Survey of the Health Status of the Population of the Federation of BIH in 2012, with a comparison to the survey conducted in 2002

FEDERATION OF BOSNIA AND HERZEGOVINA
ADULT POPULATION HEALTH STATUS STUDY
2012

BOSNIA AND HERZEGOVINA
FEDERATION OF BOSNIA AND
HERZEGOVINA
FEDERATION MINISTRY OF HEALTH

INSTITUTE FOR PUBLIC HEALTH
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FOREWORD

This documents is a research study into health status of population of the Federation of Bosnia and Herzegovina (FBIH) in 2012. This study was jointly carried out by the Federation of BiH Ministry of Health and the Federation of BiH Public Health Institute under the Health Sector Enhancement Project (HSEP) financed by the World Bank's IDA credit funds.

This extensive population research was carried out on a representative sample of adult population of the FBiH and it also represent a study that effectively monitored major health determinants such as risk factor prevalence in development of chronic diseases, availability of health care, utilization of health care providers and population satisfaction with health care provided, since the baseline study was carried out in 2002. Using almost identical methodology that relies on international recommendations, the 2012. Federation of Bosnia and Herzegovina Adult Population Health Status Study provides good basis to evaluate effects of health reforms and health care system, evaluate health care and also promotion of health in the past decade. When compared to earlier baseline study carried out in 2002, data obtained now will allow for evaluation of adopted policies and implemented programs, identification of priority health issues and issues faced by health sector. At the same time, this study also allows monitoring of population's health condition and risk factor prevalence trends, as well as a careful look at real health needs in order to define immediate operational goals in further improvement of health system. The analysis showed that we are yet to face ever increasing challenges caused by modern society and social and economic transition in the Federation of Bosnia and Herzegovina, which altogether has substantial implications on health condition of population.

Federation of BiH Ministry of Health is dedicated to continue to work to increase health care for population, in particular primary health care and health prevention services, to increase general risk factors awareness and awareness on self-responsibility for health in population, which would in turn result in sustained improvement of health outcomes.

Primary goal is to enhance health which in long-term should involve activities aimed at strengthening skills and abilities of individuals and changes to social and economic conditions which should mitigate their (potentially negative) effects on health of individuals and community and also provide more efficient and quality health care for longer life and better life quality of people.

Minister

Prof Rusmir Mesihović, PhD, MD

FOREWORD

The report you see before you is a result of team work and fine coordination of a large number of participants from different health sector institutions in the Federation of BiH, whose knowledge, professionalism and enthusiasm made it possible to successfully realize the Health Status Survey of the Population of the Federation of BiH in 2012.

The realization of this survey, just like that of its predecessor, the Non-contagious Diseases Risk Factors Survey conducted in the Federation of BiH in 2002, has been entrusted to the Institute for Public Health of the Federation of BiH, which has justified the given trust and successfully finalized this important survey using its knowledge and experience acquired through the management of numerous surveys in the past several years.

A research team comprising of competent and experienced professionals from the Institute for Public Health of the Federation of BiH has been formed and given the task of managing the survey. The knowledge, experience, developed sense of team work and pronounced enthusiasm of these professionals have all contributed to the timely realization of this complex and responsible task.

We want to give special thanks to other participants in the survey, who carried out the duties of surveying, measuring, controlling and supervising as well as data entry and processing, whose professionalism and team work enabled the successful realization of field work in households and gathering of relevant indicators for the assessment of the health status of the population of the Federation of BiH.

We also want to thank all the households and individuals who were part of the survey sample, without whose understating of the survey's significance and great patience and kindness it would have been impossible to realize this demanding survey.

We would especially like to thank Dr. Sanja Matović-Miljanović , our external consultant, for the good cooperation and constructive feedback and suggestions provided during the conducting of the survey.

Finally, our great gratitude goes to the Federal Ministry of Health headed by Prof. Dr. Rusmir Mesihović, for the entrusted confidence and support during the realization of this important survey, whose results represent a valid foundation for decision making and strategic guidelines for the further improvement of the health of the population of the Federation of BiH.

Director

Prim. Dr. Željko Ler

ACRONYMS

EHIS   European Health Interview Survey

FB&H   Federation of Bosnia and Herzegovina

FMH   Federal Ministry of Health

HSEP   Health Sector Enhancement Project

WHO   World Health Organization

WB   World Bank

IPH FB&H   Institute for Public Health of the Federation of Bosnia and Herzegovina

SELECTED INDICATORS FOR FB&H POPULATION MEMBERS AGED 18 AND OVER, IN 2012

CHRONIC DISEASES		
Indicator		
Respondents that rated their health condition as good or very good	Total	72,9%
	Female	72,2%
	Male	73,6%
Respondents that were satisfied or very satisfied with their current life	Total	76,3%
	Female	77,7%
	Male	75,0%
Respondents that have been diagnosed with a myocardial infarction at least once in their lifetime	Total	2,5%
	Female	1,4%
	Male	3,7%
Respondents that have been diagnosed with a stroke at least once in their lifetime	Total	2,8%
	Female	2,4%
	Male	3,2%
Respondents that have been diagnosed with hypertension in the past 12 months	Total	21,3%
	Female	22,5%
	Male	20,1%
Respondents that have been diagnosed with diabetes at any time during their life	Total	9,6%
	Female	9,5%
	Male	9,8%
Respondents that have been diagnosed with elevated levels of blood lipids (hyperlipidemia) at least once in their lifetime	Total	12,8%
	Female	13,8%
	Male	11,8%
Respondents that have been diagnosed with depression at least once in their lifetime	Total	4,4%
	Female	5,6%
	Male	3,3%
Respondents that are currently undergoing anti-hypertensive therapy	Total	21,4%
	Female	23,2%
	Male	19,7%
Respondents with chronic diseases that have had their blood pressure measured in the past 12 months	Total	83,9%
Respondents with chronic diseases that have had their blood sugar measured in the past 12 months	Total	71,9%
Respondents that have all their teeth	Total	17,3%
	Female	17,1%
	Male	17,5%
Average number of missing teeth (mean)	Total	12,3
	Female	12,9
	Male	11,8

NUTRITION		
Indicator		
Respondents that have three meals a day	Total	54,5%
	Female	51,2%
	Male	57,7%
Respondents that add salt to their food before tasting	Total	7,2%
	Female	5,5%
	Male	8,9%
Respondents that eat fruit at least once a day	Total	35,5%
	Female	38,0%
	Male	33,1%
Respondents that eat vegetables at least once a day	Total	27,9%
	Female	29,3%
	Male	26,4%
PHYSICAL ACTIVITY		
Respondents that are physically active 2-3 times a week for at least 30 minutes to the extent of sweating and having an increased breathing rate	Total	24,6%
	Female	20,3%
	Male	28,7%
Limitations in daily activities		
Respondents that have been limited in performing daily activities during the past 12 months	Total	8,5%
	Female	8,3%
	Male	8,7%
ADDICTIVE DISEASES		
Regular smokers	Total	44,1%
	Female	31,6%
	Male	56,3%
Regular smokers that have the desire to quit smoking	Total	41,7%
	Female	46,6%
	Male	35,8%
Respondents that are exposed to second hand smoke daily for 5 or more hours	At home	19,2%
	At work	4,3%
	In public	4,8%
Respondents that have consumed any type of alcoholic beverage the past 12 months	Total	28,8%
	Female	11,0%
	Male	46,1%
Respondents that consume any type of alcoholic beverages on a daily basis	Total	11,4%
Respondents that have consumed 70 or more grams of alcohol during the past 7 days (chronic alcoholics)	Total	7,1%

MENTAL HEALTH		
Indicator		
Respondents that have been tense or under stress in the past month	Total	44,8%
	Female	46,7%
	Male	42,9%
Respondents that experienced emotional problems in the past month	Total	28,4%
	Female	33,0%
	Male	23,9%
Exposure to violence		
Respondents that were exposed to any form of physical violence in the past month	Total	1,2%
	Female	1,2%
	Male	1,2%
Respondents that were exposed to any form of psychological violence in the past month	Total	2,1%
	Female	2,2%
	Male	2,1%
HEALTH CARE UTILIZATION		
Respondents that have visited a doctor of medicine in the past 12 months	Total	55,2%
	Female	60,4%
	Male	50,1%
Most common reason for visiting a doctor of medicine in FB&H: Illness	Total	36,8%
Respondents that have visited a dentist in the past 12 months	Total	25,0%
	Female	26,7%
	Male	23,3%
PREVENTIVE CARE		
Respondents aged 50 – 69 that have undergone breast cancer screening (mammography) in the past 3 years	Total	20,3%
Respondents aged 20 – 50 that had a cervical smear test (Papanicolau test) done in the past 3 years	Total	59,9%
Respondents that have undergone colon cancer screening in the past 12 months	Total	1,0%
Respondents aged 65 and over that received a flu vaccine in the past 12 months	Total	38,0%

MEASUREMENT AND OBJECTIVE ANALYSIS VALUES		
Indicator		
Respondents with BMI (Body Mass Index) <25	Total	41,3%
	Female	47,2%
	Male	35,7%
Respondents with BMI between 25-29	Total	37,5%
	Female	29,6%
	Male	45,2%
Respondents with BMI >30	Total	21,2%
	Female	23,3%
	Male	19,1%
Respondents with triglyceride levels (= or >1,7 mmol/l)	Total	21,2%
	Female	19,8%
	Male	22,5%
Respondents with cholesterol levels (= or >5 mmol/l)	Total	44,4%
	Female	45,3%
	Male	43,5%
Respondents with blood sugar levels (= or >6,1 mmol/l)	Total	21,7%
	Female	22,1%
	Male	21,3%
Respondents with potential hypertension (systolic pressure> 140, diastolic> 90) and/or undergoing anti-hypertensive treatment	Total	42,1%
	Female	38,9%
	Male	45,3%

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1 INTRODUCTION

Taking into account that significant demographic, socio-economic and cultural changes affecting the health of the population have occurred in the past decades in the Federation of BiH it is of great importance to acquire up to date indicators on the presence of risk factors and leading problems concerning health in order to be able to undertake the appropriate measures for maintaining and improving the health of the population.

Keeping track of trends of health risk factors, illness incidences, health care utilization and other indicators is necessary in order to improve the existing political and strategic guidelines in the health care system and create new strategies and health care programs with the aim of improving the health of the population. With this goal in mind it is necessary to repeat surveys within certain time frames.

The last survey of the population related to the assessment of health risk factors in the adult population of the Federation of BiH was conducted by the Institute for Public Health of the Federation of BiH back in 2002.

The conducted survey on the health status of the population, health care services utilization and health related needs aims to define priorities for adopting new strategies and health care programs, creating prevention and promotion programs in the health and other sectors and ultimately maintaining and improving the health of the population.

This survey carries special significance in the fact that it represents support to the strengthening of institutional capacities of the Federal Ministry of Health and the Institute for Public Health of the Federation of BiH in planning and implementing population surveys, processing, analyzing, comparing and giving sense to data acquired, in accordance with selected country and international indicators, as well as providing support for the formulation of sector policies and priority guidance in reform processes in the health sector.

According to the contract signed with the Federal Ministry of Health, the Institute for Public Health is engaged as a consulting institution for the conducting the "Follow-up Health Status Survey of the Population of the Federation of Bosnia and Herzegovina (FB&H)". The technical support is part of the Health Sector Enhancement Project (HSEP), which is financed by the World Bank (WB).

2 AIMS OF THE SURVEY

The general aims of the survey are:

- An assessment of the health status of the population of the Federation of BiH, with the identification of the leading risk factors, health related needs and health care utilization among adult members of the population (aged 18 and over)

- Monitoring and comparing the selected indicators related to leading risk factors, health related needs and health care utilization among adult members of the population (18 and over) between the two surveys (2002 vs. 2012)

- Collection of data in accordance with internationally recommended indicators (EUHIS), as the baseline for the continuation of periodic surveys in the following period and in cooperation with the EU

By completing the follow-up survey of the health status of the adult population in the Federation of BiH, important indicators have been collected. These have the purpose of:

- Serving the responsible authorities in the Federation of BiH in accomplishing the aim of determining a health care policy and defining measures directed towards an improvement of the health sector and the health status of the public.

- Defining measures directed towards improving the political and strategic reform guidelines within the health sector

- Defining measures for the improvement of the health status of the population and health care

- Defining guidelines and priorities for creating prevention and promotion programs in the health sector, and sectors related to it.

3 METHODOLOGY OF THE SURVEY

The survey has been conducted as a cross sectional study on the area of the ten cantons in the Federation of BiH in 2012.

