyle. The young in Central Serbia received advice to change the lifestyle less commonly (39.1%) than their Belgrade counterparts (54.7%). Advice to change the lifestyle was given by a physician or a health worker only to 9.0% of the young. In the course of 12 months preceding the survey only one third of the young (34.6%) changed their behavior health-wise, significantly less so among the children and adolescents in non-urban areas (29.0%) and central Serbia (26.2%). The most common reasons for the change of lifestyle health-wise included healthier life, improved looks and prevention of diseases (Figure 42).

**Figure 41.** Children and adolescents aged 7-19 by the nutritional status, Serbia, 2006



**Figure 42.** Change of attitude to health, children and adolescents aged 7-19, Serbia, 2006



The young population usually received health information from parents (75.1%) and media messages (53.3%). The 13.5% of children and adolescents participated in some form of health promotion activities. Evaluating three leading causes of disease in the population, most of the young recognized smoking (62.6%), difficult living conditions (39.4%) and stress (38.7%).

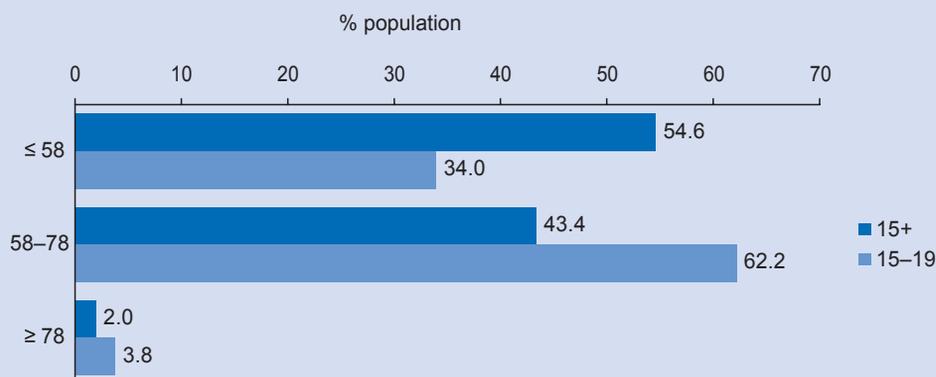
## Mental health

In 2006 almost one fifth of children and adolescents (18.0%) experienced tension and stress in the month preceding the survey. The number of children with these symptoms was significantly lower (7.0%)

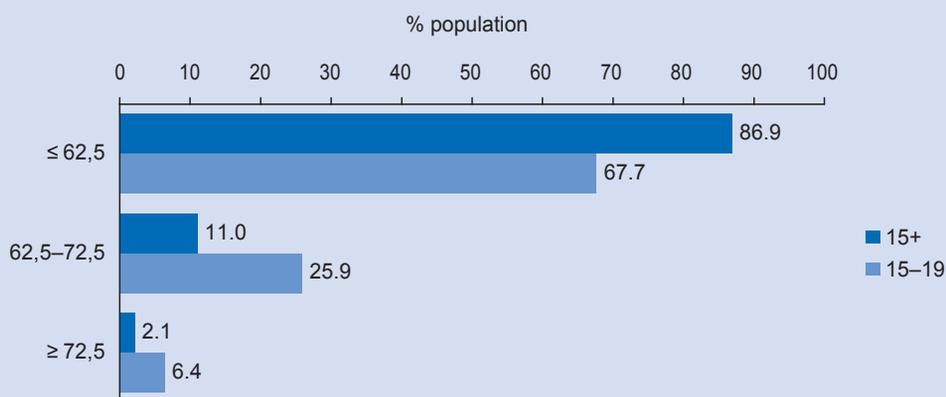
in comparison to the 15-19 yr age group (30.5%). Referring to emotional problems, 16.5% of the young confirmed having them in the month preceding the survey, again significantly less in the younger group, aged 7 to 11 yrs (8.8%), than in the older group (23.3%). Importantly, in 2006 the percentage of the young experiencing tension and stress, as well as emotional problems was reduced in comparison with 2000 (22.1%, and 24.7%, respectively).

Based on the score of the psychological distress scale (0 to 100) suggesting the frequency of nervousness, depression, sadness, exhaustion and tiredness, in the 4 weeks preceding the survey these negative

**Figure 43.** The psychological distress scale for children and adolescents aged 15–19 and the population over the age of 15, Serbia, 2006



**Figure 44.** The vitality scale in children and adolescents aged 15–19 and the population over the age of 15, Serbia, 2006



feelings and emotions were present (score  $\leq 58$ ) in almost every other citizen of Serbia above the age of 15 (54.6%) and one in three adolescents aged 15–19 (34.0%) (Figure 43).

The long-term presence of psychological distress in the population over the age of 15 was also suggested by the average score on the psychological distress scale, which reached 55.2 in 2006. Among the young aged 15 to 19 the value of the score was significantly higher, i.e. 61.0 suggesting that the negative states and emotions were present less in this population.

Positive states and emotions (enthusiasm, serenity, calmness, happiness, energy) whose frequency in the four weeks preceding the 2006 survey was estimated on the basis of the vitality scale (0 to 100) score have been registered as a long-term state (score  $\geq 72,5$ ) only in 2.1% percent of the Serbian population over the age of 15 and in 6.4% adolescents aged 15–19 years (Figure 44).