3.1 Sample

3.1.1 Target population

Members of the population of the Federation of BiH aged 18 and over and present in the country for at least a full year have been selected as the target population. Collective households such as student homes, children's homes, homes for the elderly, infirm, retired, prisons, monasteries and the like are not included in the target population.

3.1.2 Sample selection frame

The sample selection frame is a master sample of enumeration districts and households from 2009, established and updated by the Federal Institute for Statistics.

Households and individuals aged 18 and over are the units of observation, whereby the sample was designed to be representative on the level of individuals aged 18 and over, as well as on the level of households.

3.1.3 Stratification

A stratified, two-stage systematic sample has been applied, within which the primary sampling units (first stage units) are enumeration districts, while secondary sampling units (second stage units) are households.

The primary units have been sampled using the Lahiri sampling method, which means that the probabilities of selection were not equal; rather, they were proportional to the size of the primary units, by which the size of the primary unit is represented by the number of secondary sampling units, i.e. households, within the primary unit.

Lahiri's method makes a multiple selection of the same unit possible, which results in a lower dispersion of primary units, and with that a lower dispersion of secondary units as well, i.e. it results in more units being selected in some primary sampling units than in others.

The total number of unique non-empty primary sampling units in the Master sample is 801, which is why the primary number of selected units in the first stage was chosen to be 801.

Secondary sampling units have been selected using a systematic method, which means that the probabilities of selection were equal.

Stratification has been made according to the type of settlement (urban/rural)

Household allocation was made proportional to the size of settlement types, taking care of the representation of all cantons.

According to the master sample the average number of members per household in FB&H is 3,16 (2,88 for urban and 3,36 for rural areas). Because of this it was initially decided that 1.600 households will be sampled. Taking into account the non-response rate of 25%, a list of 400 reserve households proportional to the size of the settlement type was prepared.

Settlement type	Number of households	Number of reserve households
Urban	643	161
Rural	957	239
Total	1600	400

Table 1 - Sample for surveying the health status of the population of FB&H by settlement type

Canton	Settlement type		Total number of households
	Urban	Rural	
Una – Sana	86	116	202
Posavina	2	26	28
Tuzla	109	229	338
Zenica - Doboj	84	147	231
Bosnian Podrinje	7	9	16
Central Bosnia	75	186	261
Herzegovina - Neretva	34	97	131
West Herzegovina	22	59	81
Sarajevo	210	44	254
Canton 10	14	44	58
Total	643	957	1600

Table 2 - Sample for surveying the health status of the population of FB&H by canton

3.1.4 Indicators

WHO indicators, Lists of performance indicators (received as part of the Project for the improvement of monitoring and evaluation systems in the health sector in 2010, which are very important for the Federation of BiH), and indicators of the EHIS survey (European Health Interview Survey) have been used for the interpretation of the results.

The frequency of every observed variable has been examined through descriptive statistical analysis in relation to the place of residence (urban/rural), level of education, sex and age group.

Since a part of the research is dedicated to the comparison with the survey conducted in 2002 (for population members aged 25-64), selected indicators for respondents aged 24-65 have been compared with the results of the survey conducted in 2002.

3.2   Survey tools

3.2.1 Questionnaires and the objective diagnosis and measurements form

Specially developed questionnaires have been used as the tools of the survey. These questionnaires are based on international methodology (WHO Health Survey, EU Health Interview Surveys, and Health Examination Survey, etc.) used in similar surveys, but are also adapted to the situation in the Federation of BiH.

With the aim of making a comparison to the indicators resulting from the risk factors survey from 2002 a set of questions from international protocols (CINDI, MONICA itd.) have been used, which in addition to the data on exposure to risk factors also include measurements (blood pressure, height, blood sugar values, cholesterol levels and triglyceride levels in the blood).

Having in mind that one of the aims of the survey is also obtaining internationally recognized indicators, questions from the EHIS survey (European Health Interview Survey), relevant in EU countries, have also been included in the follow up survey on the health status of the population in the Federation of BiH.

The following tools have been used in the survey:

- *Household questionnaire* – contains the basic data about the household and its characteristics as well as all the members of the household aged 18 and over (Annex 1)

- *Questionnaire for adult persons aged 18 and over* – contains demographic and socio-economic characteristics, health status, lifestyle and risk factors, health care utilization and user satisfaction with health care. This questionnaire is filled out with aforementioned data on every member of the household aged 18 and over (Annex 2)

- *Objective diagnosis and measurements form* – contains the results of anthropometric and biochemical tests of every member of the household aged 18 and over (Annex 3)

The questionnaire for adult persons aged 18 and over covers demographic characteristics, socio-economic status, a health status and life satisfaction self-assessment, health related risks, health status, early detection of disease, nutrition, physical activity, smoking, alcohol and psychoactive substance use, health care utilization and user satisfaction with health care.

The objective findings and measurements form contained measurements of weight, height, waist circumference, and blood pressure and biochemical tests of capillary blood samples (sugar, cholesterol and triglyceride levels in the blood).

With the aim of standardizing data collection procedures an appropriate methodological instruction was prepared for each of the survey tools.

3.2.2 Equipment

Appropriate equipment was used for the purpose of conducting anthropometric and biochemical tests and blood pressure measuring during the survey (*Annex 4*).

3.3 Ethical aspects of the survey

The survey was conducted in accordance with the Helsinki declaration, which defines ethical principles of biomedical surveys concerning humans, where, among other things, the protection of privacy and personal data is provided for.

All participants were informed of the purpose of the survey, and introduced to the fact that the data collected will be used solely for research purposes.

Only respondents that have previously given their written consent have been surveyed and subjected to anthropometric and biochemical measurements and tests.

The approval of the Ethical committee of the Doctors chamber was received for conducting the survey.

3.4 Survey participants

Representing key persons of interest for the successful implementation of the survey a small research team comprised of employees from the Institute for Public Health of the Federation of BIH was established, while on the cantonal level field teams have been nominated, based on positive experiences from previous surveys.

3.4.1 Field teams

The working team for each canton was made up of a supervisor, an interviewer and a measurer. Being a health care professional (medical nurse/ technician) employed in an institute for public health and/or health center with experience in conducting surveys, field work skills and familiarity with the area being surveyed were defined as primary selection criteria for surveyors and measurers in the working teams on cantonal levels. Specialists in the field of public health from the cantonal institutes for public health, with whom the FB&H Institute for Public Health had good cooperation in previous surveys, were mostly nominated as supervisors, the key persons for coordinating field work. The number of surveyors and measurers for each canton varied depending on the sample size. After defining the sample, a total of 56 associates for field work was nominated, of which 8 were supervisors, 24 were surveyors and an additional 24 were measurers. On the federal level, field work monitoring was carried out by members of the research team, while logic control was carried out by controllers appointed from the IPH FB&H.

3.4.2 Pretesting the survey tools

Before organizing a work shop for the education of survey participants, pretesting of survey documentation was carried out, with the aim of providing insight into the intelligibility of the questions, estimating the required time for completing the questionnaire and making eventual corrections.

The pre-testing was carried out by employees of the Institute for Public Health of the Federation of BiH – members of the extended research team of the project. Pre-testing was carried out in Sarajevo and Mostar in 15 households, with 50 respondents of both sexes, aged 18 and over, in accordance with the research methodology. After completing the pretest a meeting with controllers and supervisors was held, at which experiences and agreed corrections were presented before the all the survey and educational workshop documentation was printed.

3.5 Field work education

Following the selection of the field work participants a training of all the survey associates was carried out from the 12th to 14th of November 2012 in the Institute for Public Health of the Federation of BiH. The training was in accordance with the Survey protocol and had the aim of securing the application of a unified research methodology.

Supervisor and controller training - a three day training for all persons appointed as supervisors and controllers was held as part of a workshop organized by the Institute for Public Health of the Federation of BiH. During the training supervisors and controllers were introduced to the goals and the methodology of the survey,

the contents of the questionnaires, the survey techniques, the documentation which was used in the survey, the organizational concept of filed work and the methodology of the anthropometric and biochemical tests.

Surveyor and measurer training - a three day training for all persons appointed as surveyors and measurers was held as part of a workshop organized by the Institute for Public Health of the Federation of BiH. During the training surveyors and measurers were introduced to the contents of the questionnaires and proper techniques for filling out the questionnaire, while measurers were trained in using the equipment and proper measuring of blood pressure, height and waist circumference as well as measuring cholesterol, triglyceride and sugar levels in capillary blood. During the training all surveyors and measurers had the opportunity to try out and practice the practical aspects of surveying and measuring.

According to the Survey Plan, on the third day of the workshop all the working teams had a practical exercise for which a practice sample was prepared. Five households, which did not become part of the survey sample, were assigned to each of the teams. The survey methodology and the survey tools were tested, with emphasis on the manner of entering the household, receiving consent for the participation in the survey and the usage of the measurement and biochemical analysis equipment.

3.6 Main survey

Field work commenced on 15.11.2012 immediately after the training of the working teams and the pretests of the methods and procedures were completed. 24 surveyors, 24 measurers and 8 supervisors took part in the survey

The teams delivered a letter containing information on the survey and a plea for the participation of all eligible household members. Questionnaire filling and anthropometric measures were conducted first, after which a second visit taking place in the morning hours and needed for the taking of capillary blood samples and biochemical tests was arranged. During the first visit instructions for an appropriate diet, needed for the proper conducting of biochemical measurements, were given.

A fallback in schedule occurred in the initial stages of the survey, due to lack of larger quantities of blood test strips, which were delivered by the end of November, and the replacing of some weighing scales and sphygmomanometers.

Two measurers dropped out from the survey during field work, which required additional training and reorganization of the remaining duties of that team.

In addition to this, more time was needed for fieldwork due to the fact that blood samples had to be taken in the morning hours.

Weather conditions during December 2012 cut off access to rural areas, predominantly in the Una-Sana, Zenica-Doboj and Central Bosnia cantons. In accordance to the Survey Protocol and in agreement with the cantonal supervisors, work was suspended during holidays (Christmas, New Year). Additionally, a number of households from the main sample had to be replaced with reserve households.

Field work lasted for a total of two and a half months.

3.7 Data quality control

According to the Survey Protocol, five controllers were engaged for the survey. These had the task of continually carrying out logic control of the delivered questionnaires

Before the first completed questionnaires arrived in the Institute of Public Health of the Federation of BiH, a one day training session for controllers was held, during which a unified approach to questionnaire and supporting documentation control was agreed upon.

As the survey advanced the number of errors in record keeping and questionnaire and supporting documentation filling out minimized. This simplified the work of data entry agents.

3.8 Data entry and processing

3.8.1 Data entry

Data entry into a database specially created for the purpose was carried out, right after filled out questionnaires and forms were received and controlled by the Institute for Public Health of the Federation of BiH. The database was made using the Epi Info software from which data was exported into the SPSS software (Statistical Package for Social Sciences).

Data entry was carried out by five agents, while a single person was in charge of supervising and coordinating the entry process. All of these participants had previously undergone the necessary training. Data entry was carried out locally, i.e. each computer had a separate database for each of the three survey tools. Merging all the three databases into a single database was made possible thanks to the specially developed code for each of the three survey tools. Data entry was completed by the beginning of April 2013.

3.8.2 Data processing

Data processing included the following steps:

- Exporting the data into SPSS software, merging the databases into a single database,   and data clearing
- Data weighting
- Preparation of tables and data analysis

After clearing the database, data entry and quality control, as well as data weighting was carried out. The database of questionnaires for persons aged 18 and over has been weighted according to the data on population estimates available to the Institute for Statistics of the Federation of BiH. This was done according to the number of residents in the cantons, age and sex structure and settlement type.

The households database was weighted according to the estimates on the number of households in each of the ten cantons of the Federation of BiH.

In the end tables were prepared for analysis. The resulting data has been displayed in relation to the surveyed characteristics by settlement type (urban/rural), education level (no education, elementary, secondary and tertiary), sex (male/female) and according to age groups (18-24, 25-34, 35-44, 45-54, 55-64 and 65 and over)

3.8.3 Statistical analysis

After data entry was completed, data processing and analysis followed. A descriptive and inferential statistic was used in this survey. The resulting data was displayed according to geographic and demographic characteristics for which frequencies, percentages, arithmetic mean values and standard deviations were calculated.

During work on significance tests, an H-square test was performed for categorical variables, where the threshold (α) value for determining the significance of the test was set at 0.05 l (if the probability of occurrence of the determined difference between the measured frequencies was lower than 5% the test was pronounced significant).

Analyzed and displayed data was separately tabulated for respondents aged 18 and over and for comparative indicators for 2002 and 2012. This was done because of the need to monitor trends which are related to respondents aged 25-64.

Due to the low percentage of "no response" answers, which was below five percent in all questions, these were excluded from the data displayed, i.e. not showcased as part of results in the final tables.

3.9   Survey management and quality control

3.9.1 Organizational structure

The carrier of the survey is the Federal Ministry of Health, while the coordinator and implementer is the Institute for Public Health of the Federation of BiH. Other institutions which participated in the survey are the cantonal institutes for public health and health centers.

A small and a large-scale survey team were formed on the level of the Institute for Public Health of the Federation of BiH, with the director of the institute acting as the team leader.

Additionally, an external expert in charge of sample preparation and an external expert in charge of database design and statistical analysis participated in the survey.

A working team headed by a supervisor was formed for each of the cantons *(Annex 5: Survey participants).*

3.9.2 Informing the public about the survey

Before the beginning of field work and with the aim of supporting a successful implementation of the Health Status Survey of the population of the Federation of BiH the public was informed about the survey through thematic reports in electronic and print media.

In addition to this, a letter containing all the basic information on the research, the importance of participation of all residents aged 18 and over and the insurance of the principles of anonymity and confidentiality of data collected, was prepared and handed upon contact.

All cantonal ministries of internal affairs were informed about the survey.

3.9.3 Survey quality control

Monitoring and survey control was carried out during each of the phases. From the very beginning supervisors and controllers were put in charge of correcting detected omissions, both in terms of sample control (household selection) as well as in terms of field work control (questionnaire filling and supporting records). The duty of the team was to conduct at least two separate visits with the aim of surveying the household, and two separate visits with the aim of surveying all respondents of eligible age and conducting measurements.

Surveyors were tasked with checking every questionnaire before leaving the household, in order to ensure that all questions were asked and that the handwriting of the surveyor is legible.

Methodological instructions for survey filling, taking of anthropometric measurements and biochemical tests were prepared, trainings were held for persons put in charge of field work, control procedures for surveying and collected data verification as well as for data entry and processing were prepared, all with the aim of procuring quality data and applying a unified survey methodology.

All survey tools, methods and procedures were pretested before the beginning of the survey. Pretest results served the purpose of making needed corrections in the survey tools and standardizing data collection procedures.

Practice work on the final day of the workshop gave all the teams as well as the the members of the survey team of the Institute for Public Health an opportunity to perform a practical exercise on a sample prepared specially for the purpose.

The first level of control was carried out by cantonal supervisors through their presence during the very first stages of the survey, and through their inspection of the filled out questionnaires and forms.

The second level of control was carried out by other members of the survey team of the Institute for Public Health, predominantly by controllers designated for each canton.

The subsequent level of control was carried out by persons in charge of data entry.

1 SURVEY RESULTS

Of the 1752 households that made up the FB&H sample, the survey was conducted in 1402 households, which represents a response rate of 80%. This rate was 77,5% in urban and 81,8% in rural areas. Different response rates have also been registered in different cantons. The highest response rate was in the Una – Sana Canton (88,9%), whereas the lowest was in Canton 10 (60,6%)

4.1 Household Survey results

4.1.1 Demographic and socio-economic characteristics of households

The highest percentage of Households in the Federation of Bosnia and Herzegovina consisted of two members (21,51%), 20,2% of households were four member households, while single member households had the lowest percentage (11,4%).

In urban areas the majority of households had two members, while the same was true for four-member households in rural areas.

The average number of household members in FB&H was 3,6. This number was 3,3 and 3,6 in urban and rural areas respectively. The highest average number of household members was registered in the West-Herzegovina Canton (4,7), and the lowest in the Tuzla Canton (3,2)
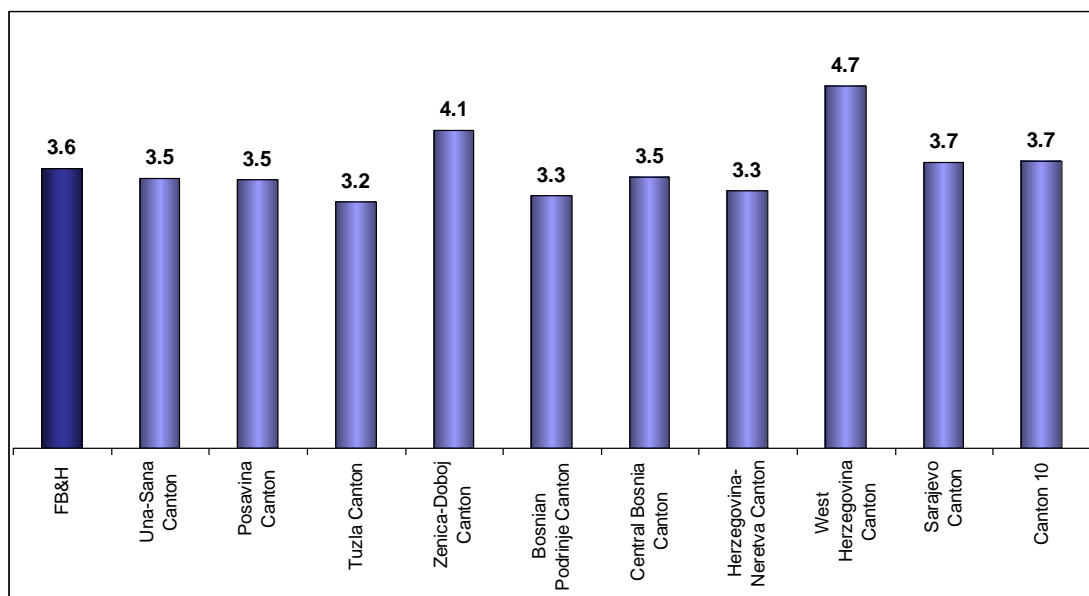
Graph 1 - *Average number of household members in the FB&H*

4.1.1.1 Education

The highest number of respondents in BiH has completed secondary education (59,1%), they are followed by respondents with elementary (primary) education (24,9%). Respondents with tertiary education and those without education constitute an equal percentage of 5,6%.
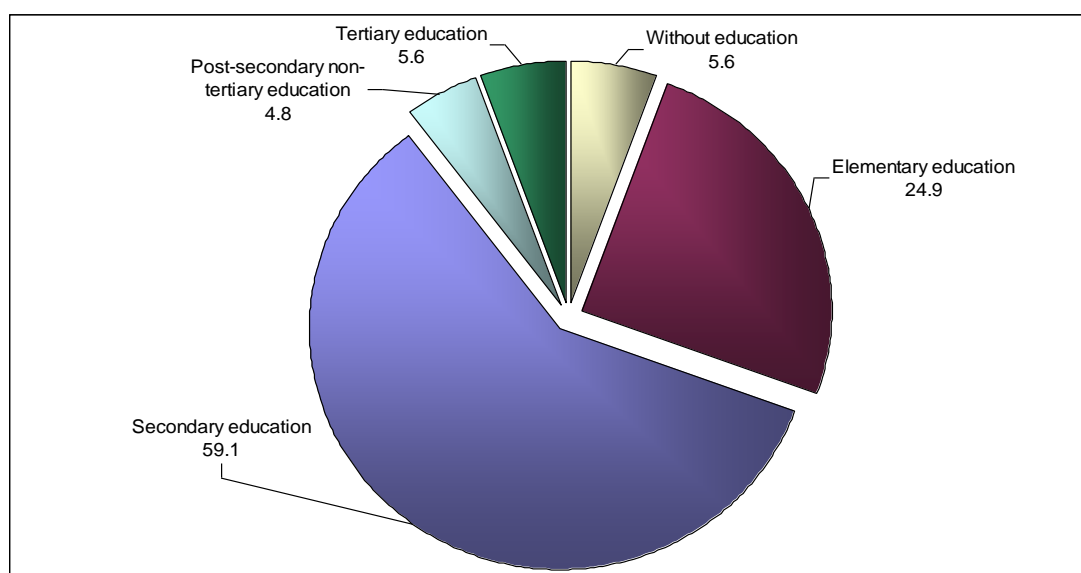
Education levels of respondents in the FB&H, %

The highest percentage of both urban and rural respondents have secondary education, 61,1% and 55,6% respectively. The number of respondents with elementary education is twice as high in rural (31,4%) as in urban areas (15,2%). There are significantly more respondents with completed tertiary education in urban (10,8%) than in rural areas (2,0%), while the opposite was true for respondents without education which are more common in rural (7,4%) than in urban areas (2,8%).

In terms of the sexes, there were more female without education (9,0%) than male (2,3%). The same is true for female with elementary education (31,4%) which are also more numerous than their male counterparts (18,6%). The situation is reversed when speaking about secondary education where there were more male (66,9%) than female (51,2%)

This is also the case when tertiary education is in question, where male (6,3%) again outnumbered female (4,8%).
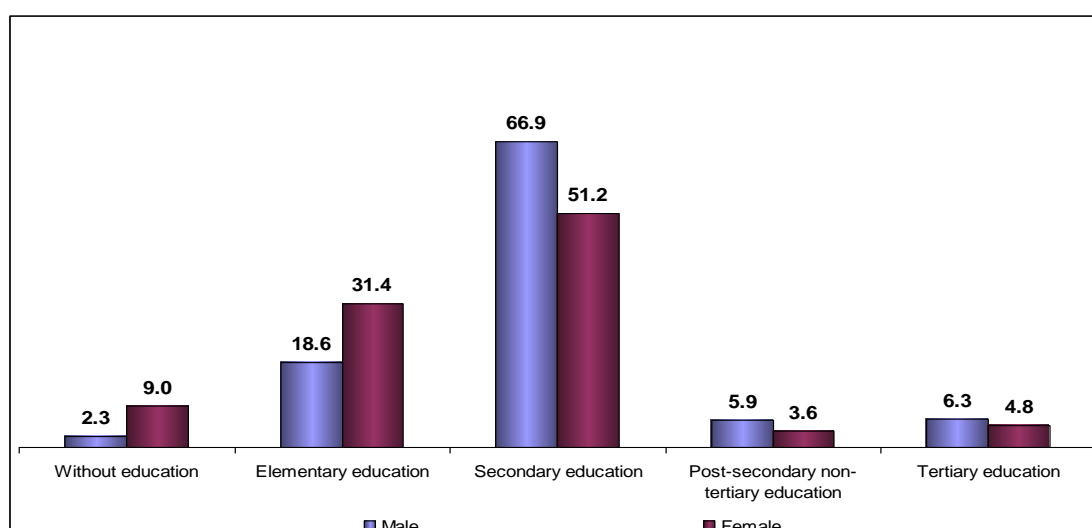
Graph 3 - *Education level of respondents in FB&H by sex, %*

4.1.1.2 Marital status

67,5% of respondents in the Federation of Bosnia and Herzegovina are married, more so in rural (71,9%) than in urban (61,0%) areas. A total of one fifth of respondents in the Federation of BiH is single, out of which 9,5% are widowed, 1,8% divorced and 0,7% cohabitate.
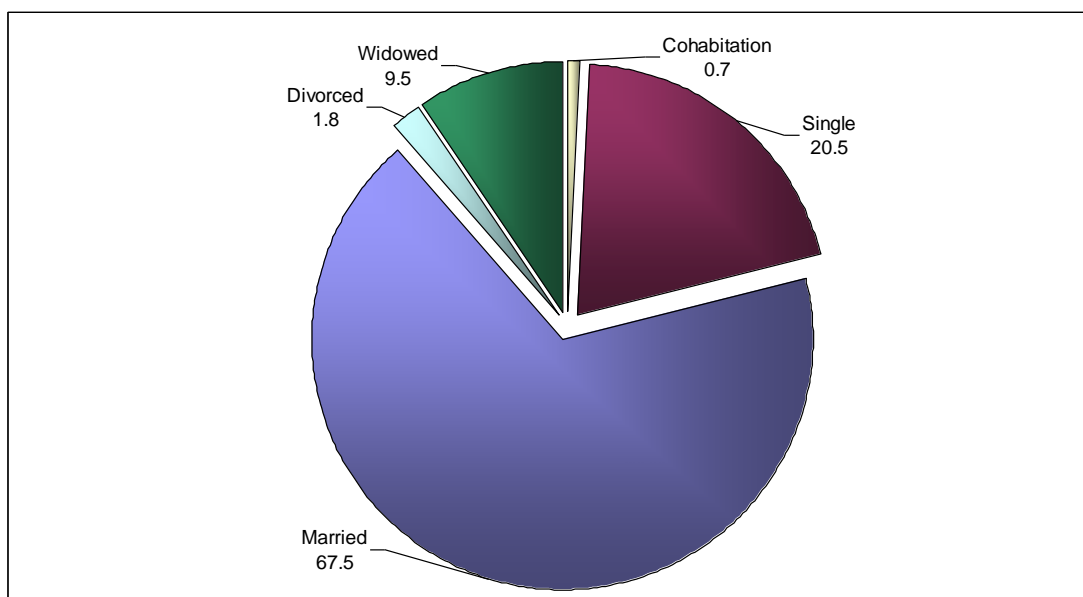
Graph 4 - *Marital status of respondents in FB&H, %*

When sexes are in question, 69,8% of male and 65,2% of female are married, while 24,0% of male and 17,0% of female are single.