Short-term presence of positive states and feelings (score 62.5) in these population groups are suggested by the average score values of 45.0 in those aged 15+, and 54.9 in the young aged 15 to 19.

# LIFESTYLE, KNOWLEDGE AND ATTITUDES TO HEALTH IN CHILDREN AND ADOLESCENTS AGED 7–19 YEARS

## Hygienic habits

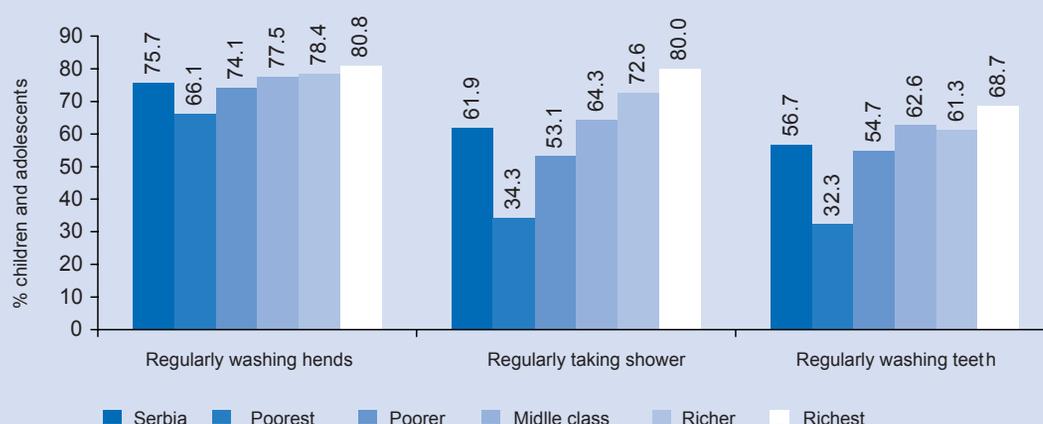
Hygienic habits in children aged 7–19 years in Serbia have changed significantly in 2006 as compared to 2000. In 2006 75.7% children and adolescents regularly washed their hands, which was an improvement over 2000 (63.8%). This was most regularly practiced by children and adolescents in Western and Southeastern Serbia, by adolescents aged 15–19 (80.6%) and the young classified as the richest by the wealth index (80.8%) (Figure 45). In 2006, however, regular bathing or showering and tooth brushing was reduced in comparison with 2000. Children and adolescents in Vojvodina, those aged 15 – 19, and those classified as the richest pursued hygienic habits most regularly, while only one third of the poorest had a shower or a bath more than three times a week.

In 2006 56.7% of children and adolescents brushed their teeth more than once a day. The girls led (66.8%), followed by children and adolescents aged 15 to 19 (66.3%) and the richest, while the lowest percentage was recorded among the poorest (32.3%) (Figure 45).

## Diet

In 2006 in Serbia 87.3% of children and adolescents aged 7 to 19 had breakfast every day, while 74.4% had three meals a day every day, which was comparable to the results obtained in 2000. In 2006, however, significantly fewer young people had at least one glass of milk or dairy products (57.3%) in comparison with 2000 (62.0%). Over a half of children and adolescents (51.6%) ate fresh fruits every day.

**Figure 45.** Children and adolescents aged 7-19 who maintain their hygiene regularly, by the wealth index, Serbia, 2006



In 2006 about a half of the young (48.9%) had fresh vegetables in their daily diet, which was significantly more than in 2000 (46.3%). In Serbia over half of children and adolescents aged 7 to 19 (52.8%) ate fish less than once a week.

In 2006 the percentage of children and adolescents who never think of their health when they chose what to eat was 36.7% - a significant improvement in comparison with 2000 when it was only 22.0%.

### Leisure, exercise and sports

Children and adolescents in Serbia used their free time mostly to watch TV, CDs or video cassettes (73.3%) or listen to music (61.9%). In relation to 2000 there was a significant increase in the percentage of those who watch TV, CDs or video cassettes (from 58.8% to 73.3%), play computer games (from 9.7% to 28.2%) and listen to music (from 38.3% to 61.9%).

In 2006 in the age group 7–14 years 45.7%, and in the age group 15–19 years 46.0% of the population spent at least 2 hours a week in strenuous physical exercise, out of school. The percentages were significantly higher for boys. The percentage of children spending at least 2 hours a week in strenuous physical exercise increased with the wealth index.

Also, 8.0% of children and adolescents had less than 7 hours of sleep on weekdays, which remained the same as in 2000. In the population of secondary school age as many as 16.2% of the children had less than 7 hours of sleep during weekdays.

### Behavior in traffic

Over 70% of children and adolescents aged 7–19 in Serbia used car seat belts when driving or sitting in the front seat. Of those that used rollerblades or skateboards, 86.5%, did not use protective helmet on a regular basis. The same applies to 96.5% of the bicycle riders and 66.3% of motor bikers.

When participating in traffic as pedestrians 8.7% of the young admitted to crossing the street beyond the zebra crossing or when there was a red light.

### Awareness of health risks

In 2006 in Serbia 19.4% children and adolescents aged 7–19 recognized ultraviolet radiation as a health risk. This awareness was greatest in the 15-19 yr age group (25.9%), among the richest (25.0%) and children and adolescents in urban settlements (22.5%). In 2006 19.7% of the young recognized violence as a health risk, as compared to 27.5% recorded in 2000.