4.1.1.3 Employment status

A total of 31,8% of respondents is employed, more so in urban (37,7) than in rural (27,8%) areas. On the other hand, the percentage of unemployed respondents is higher in rural (21,8%) than in urban (16,0%) areas. Significantly more male (41,3%) are employed than female (22,0%).

More than a fifth of respondents are retired (22,5%), more so in urban (25,1%) than in rural (20,2%) areas.

The percentage of housewives in the Federation of BiH is almost twice as high in rural (24,2%), as in urban areas(12,1%). University and school students make up a total of 6,4% of respondents in the Federation of BiH, and are more numerous in urban (8.5%) than in rural (5,0)%areas.
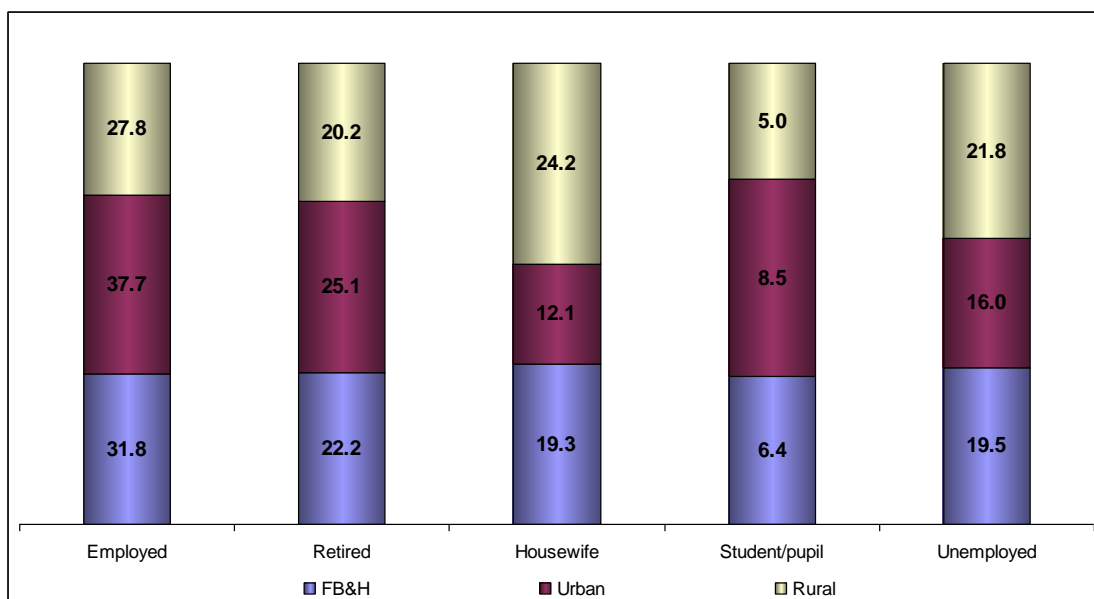
Graph 5 - *Respondents in FB&H by employment status, %*

Respondents with tertiary education are most numerous among those employed (58,9%). Employment figures decline in line with the education level, and are lowest among respondents without education, of whom only 2,0% are employed.
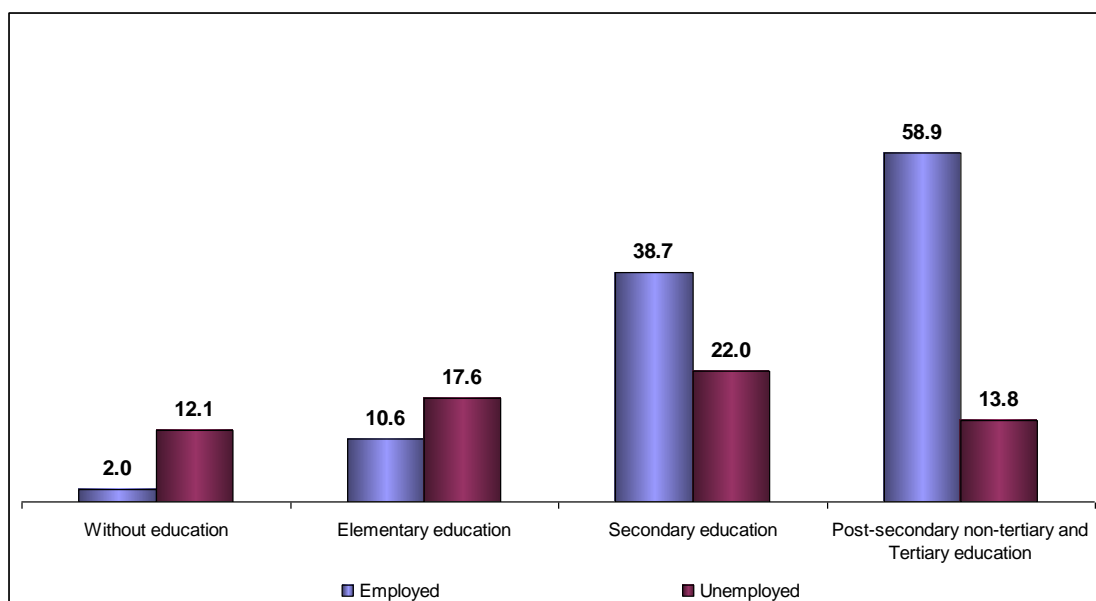
Graph 6 - *Employment across education levels in FB&H, %*

4.1.2

Household incomes and expenditures

Households have on average 1.7 sources of income. This number is higher in urban (1.8) than in rural (1.6) areas.

3,4% of households in FB&H are without any sources of income, more so in rural (4,2%) than in urban (2,2%) areas.

The most common source of income for FB&H households are salaries (46,7)% and pensions (39,9%), while self-employment and agriculture as sources of income account for only 5,5% and 1,6% of income sources respectively in the FB&H. Social welfare is the main source of income for 1,5% of households.
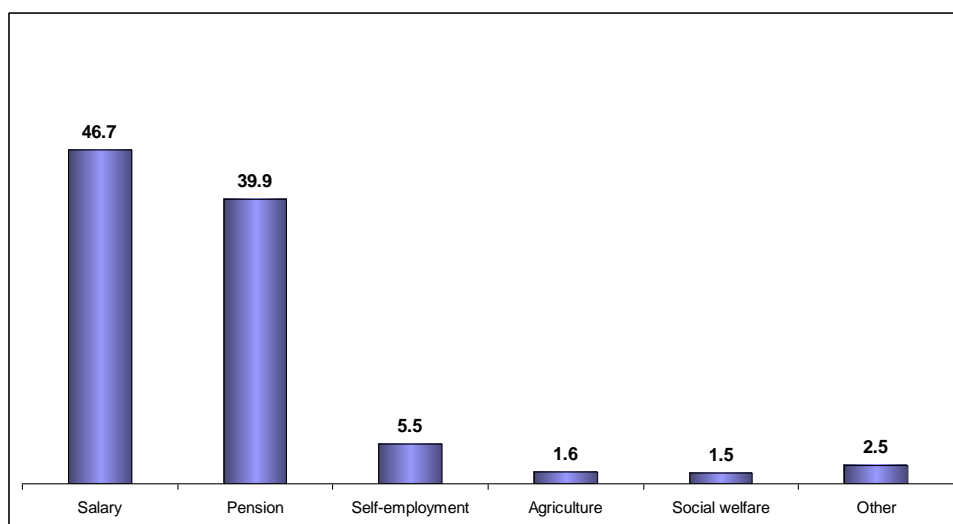
Graph 7 - *Main sources of income for households in FB&H, %*

4.1.2.1 Total monthly household income

The highest percentage of FB&H households (31,2%) has a total monthly income in the 501-1000 KM range. More than a quarter of households (32,9%) stated that their monthly income is in the 1001-2500 range, which was also the case for 32,9% households in urban and 23,1% households in rural areas.

5,4% households have a total monthly income that is less than 250 KM, more of which are located in rural (6,8%) than in urban (3,4)% areas.

More than half of the households surveyed (56,8%) have spent 30-50% of their income on food during the past month.

Less than a fifth of households (17,9%) have spent 51-70% of their income on food.

The predominant manner of procuring food in the Federation of FB&H is through purchase (98,5%), this being the case both in urban and rural areas.

The majority of households consider the monthly income to be sufficient for food (92,9%). The majority of households also find monthly income to be sufficient for personal hygiene (90,5%), household hygiene (88,1%) and utility bills (84,7%). To a somewhat lesser extent the surveyed households consider the monthly incomes to be sufficient for expenditures on health care (72,1%), clothing and footwear (69,6%), outings (25,9%) and recreational activities (17,9%)

More than half of the households described their material status as being good or very good (56,2%). A quarter of households described their material status as being average (24,8%), while almost a fifth of households see their material status as being bad or very bad (18,5%). There are no significant differences between urban and rural areas in terms of this question.
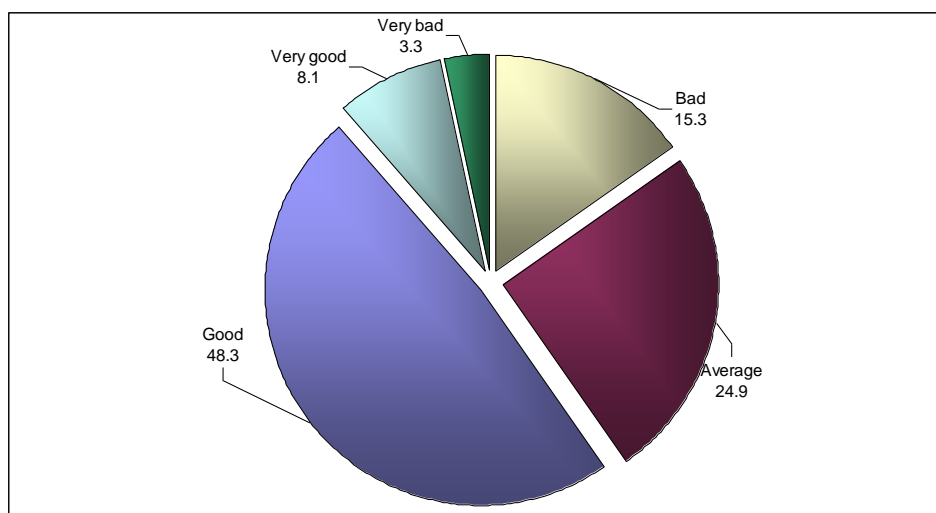
Graph 8 - *Material status estimate of households in FB&H, %*

4.1.3 Housing conditions

More than four-fifths of respondents in the Federation of BiH live in a private house (82,3%), while significantly less in residential buildings (14,8%) or in apartments that are part of a private house (2,6%).

A higher percentage of respondents living in private houses is located in rural (97,4%) than in urban (59,8%) areas, while the opposite is true for respondents living in residential buildings which are significantly more frequent in urban (35,2%) than in rural areas (1,1%).

Graph 9- *Types of housing in the FB&H, %*
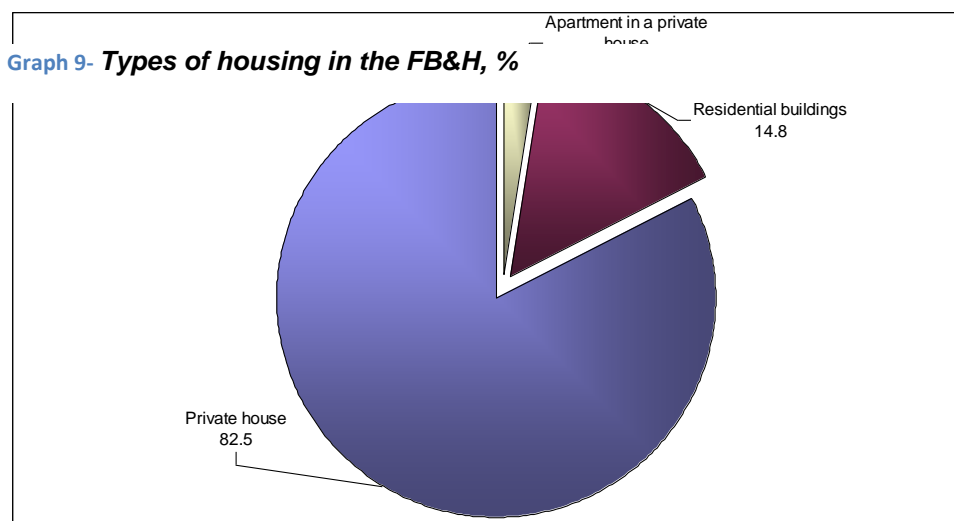
Households in rural areas on average use 2,5 bedrooms, 2,3 in urban and 2,6 in rural areas.

4.1.3.1 Household heating energy sources

Almost three-quarters of households in FB&H (72,2%) rely on wood as their heating source, more prominently households in rural (83,7%) than in urban (55,1%) areas.

Coal is used as a heating energy source in 10,5% of households, followed by gas (6,4%) and electrical energy (3,4%), while heating oil/ oil fuel/ crude oil are used in only 1,2% of households.
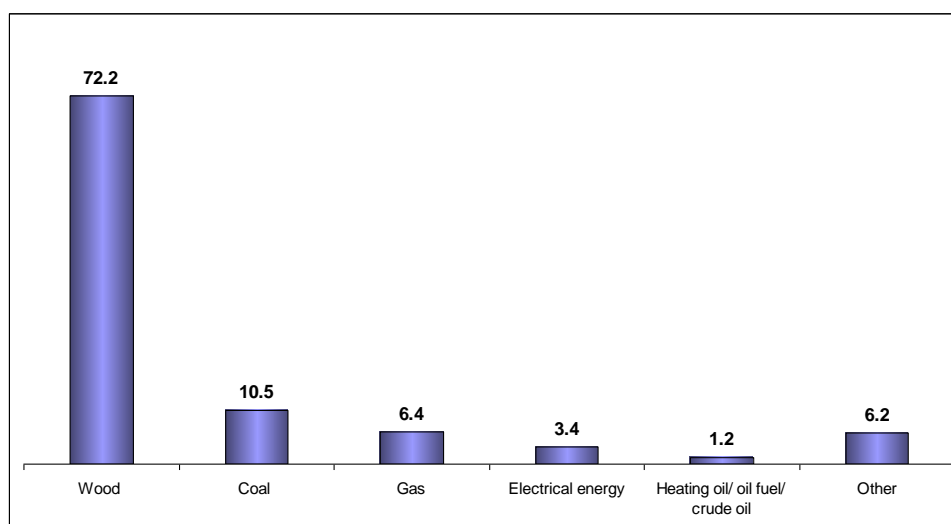
Graph 10 - *Most common household heating energy sources in the FB&H, %*

4.1.3.2 Fresh water supply and waste management

A total of 97,1% of households in the Federation of BiH is connected to the water supply system, 98,8% of households in urban and 96,0% in rural areas.

65% of households in the Federation of BiH stated that their connection is to the city water supply system, more so in urban (94,2%) than in rural (45,4%) areas. Local water supply systems are the main source of water for more than a fifth of surveyed households (92,1%) while alternative water supply modes are rarely used.
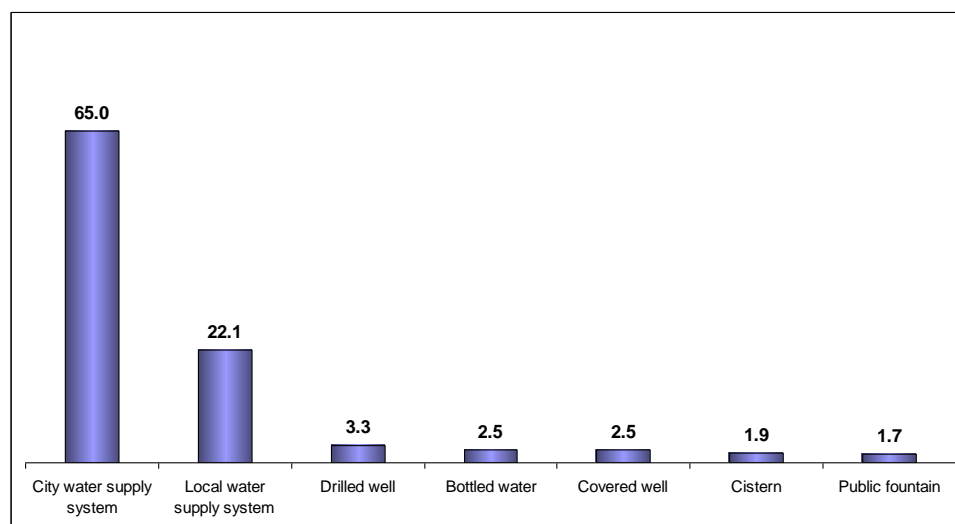
Graph 11 - *Main sources of fresh water supply for households in the FB&H, %*

More than a third of households in FB&H (33,5%) are experiencing interruptions in the water supply.

Around two-thirds of households in FB&H (64,9%) are connected to the sewage network, more so in urban (92,7%) than in rural (46,3%) areas.

Solid waste is hygienically disposed of in 88,7% households, more commonly in urban (98,5%) than in rural (82,1%) areas.

4.1.3.3 Satisfaction with housing conditions

More than three-quarters of households (79,1%) stated that they are very satisfied or satisfied with their housing conditions, while 7,5 % have stated that they are very unsatisfied or unsatisfied with their housing conditions.
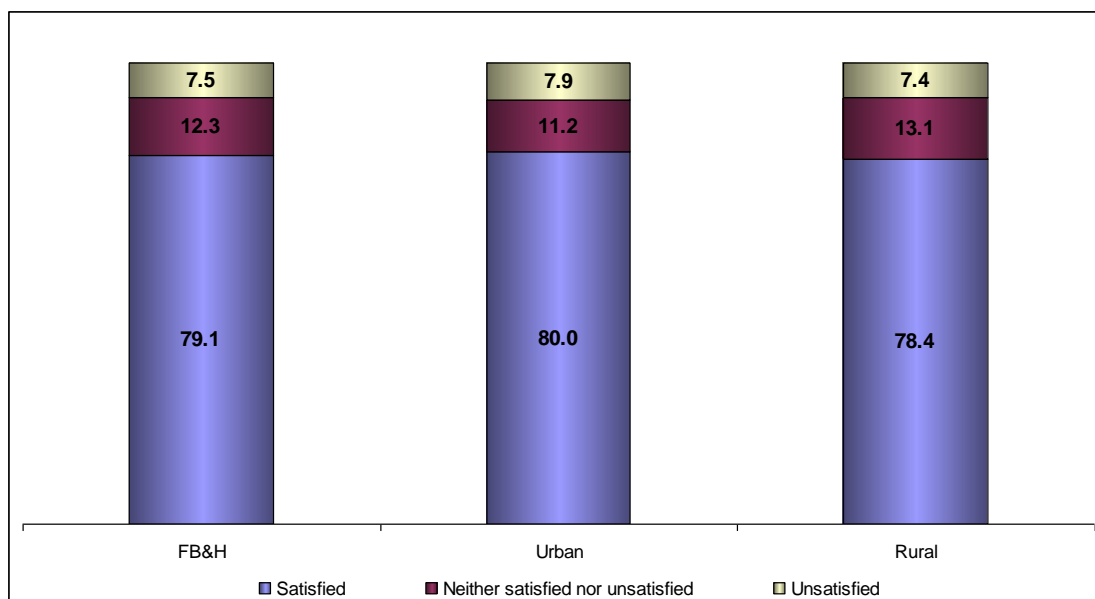
Graph 12 - *Satisfaction with housing conditions in the FB&H, %*

4.2 Survey results relating to the adult population aged 18 and over

A total of 3843 respondents from the Federation of BiH took part in the survey. The response rate was a high 96,9%, slightly higher in rural (97,2%) than in urban (96,5) areas.

The highest response rate was recorded in the Posavina canton (100,0%), while the lowest was in the Bosnian Podrinje canton (88,3%)

	Sample	Response rate	
		N	%
FB&H	3965	3843	96.9
Urban	1602	1546	96.5
Rural	2363	2297	97.2
Una – Sana Canton	481	476	99.0
Posavina Canton	66	66	100.0
Tuzla Canton	864	825	95.5
Zenica - Doboj Canton	640	636	99.4
Bosnian Podrinje Canton	51	45	88.3
Central Bosnia Canton	421	414	98.3
Herzegovina - Neretva Canton	367	359	97.8
West Herzegovina Canton	130	130	100.0
Sarajevo Canton	828	778	94.0
Canton 10	117	114	97.4

Table 3 - Response rate in the FB&H

An almost identical percentage of male and female respondents took part in the study, 50,4% and 49,6% respectively. The highest percentage of respondents was aged 45-54 (19,3%), while the lowest was 18-24 (12,7%).

The highest percentage of female respondents is present in the 45-54 age group (20,4%), while the highest percentage of male respondents can be found in the 65 and over age group (18,3%).
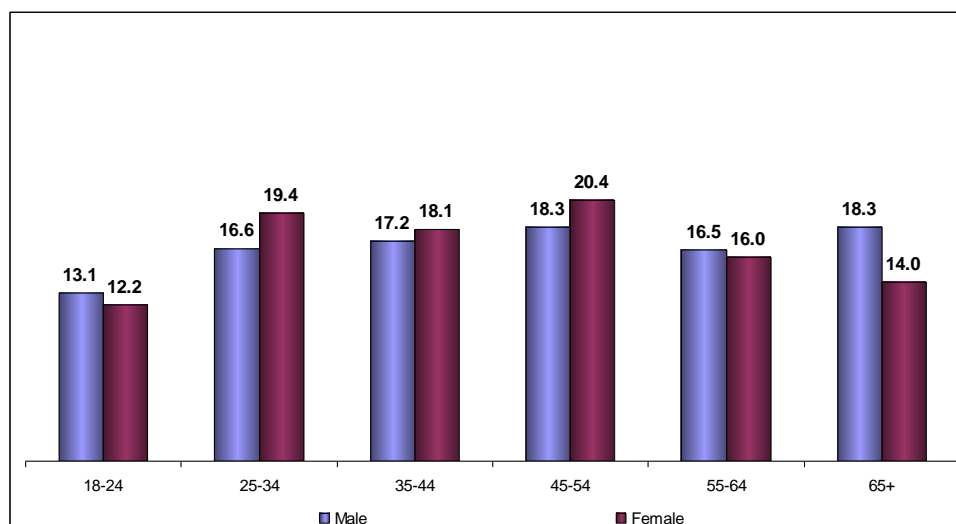
Graph 13 - *Respondents by sex and age group in the FB&H, %*

The analysis of survey results was conducted in accordance with the selected indicators which are displayed by Federation of BiH, settlement type, sex, age structure and education level. Due to the large quantities of survey data obtained, results have been presented in relation to the variables which point to significant similarities or differences with the set aims of the survey.

4.2.1 Health status

4.2.1.1 Self-assessed health status

Almost three-quarters of respondents in FB&H (CI: 71,47-74,28) asses their health as good or very good, without significant differences between respondents in urban (73,3%) and rural areas (72,6%). There were also no significant differences in the self-assessment of health as good or very good between the sexes, where 73,6% of male (CI: 71,61-75,53) and 72,2% of female (CI: 70,14-74,17) asses their health as good or very good.

Respondents In the 18-24 age group assessed their health as good or very good (CI: 94,61-97,97) in highest percentage of the different age group (96,3%). The percentage of respondents assessing their health as good or very good decreases in opposite proportion to age and is lowest (45,8%) with respondents aged 65 and over (CI: 41,84-49,68).