One fifth of the young (20.5%) were not satisfied with the level of hygiene in their schools in 2006. The young in Belgrade were dissatisfied most (32.8%). In 2006 safety and opportunity for recreation at school were evaluated as poor by 10.9%, and 16.0% of schoolchildren, respectively, which was an improvement over the corresponding data for 2000. (13.8% and 19.8%, respectively).

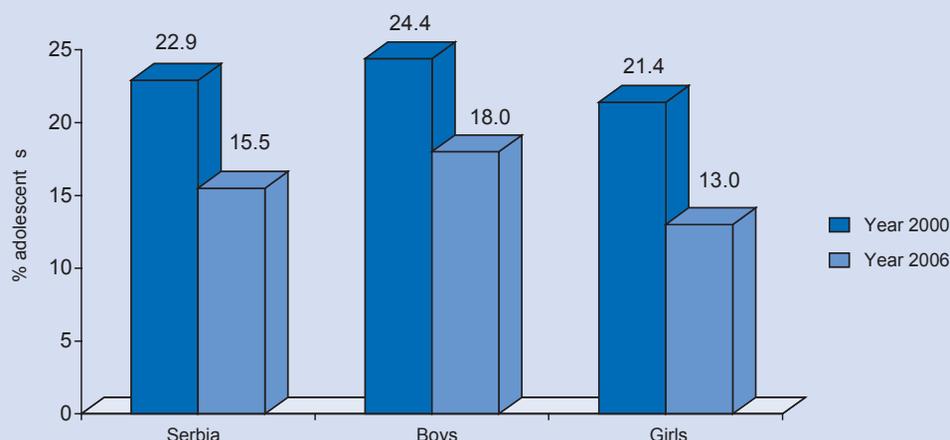
### Smoking

The prevalence of smoking among the young in Serbia aged 15–19 was 15.5% in 2006. The total number of smokers was reduced by 7.4% in comparison with 2000, more in girls (by 8.4%) than boys (by 6.4%) (Figure 46). Significantly lower smoking prevalence was found among the young in Eastern Serbia (5,9%).

In 2006 in Serbia one in ten adolescents aged 15–19 smoked (10.0%), while 4.2% of the young in Serbia smoked more than 20 cigarettes a day.

In 2006 70.8% of the young were exposed to tobacco smoke at home, which was 14.3% less than in 2000. On the other hand, the finding that 16.0% of the young were exposed to tobacco smoke indoors for more than 5 hours a day is a reason for serious concern, together with the fact that 89.3% of the young stated that at least one person in their immediate social environment was

**Figure 46.** Smoking prevalence among the young aged 15-19, by gender, Serbia



a smoker. Out of the total number of smokers aged 15–19 in Serbia, 34.6% wanted to quit in 2006. Half of the young of that age (50.5%) did not have a desirable attitude to smoking. Both of the indicators were similar in 2006 and 2000.

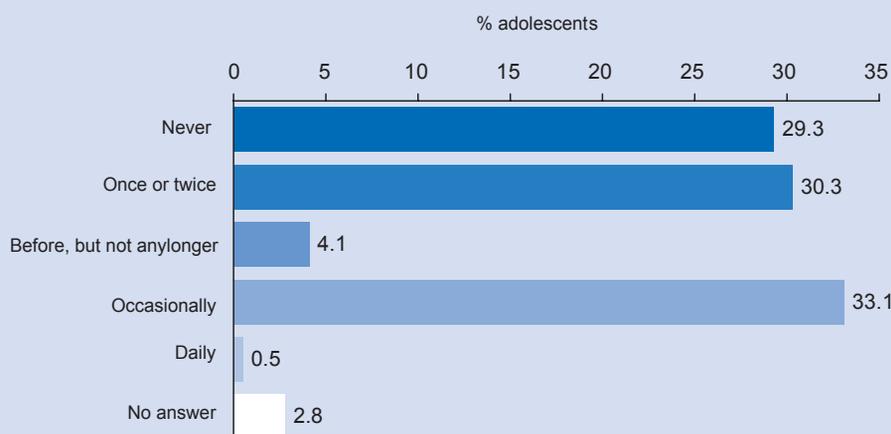
## Alcohol consumption

In 2006 in Serbia 33.6% of the young aged 15–19 used alcohol (Figure 47). The percentage of those that

were not consuming alcohol was significantly higher in Vojvodina (76.1%). The 2006 survey has found that 14.6 years was the average age of first exposure to alcohol in the group of 15–19 olds, where the average amount of weekly intake among those who use alcohol amounted to 4.7 drinks.

The habit of getting drunk at least once a month was reported by 5.5% of the young people in Serbia in 2006. This habit was significantly more common in

**Figure 47.** Alcohol consumption by the young aged 15-19 years, Serbia, 2006



boys (9.1%) than in girls (1.9%) aged 15–19. One in four children in Serbia (25.5%) aged 12–19 has been drunk at least once, almost one in three boys (31.8%) and one in five girls (19.5%). This phenomenon was significantly more common in children and adolescents living in households with incomes exceeding RSD 15,000 per household member (29.6%).

One third of children and adolescents in Serbia aged 12–19 know a person using alcohol in their immediate social circle. As many as 60.2% did not have desirable attitude to alcohol consumption. Sale of alcoholic beverages in public places in Serbia was still a problem in 2006. i.e. 10.5% of children and adolescents below the age of 18 purchased alcohol in supermarkets, cafes, restaurants, etc.