The percentage of respondents assessing their health to be good or very good was lowest with respondents without education (38,4%) and increased in line with the level of education, being the highest with tertiary education respondents (83,9%).
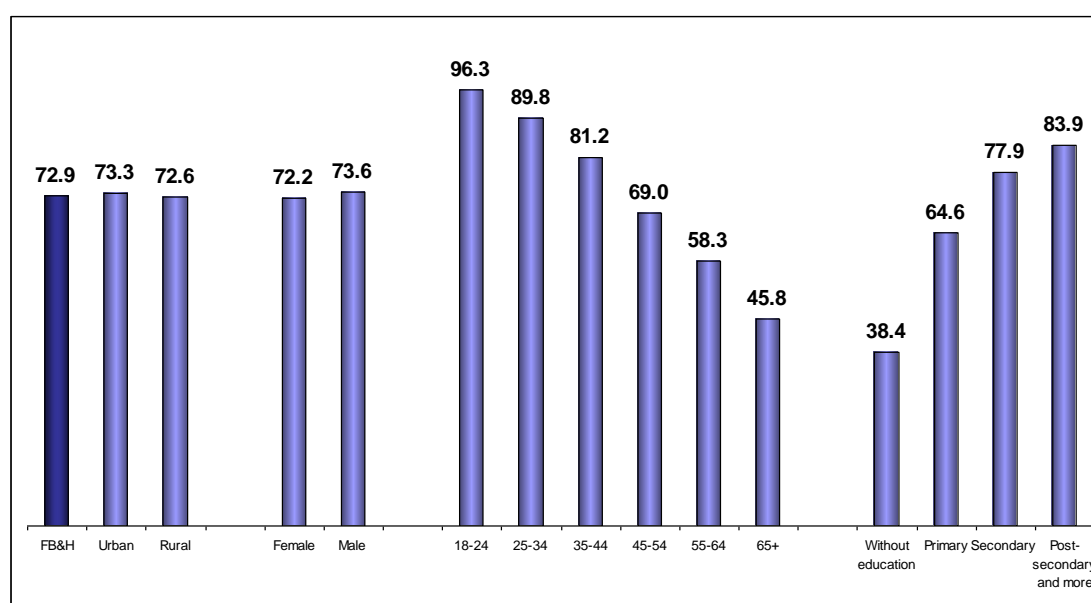
Graph 14 - *Respondents which assessed their health as good or very good, by settlement type, age, sex and education level in the FB&H, %*

4.2.1.2 Satisfaction with life

More than three-quarters of respondents in the FB&H (76,3%) are satisfied or very satisfied with their lives (CI: 74,98-77,67), without significant differences between respondents in urban (75,8%) and rural areas (76,7%).

In terms of the sexes, around three quarters of male (77,7%) (CI: 73,11-76,96) and female (75,0%) (CI: 75,78-79,53) in the FB&H are satisfied or very satisfied with their current life.

The highest percentage of respondents (87,7%) that are satisfied or very satisfied with their life is in the 18-24 age group (CI: 84,73-90,58). This percentage falls as age increases and is lowest (63,5%) with respondents aged 65 and over (CI: 59,74-67,32).

The percentage of respondents that are satisfied or very satisfied with their current life was lowest with respondents without education (50,4%) and increased in line with the level of education, being the highest with tertiary education respondents(89,1%).
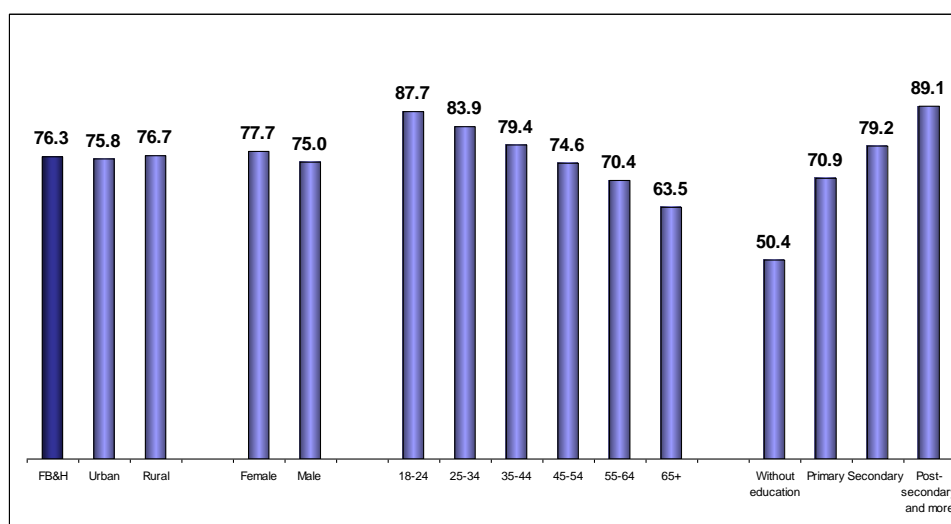
Graph 15 - *Respondents that are satisfied or very satisfied with their life, by settlement type, age, sex and education level in the FB&H, %*

4.2.1.3 Symptoms, diseases, conditions and injuries

4.2.1.3.1 The most common symptoms and diseases

In the month preceding the survey the most common health related problems and symptoms present among the respondents in the Federation of BiH were headache (46,8%), back pains (44,9%), neck/shoulder pains (35,3%), sleeplessness (27,9%), joint pains (23,8%) and frequent urination (18,3%).
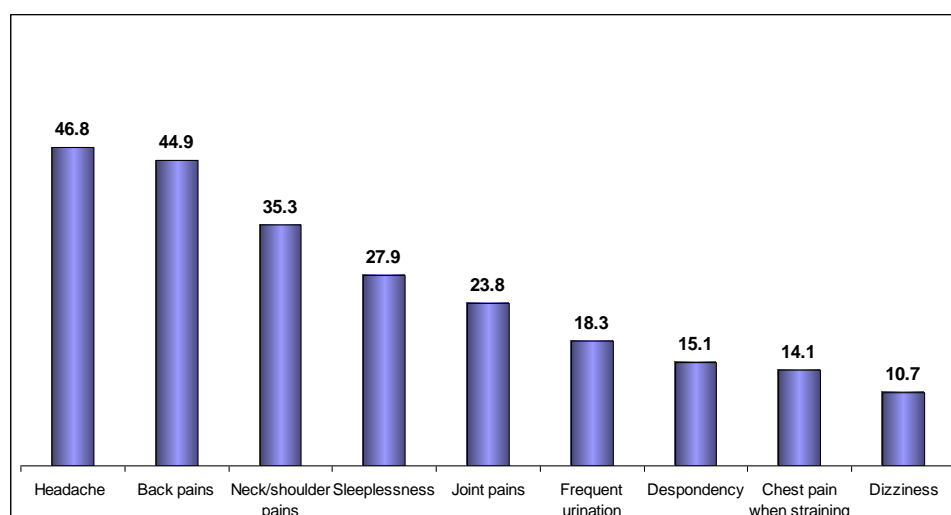
Graph 16 - *Leading health problems and symptoms among respondents in the FB&H, %*

The frequency of all the above mentioned health problems and symptoms is more prominent with female and older age groups.
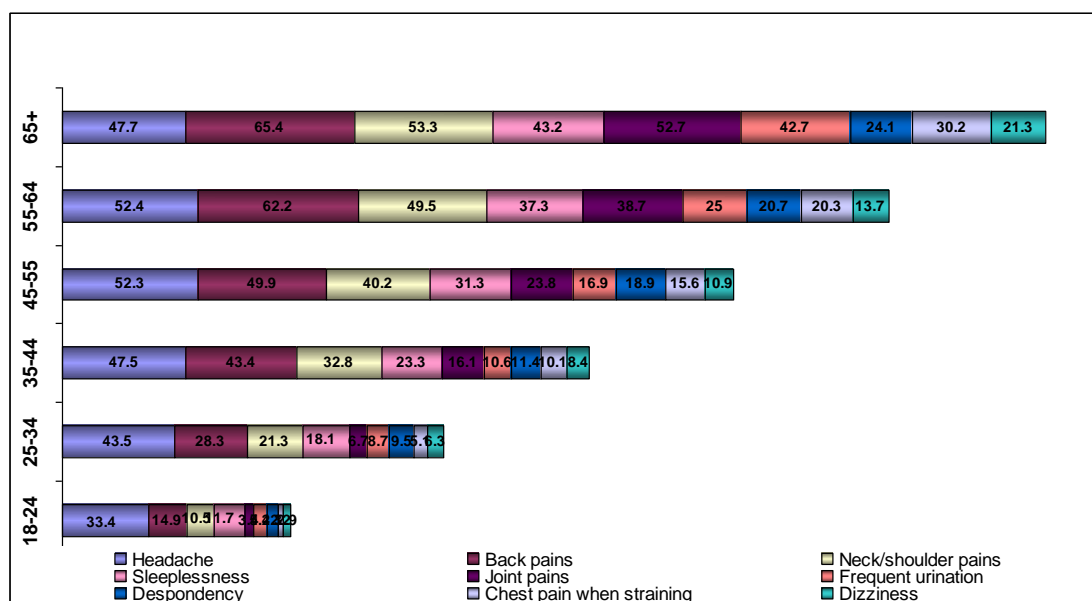
Graph 17 - *Leading health problems and symptoms across age groups in the FB&H, %*

Respondents have reported high blood pressure (21,3%), increased blood fats (12,8%), rheumatic joint disease (9,8%), diabetes (9,6%), and depression (4,4%) as the most frequent health disorders diagnosed by their doctor. This was without significant difference between respondents in urban and rural areas.

2,8% of respondents reported that they have been diagnosed with a stroke by a doctor at least once in their life, 2,6% stated the same for a heart attack, 1,5% for cancer etc. This was the case more commonly among older respondents of both sexes. (*p=0,000*).
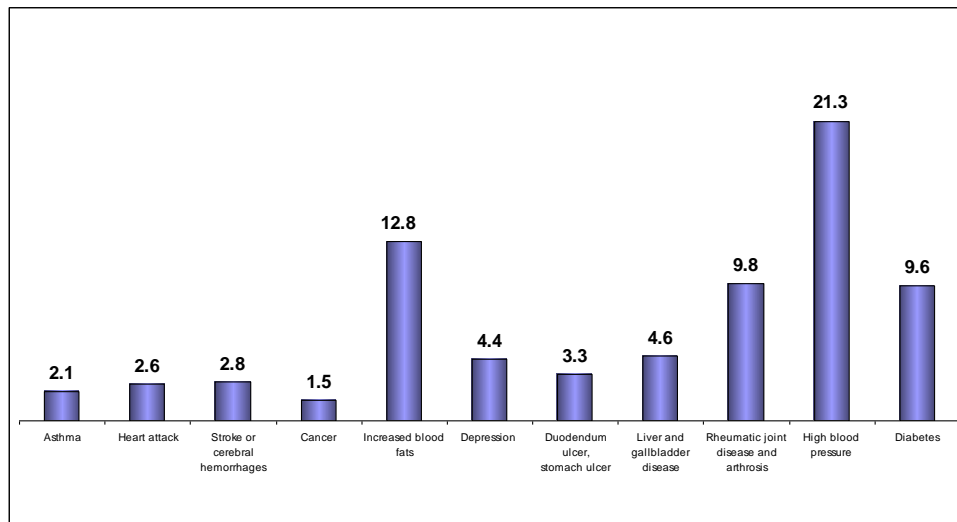
Graph 18 - *Respondents that have ever suffered/ are suffering from the aforementioned illnesses/ conditions diagnosed by a doctor in the FB&H, %*

Female respondents mostly suffer from increased blood pressure (22,5%), rheumatic disease (12,1%), increased blood fats (3,8%), diabetes (9,5%), depression (5,6%) etc. Male were similarly most often troubled by increased blood pressure (20,1%), increased blood fats (13,8%), rheumatic disease (12,1%) and diabetes (9,5%).