### Use of psychoactive substances

In 2006 35.0% of the young in Serbia aged 15–19 were aware of the effects of psychoactive substance use (they knew that cannabis, ecstasy, cocaine, LSD, heroin and crack were always harmful). Out of the total number of the young, 15.2% stated that drugs had been offered to them, while 21.5% stated that some of their friends used drugs.

In Serbia 6.9% of the young aged 15–19 tried psychoactive substances. A significantly higher percentage of those who tried drugs was recorded in households with income in the excess of RSD 15,000 per household member (22.7%).

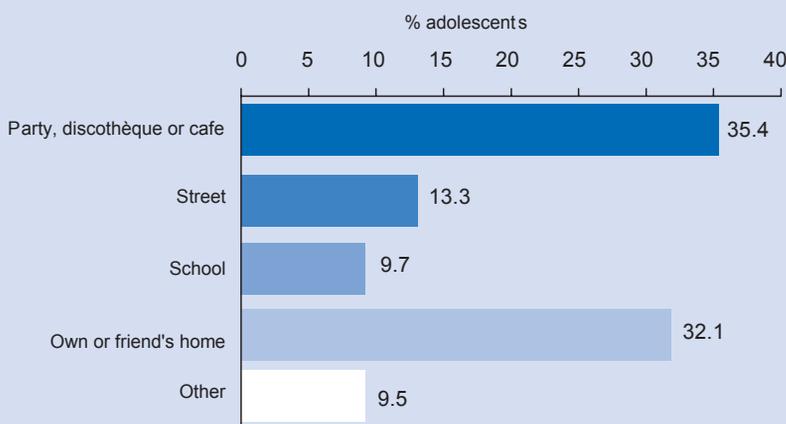
The 2006 survey in Serbia suggest that the young aged 15–19 tend to try psychoactive substances (for the first time) between the ages of 13 and 17. The places most commonly given as where they take it for the first time are a party, discothèque or cafe (35.4%), home, own or friend’s (32.1%). Almost one in ten tried a psychoactive substance at school first (Figure 48).

In Serbia 32.0% of the young aged 15–19 in 2006 did not have desirable attitude to psychoactive substances.

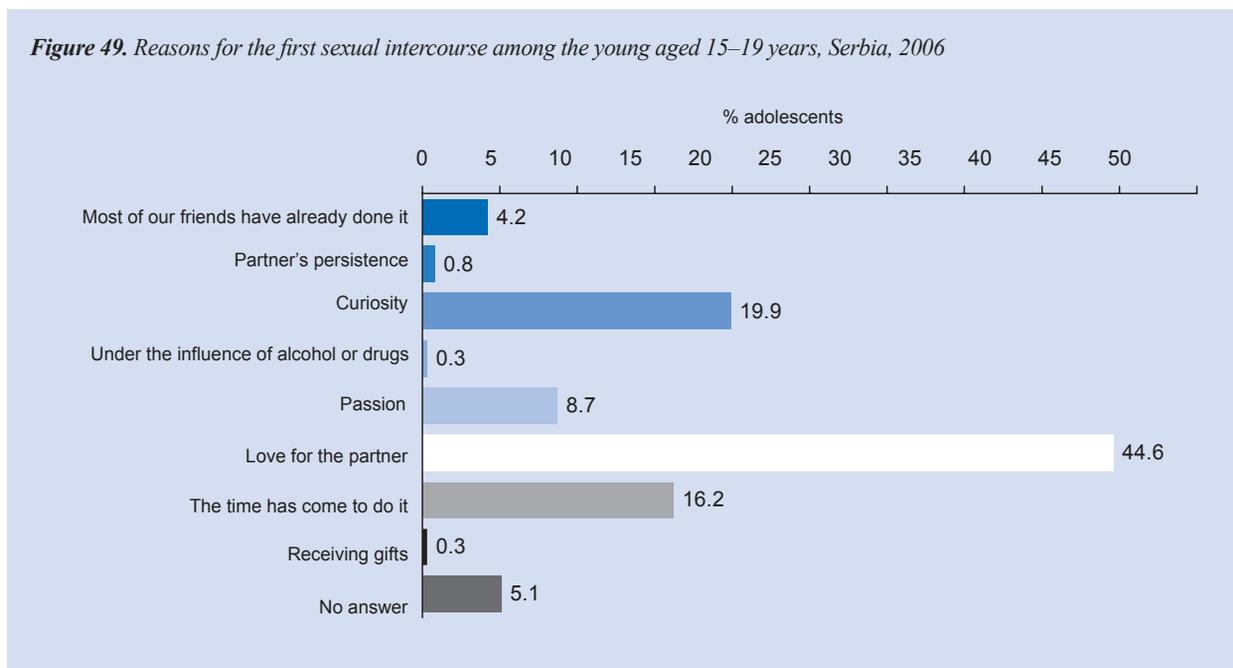
### Sexual behavior and awareness of HIV and AIDS

According to the 2006 survey 29.0% of the young in Serbia aged 15–19 have already become sexually active. The number is significantly higher for boys (36.3%), than for girls (21.8%). In comparison with 2000 an increase of 10.4% was recorded in the sexually active compared with 2006.