Graph 19 - *Respondents, by sex, that have ever suffered/ are suffering from the aforementioned illnesses/ conditions diagnosed by a doctor in the FB&H, %*
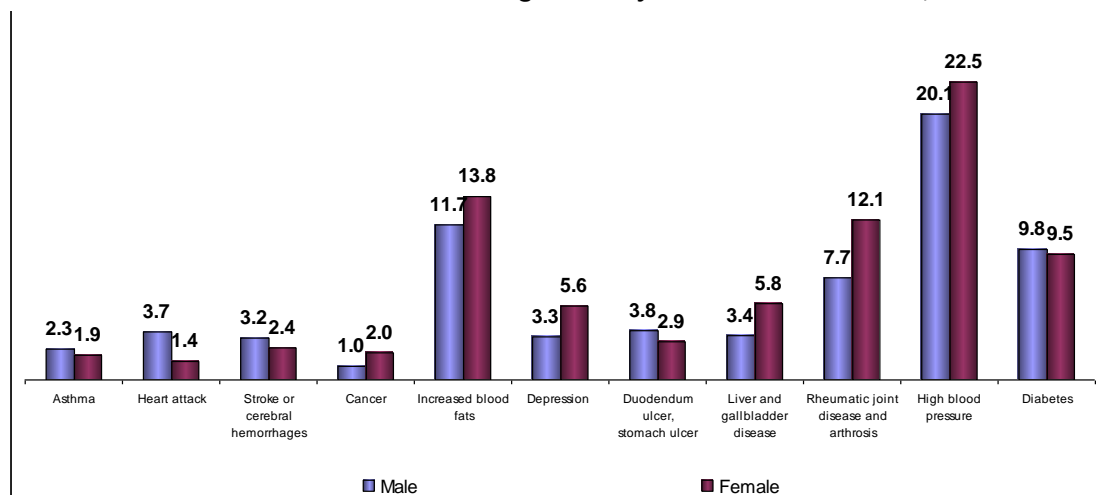
The frequency of diseases and conditions diagnosed by a doctor is significantly higher among older age groups of respondents.
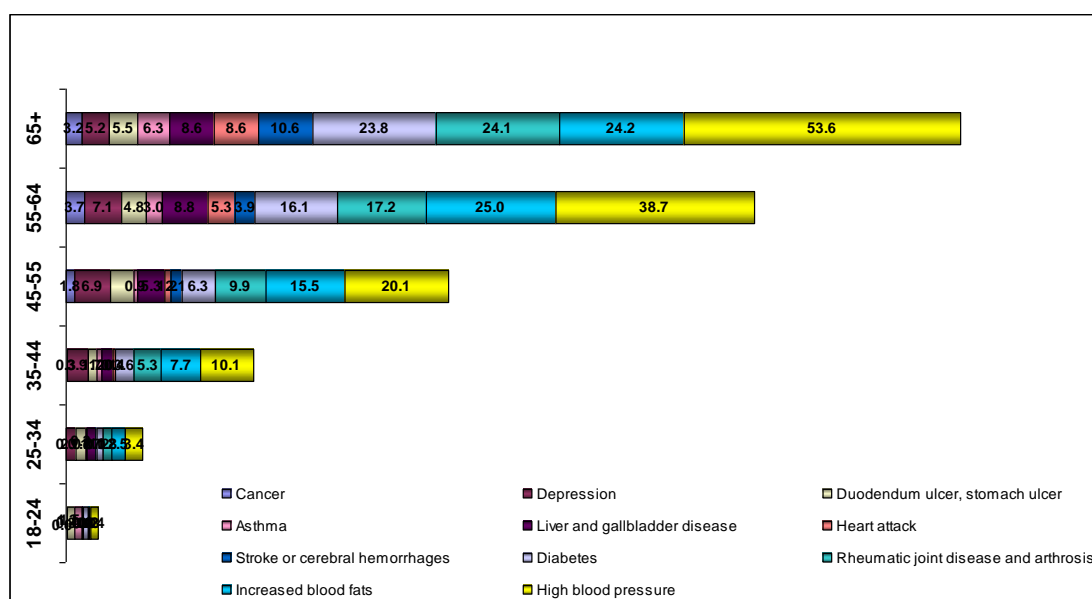
Graph 20 - *Respondents, by age group that have ever suffered / are suffering from the aforementioned illnesses / conditions diagnosed by a doctor in the FB&H, %*

4.2.1.3.2 Mental health

The estimate of the mental health of the adult population of the Federation of BiH has been made by determining the presence of stress and emotional problems.

4.2.1.3.2.1 Exposure to stress/ pressure

A little less than half of the respondents in the Federation of BiH (44,8%), a statistically significant percentage (*p=0,000*), have been under stress/ pressure in the month preceding the survey. Exposure to stress was almost equal between urban (46,9%) and rural areas (43,4%). Exposure to stress was highest among respondents without education (50,0%).

Presence of stress was very similar between female (46,7%) and male (42,9%), which is statistically significant (*p=0,000*). Exposure to stress was highest among respondents aged 45-54 years (51,8%) and 55-64 years (50,1%), while it was lowest among respondents aged 18-24 years (30,5%), which is again statistically significant (*p=0,000*).

Graph 21 - *Respondents exposed to stress/ pressure, by age group and sex in the FB&H, %*
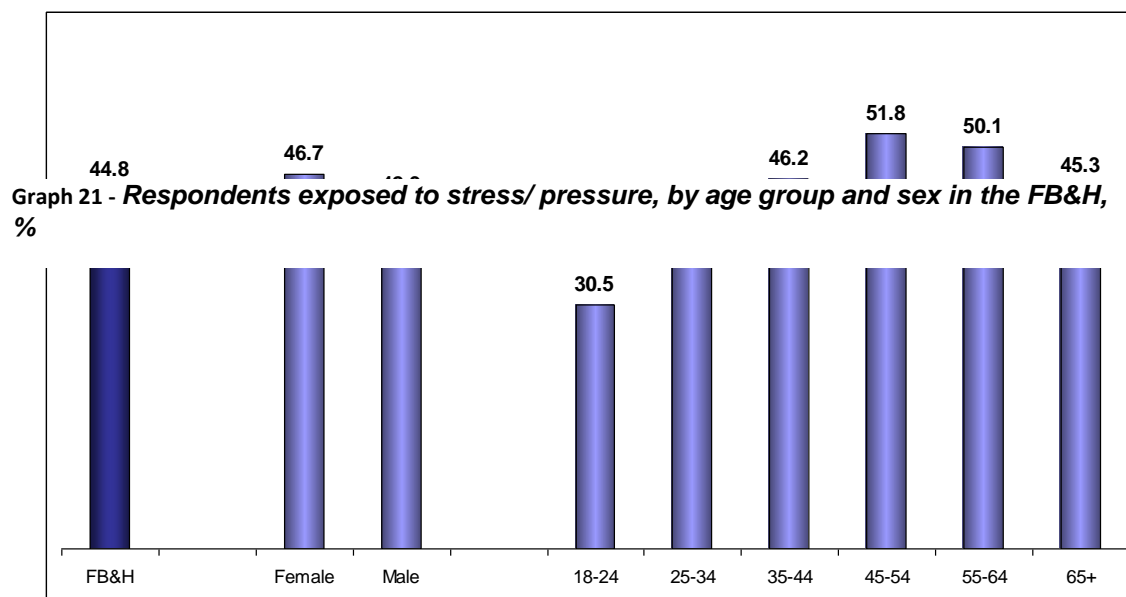
4.2.1.3.2.1 Presence of emotional problems

Emotional problems (sadness, moodiness, anxiety, despondency) were experienced in the month preceding the survey by almost a third of respondents in the Federation of BiH (28,4%), almost equally between respondents in urban (29,3%) and rural areas (27,8%).

The presence of emotional problems is more common among female (33,0%) than male (23,9%), and increases with age, being most prominent with respondents aged 45-54 (34,6%) and 65 and over (35,2%).
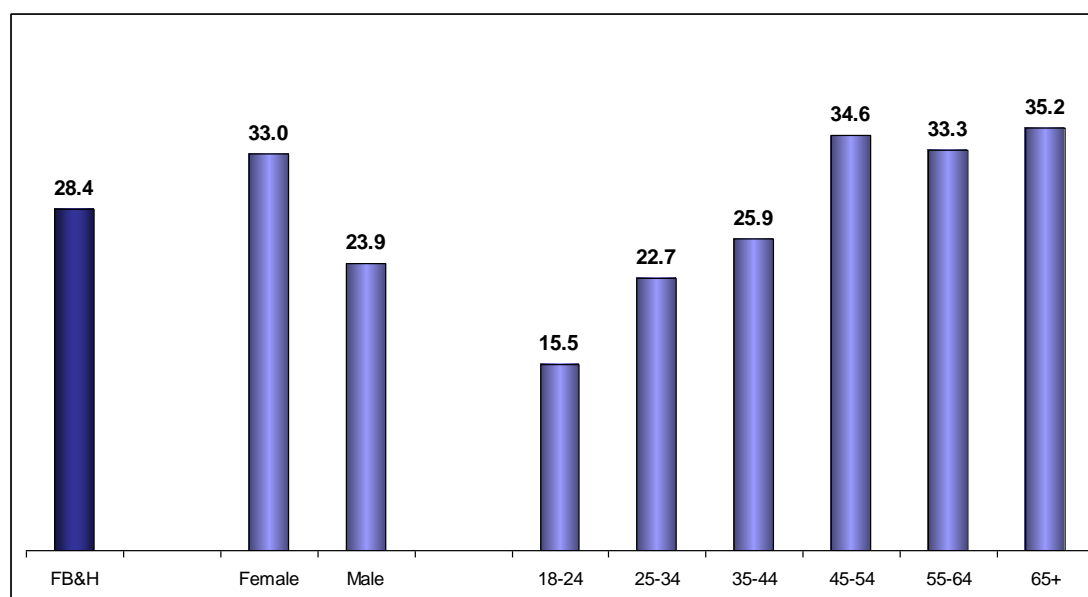
Graph 22 - *Presence of emotional problems among respondents, by sex and age in the FB&H, %*

4.2.1.3.3 Ability to perform daily activities

The ability of adult population members in the Federation of BiH to perform daily activities was estimated based on statements of respondents regarding the existence of a long term illness or condition that has prevented them from performing usual daily activities during, at least, the last 6 months. Statistically significant percentage of respondents in the Federation of BiH (8,5%) stated that they have a long-term illness or health related problem because of which they cannot perform daily activities. This percentage was almost equal among male (8,7%) and female (8,3%) (*p=0,000*). 7,2%
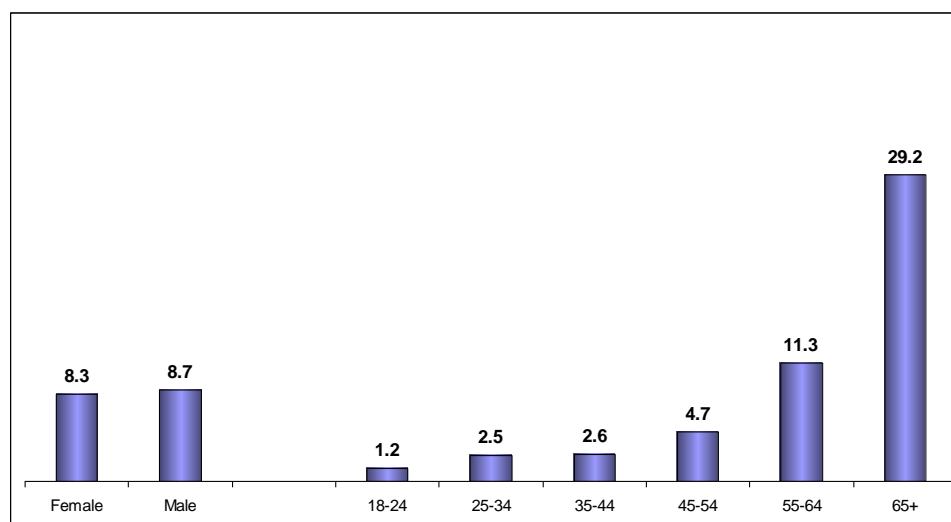
Graph 23 - *Respondents, by age and sex, that could not perform the usual daily activities during the past 6 months because of a long term illness or condition in the FB&H, %*

of respondents in urban and 9,4% of respondents in rural areas are unable to perform daily activities because of a long-term health related problem.

The percentage of respondents that are unable to perform daily activities because of a long-term health related problem increases in line with age, and is lowest among respondents aged 18-24 (1,2%), and highest among respondents aged 65 and over (29,2%).

Significant differences have been recorded between different education levels. Respondents without education are most numerous in having limitations in performing daily activities because of a health related problem (35,4%), while this was significantly less the case with respondents with tertiary education (2,9%). Among respondents with limitations in performing daily activities around a third (32,4%) was very limited in doing so. There were no differences in terms of this between different settlement types. There were, however, differences between education levels, where respondents without education (49,2%) were significantly more limited in performing daily activities than respondents with higher levels of education.

More than two-third of respondents stated that they are limited in performing daily activities, but not severely so (67,6%), which did not differ significantly between male (68,7%) and female (66,4%).

Only around a third of respondents (31,5%) with limitations in performing daily activities stated that they can lay down and get up from bed, dress and undress, eat, use the toilet, and take baths and showers without difficulty, less so respondents in urban (25,8%) than those in rural areas (34,5%).