**Figure 48.** Place of initial exposure to a psychoactive substance among the young aged 15–19 years, Serbia, 2006



**Figure 49.** Reasons for the first sexual intercourse among the young aged 15–19 years, Serbia, 2006



A significantly higher percentage of sexual activity was recorded in Belgrade (38.5%), and the young living in households with income in the excess of RSD 15,000 per household member (51.5%). The young in Serbia aged 15–19 have their first sexual intercourse at the age of 16, where love for the partner (44.6%) and curiosity (19.9%) are the most commonly offered reasons for doing so (Figure 49).

Out of the total number of the young aged 15-19 who had sex with casual partners in the year preceding the 2006 study, 78.4% used condom at the latest intercourse. The average number of casual partners in this population was 2.6.

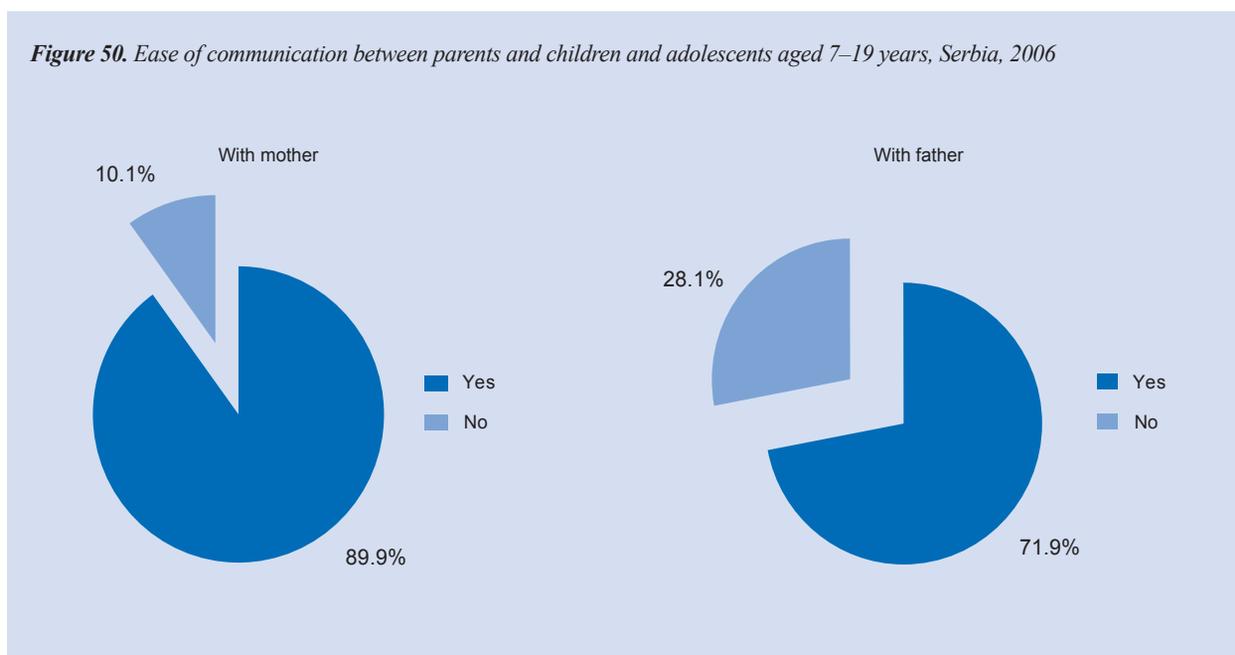
One third of the young in Serbia (33.6%) aged 15–19 who were sexually active in the 12 months preceding the survey used unreliable methods of birth control (unfertile days, interrupted coitus).

In 2006 90.4% of the young aged 15–19 were aware of HIV and corresponding disease, i.e. AIDS.

In 2006, 17.8% of the young had sufficient knowledge on HIV/AIDS so that they were able to identify ways of prevention of sexual transmission and at the same time recognized misconceptions related to HIV transmission which was an 11.1% improvement over 2000 .

## RELATIONS OF CHILDREN AND ADOLESCENTS AGED 7-19 WITH PARENTS AND ATTITUDE TO SCHOOL

**Figure 50.** Ease of communication between parents and children and adolescents aged 7–19 years, Serbia, 2006



Almost all children and adolescents aged 7–19 years in Serbia (89.9%) could easily discuss their problems with their mothers. 71.9% of the young could communicate with the fathers, as well (Figure 50). Younger children had better communications with both mother (93.9%) and father (79.4%) than the older ones. In 2006 the percentage of children who found it easy to discuss their problems with both mother (89.9%) and father (71.9%) was increased in comparison with 2000 (88.3% and 66.5%, respectively). 3.7% of the young did not have a person to rely on.

Less than a half of children and adolescents aged 7–19 had a favorable opinion of school (46.9%). Children aged 7 to 11 years had significantly better perception of school (59.1%), while children aged 12 to 14 years (40.4%) and 15 to 19 years (37.3%) had a good perception of school to a much lower degree. Relating to geographical regions in Serbia, perception of school increased from developed towards lesser developed regions. In Belgrade a significantly lower percentage of the young (37.9%) had a good attitude to school, while in Central (55.7%) and Southeastern Serbia (56.1%) the percentage of the young with a good perception of school was higher.

## USE OF HEALTH SERVICES – CHILDREN AND ADOLESCENTS AGED 7-19 YEARS

### Primary health care services

In 2006 almost every other child in Serbia (45.6%) had their own GP or pediatrician, which was an improvement over 2000 by 11.9%. The groups of the poorest and poorer children and adolescents had their own physician in a significantly lower percentage (31.8% and 38.5%), contrary to the group of the richest children and adolescents (60.8%) (Figure 51).

In the course of the year preceding the 2006 survey, 60.4% population of the young visited their GP or pediatrician, which was on the same level as in 2000.

Children and adolescents in Belgrade visited their GP or pediatrician significantly more often (77.1%), than the children in Central (51.4%), Western (50.3%), and Eastern (48.1%) Serbia.

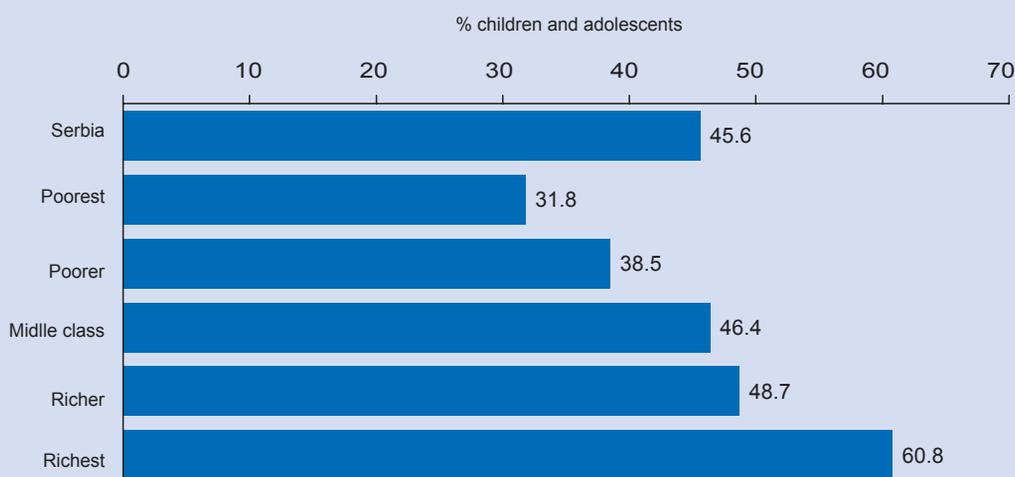
The percent of children and adolescents aged 7–19 years in Serbia who had never used health services, their GP or pediatrician, fell significantly from 6.6% in 2000 to 2.0% in 2006.

### Dental health care

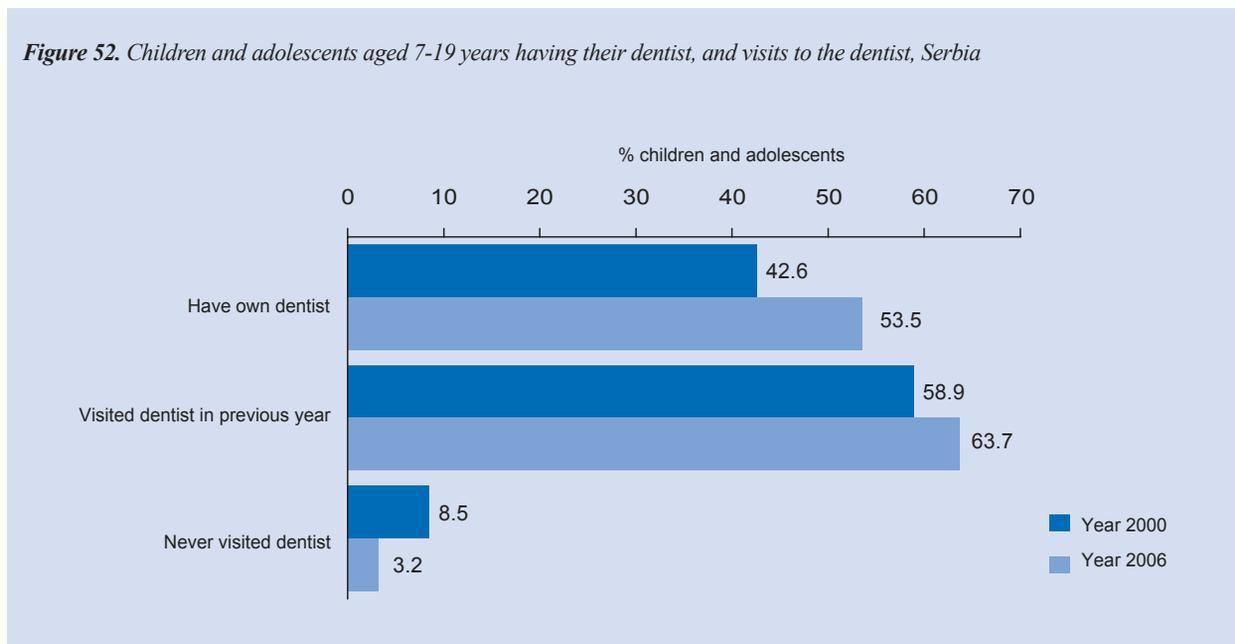
In Serbia in 2006 every other child, i.e. 53.5% had their own dentist, which was significantly more than in 2000 (42.6%). In Belgrade the percentage of the young with their own dentist (76.9%) was significantly higher than in other parts of the country.

In comparison to 2000 the number of children and adolescents who visited their dentist in the year preceding the 2006 survey was also increased (58.9% vs. 63.7%). A positive trend was also noted in the percentage of children and adolescents who have

**Figure 51.** Children and adolescents aged 7-19 years who have their own GP or pediatrician, by the wealth index, Serbia, 2006



**Figure 52.** Children and adolescents aged 7-19 years having their dentist, and visits to the dentist, Serbia



never visited a dentist (8.5% in 2000 vs. 3.2% in 2006) (Figure 52). The poorest children and adolescents also used the dental health care to the lowest degree. Only 34.3% had their dentist, and 46.8% visited him/her in the year preceding the survey.

### Hospital care

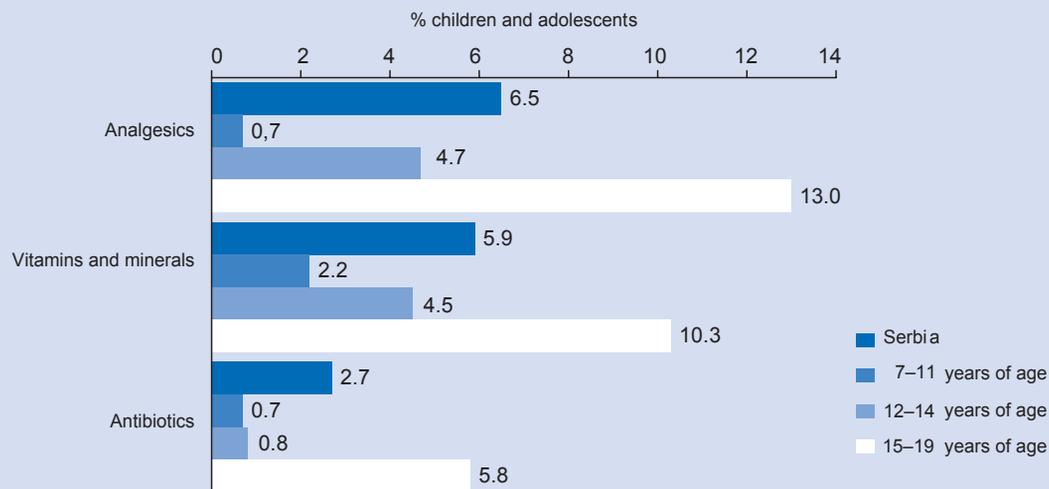
In Serbia 3.9% children and adolescents aged 7–19 were hospitalized in the year preceding the 2006 survey, i.e. 1.1% less than in 2000.

Children and adolescents using hospital care did that 1.5 times on the average, which was comparable with the 2000 data. No significant changes were noted in any of the parameters of hospital care of children and adolescents.

### Use of medication

In Serbia in 2006 one in 12 children resorted to self-medication (8.7%). Boys and adolescents used self-medication significantly less (6.2%). Self-medication without prior consultation with physicians was significantly more common in the 15-19 years age group (15.6%), than in the younger, 7-11 age group (2.7%). In Serbia the young usually used analgesics for self-medication (6.5%). They were followed by vitamins and minerals (5.9%), herbal medicinal products (3.0%) and antibiotics (2.7%) (Figure 53). In comparison with 2000 no significant changes were identified in the percentages of the young that resort to self-medication, except in the case of herbal medicinal products, where a rising trend was seen (3.0% in 2006 vs. 1.3% in 2000).

**Figure 53.** Self medication with analgesics, vitamins and minerals, and antibiotics in the population of children and adolescents aged 7-19 years, by the age groups, Serbia, 2006

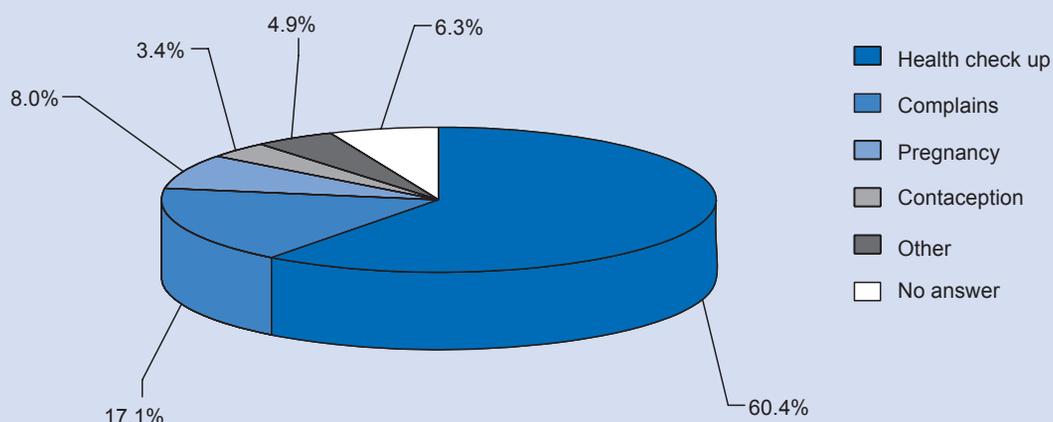


## Reproductive health of female adolescents

In Serbia 17.9% girls aged 15-19 used gynecological health care in the year preceding the 2006 survey. On the average, they visited a gynecologist at the age of 16.5 years. A significantly lower number of girls

visiting gynecologists was noted in Vojvodina (6.3%). In 2006 the most common reason for a visit to the gynecologist was a check up in 60.4%, followed by complaints (17.1%) and pregnancy (8.0%). Birth control was the reason for a visit to gynecologist for 3.4% of adolescent girls (Figure 54).

**Figure 54.** Most common reasons for visit to a gynecologists, girls aged 15-19 yrs, Serbia, 2006



---

## CONCLUSIONS

---

1. Almost a half of the adult population and about ninety percent of children and adolescents perceived their overall health as good and very good. One in six adults defined their health as poor or very poor. Only one quarter of adult population as well as one quarter of the total number of children and adolescents have a desirable attitude to responsibility for their own health.
2. Almost every other adult had at least one of the chronic diseases (elevated blood pressure, rheumatic articular diseases, elevated blood lipids, etc.). The proportion of adults with high blood pressure has increased reaching 46.5% in 2006.
3. With regard to nutritional status, in 2006 the body mass index (BMI) showed that 38.3% of the population weighed within normal values, while every other person was overweight (54.5%) i.e. 18.3% were obese and 36.2% pre-obese. 2.3% were underweight. No changes in weight categories of adults have been noted in the period 2000–2006. In comparison with 2000 the number of underweight children has been reduced, but the numbers of moderately obese and obese children have increased.
4. Relating to hygienic habits of both adults and children, a significant improvement was achieved in regular hand washing, but the percentages of those that took regular baths or showers and maintained oral hygiene were reduced.
5. Two thirds of adults spent their free time passively, in sedentary activities, and almost one third of the working population had a sedentary type of work. In comparison with 2000 the number of children and adolescents pursuing sedentary activities in their free time has increased: they watched TV, CDs or video cassettes, played computer games or listened to music.
6. Risky behavior in traffic was particularly marked in drivers aged 18–34 years, where almost all confessed to having driven under the influence of alcohol, exceeding the speed limit and using a mobile phone while driving. A large number of children and adolescents participated in traffic on their rollerblades or skateboards, bicycles or motorbikes without protective gear.
7. The smoking prevalence in the adult population was reduced in comparison to 2000: 40.5% vs. 33.6%, as well as in the young aged 15–19 from 22.9% to 15.5%. Smoking was more prevalent in men (38.1%) than in women (29.9%), in boys (18.0%) than in girls (13.0%). In 2006 a significant improvement was achieved in awareness of adverse consequences of smoking, i.e. tobacco smoke: 57.5% of adults as compared to 34.6% in 2000. The percentage of the young that do not have a desirable attitude to smoking remains high – 50.5%, i.e. unchanged since 2000.
8. One third of the young aged 15–19 drank alcohol, and 5.5% of the young had the habit of getting drunk at least once a month. Sale of alcoholic beverages at

public places is still present, i.e. 10.5% of children and adolescents bought alcohol in supermarkets, cafes, restaurants, etc.

**9.** Out of the total number of adults who had sex with non-regular partners, only somewhat above one half used a condom at the latest sexual intercourse with a non-regular partner. Over one fifth of the young aged 15 to 19 years had sufficient knowledge on HIV/AIDS, which is a three-fold improvement over 2000. A significant improvement was also achieved in the percentage of women who went for regular gynecological check-ups, as well as in increased coverage by post-delivery home visits by health workers.

**10.** Half of adult population had their own GPs, and about half of children and adolescents had their own pediatrician and dentist, which was an improvement over 2000 for both categories of population. The level

of use of general practice and pediatricians remained at the 2000 level. The use of specialist services and dental services in primary health care centers by adult population has been reduced, while the use of dental services by children has increased. Satisfaction with services provided by GPs and hospital services has increased in comparison with 2000.

**11.** In 2006 the percentage of users of private practice services was reduced in comparison with 2000.

**12.** In 2006 54.2% of adult population obtained their medication on prescription mainly, which was more than in 2000 (39.4%).

**13.** The average annual amount of the total “out of pocket” expenses for health care per capita totaled RSD 14,696.7. Over two fifths of the sum accounted for purchase of medications.

The integral version of the Final Report and Key Findings of the National Health Survey, Serbia 2006 have been published in e-format as PDF documents. They are accessible at the websites of the Ministry of Health of the Republic of Serbia ([www.zdravlje.sr.gov.yu](http://www.zdravlje.sr.gov.yu)) and the Institute of Public Health of Serbia „Dr Milan Jovanović Batut“ ([www.batut.org.yu](http://www.batut.org.yu)).

CIP - Каталогизација у публикацији  
Народна библиотека Србије, Београд

613/614(497.11)"2006"

**ИСТРАЖИВАЊЕ здравља становника**

**Републике Србије** : 2006. година : основни  
резултати / [истраживачки тим Јасмина  
Грозданов . . . и др.] . - Београд :  
Министарство здравља Републике Србије,  
2007 (Београд : Донат граф). - 55, 55  
стр. : граф. прикази ; 29 cm

Подаци о ауторима преузети са прелим. стр.  
- Насл. стр. приштампаног превода: National  
Health Survey Serbia : 2006. - Упоредо срп.  
текст и енгл. превод. - Тираж 500. - Стр.  
5: Предговор / Томица Милосављевић.

ISBN 978-86-83607-34-1

а) Здравље - Србија - 2006  
COBISS.SR-ID 141502220



Пројект „Развој здравства Србије“  
који се финансира из кредита Светске банке

“Serbia Health Project”  
funded by the World Bank credit



Република Србија  
МИНИСТАРСТВО ЗДРАВЉА

Republic of Serbia  
MINISTRY OF HEALTH



Институт за јавно здравље  
Србије

Institute of Public  
Health of Serbia