A higher percentage of male (33,7%) than female (29,2%) are able to perform all the above mentioned daily activities, the same being true for younger respondents in comparison to older ones.
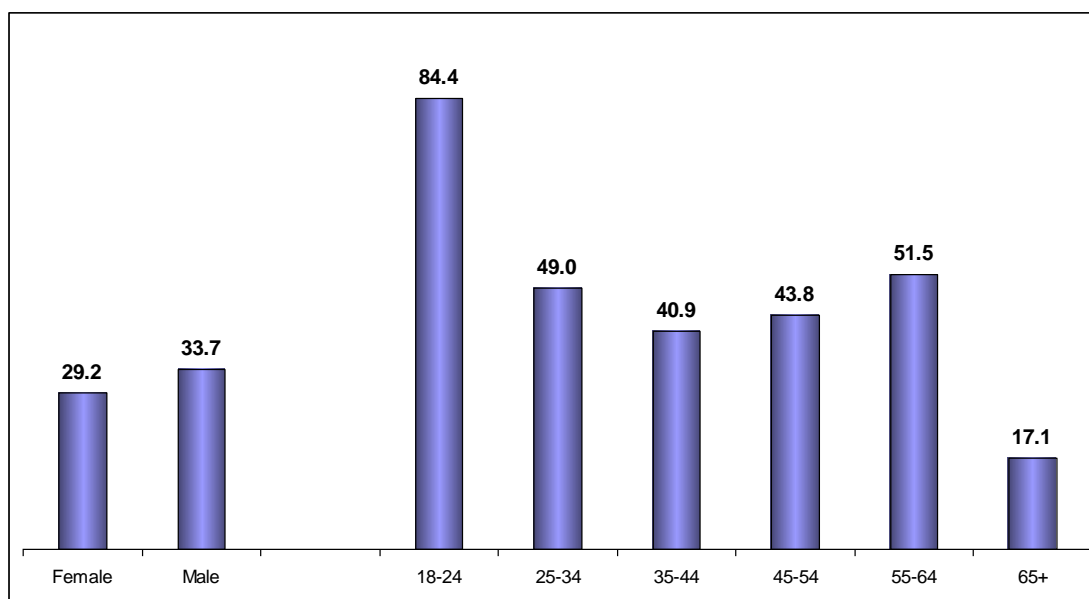
Graph 24 - *Respondents, by sex and age, that can independently and without difficulty perform all the five daily activities in the FB&H, %*

The majority of respondents in the Federation of BiH can eat without difficulties (71,5%), which applies to 69,4% of female and 73,4% of male. 43,4% of respondents in the Federation of BiH can lay down and get up from bed and sit down and get up from a chair without difficulties, which applies to 46,3% of male and 40,4% of female.
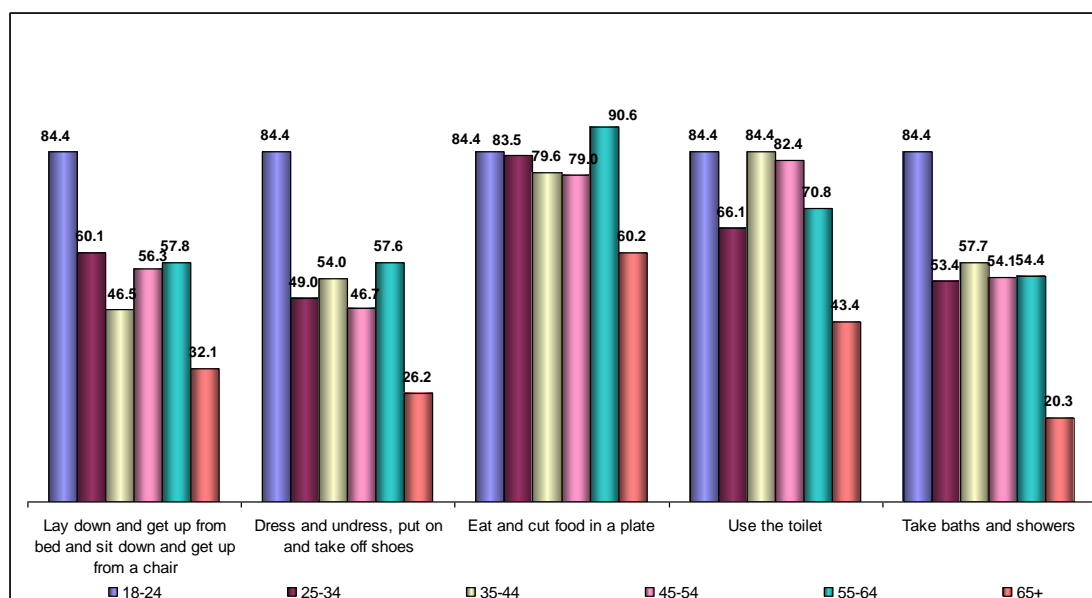
Graph 25 - *Respondents, by sex and age that can independently and without difficulty perform other daily activities in the FB&H, %*

64,4% of respondents that have limitations in movement are capable of moving about independently, which is less the case among respondents in urban (58,9%) than in rural areas (67,3%). A larger number of male (67,3%) than female (61,3%) are capable of moving about independently. This also applies to respondents in

younger age groups (84,4% of respondents in the 18-24 age group and 53,3% of respondents in the 65 and over age group).
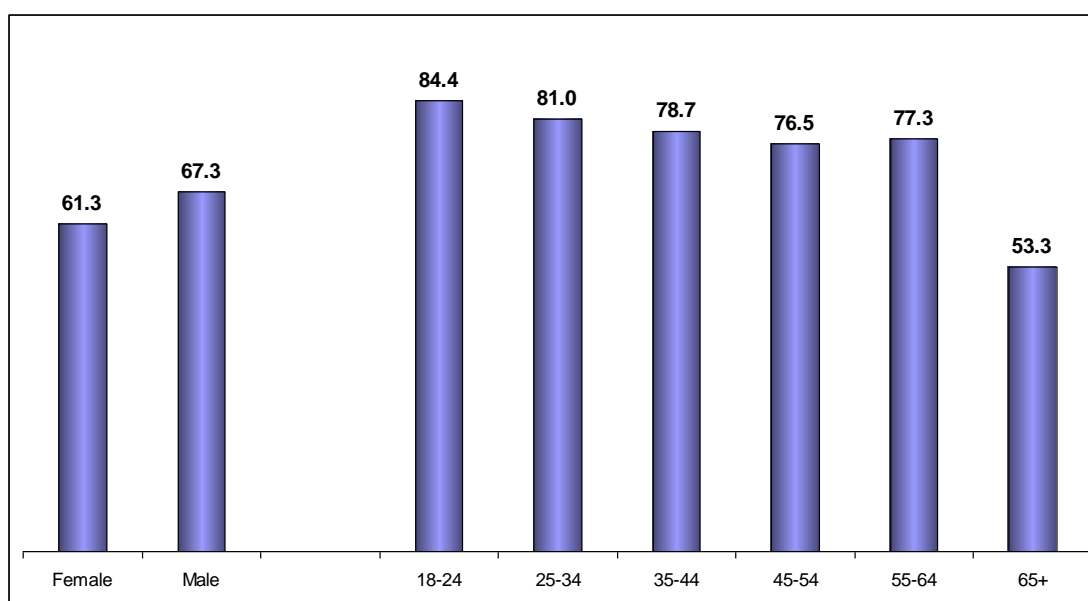
Less than half (43.6%) of the respondents experiencing limitations in movement due to health problems can independently cross a distance of 500m without difficulties, less so respondents in urban (34.8%) than those in rural areas (47, 5%), and slightly more male (46.2%) than female (40.4%).

4.2.1.3.3 Oral health

Only 17,3% of respondents in the Federation have all their teeth (28 teeth). There are slightly more respondents with all their teeth in urban (20,0%) than in rural areas (15,6%). An equal percentage of male (17,5%) and female (17,1%) have all their teeth. The number of respondents that have all their teeth has a significant decrease in line with age, and is lowest with both male (2,4%) and female (1,4%) in the 65 and over age group (*p=0,000*).

The highest percentage of respondents that have all their teeth can be found in the 18-24 (53,6%) age group, after which the percentage of respondents that have all their teeth significantly falls in line with age, and is lowest in the 65 and over age group (2%) (*p=0,000*).
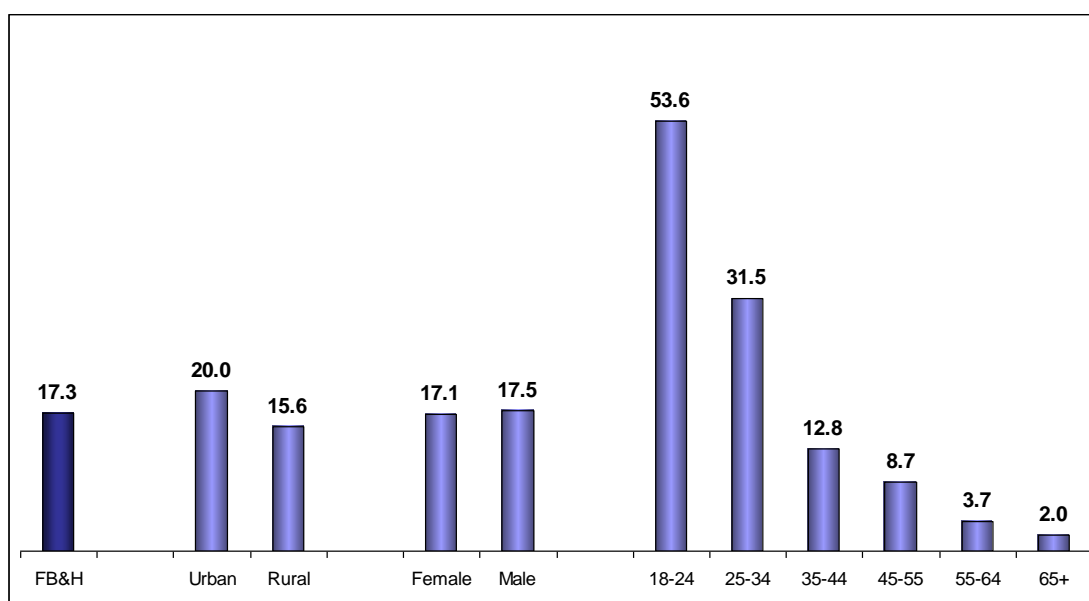
Graph 27 - *Respondents that have all their teeth in the FB&H, %*

12,3 teeth are missing on average per one respondent in the FB&H, 12,8 among male and 11,8 among female. The average number of missing teeth for both sexes significantly increases in line with age (*p=0,000*), and is highest in 65 and over age group (20,9 missing teeth on average among female and 20 among male).
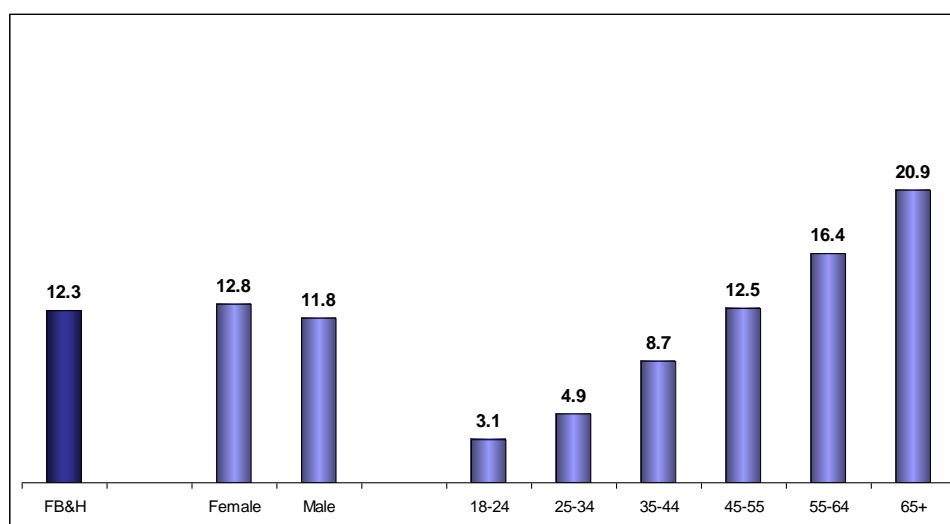
Graph 28 - *Average number of missing teeth per respondent, by sex and age in the FB&H*

13,8% of respondents have a full denture, which applies to more female (16,5%) than male (11,4%), and most commonly to respondents in the 65 and over age group (35,8%).

Just under a quarter of respondents (22,2%) have a partial denture, the highest number of which is in the 45-54 age group (30,7%) and in the 55-65 age group (30,2%).
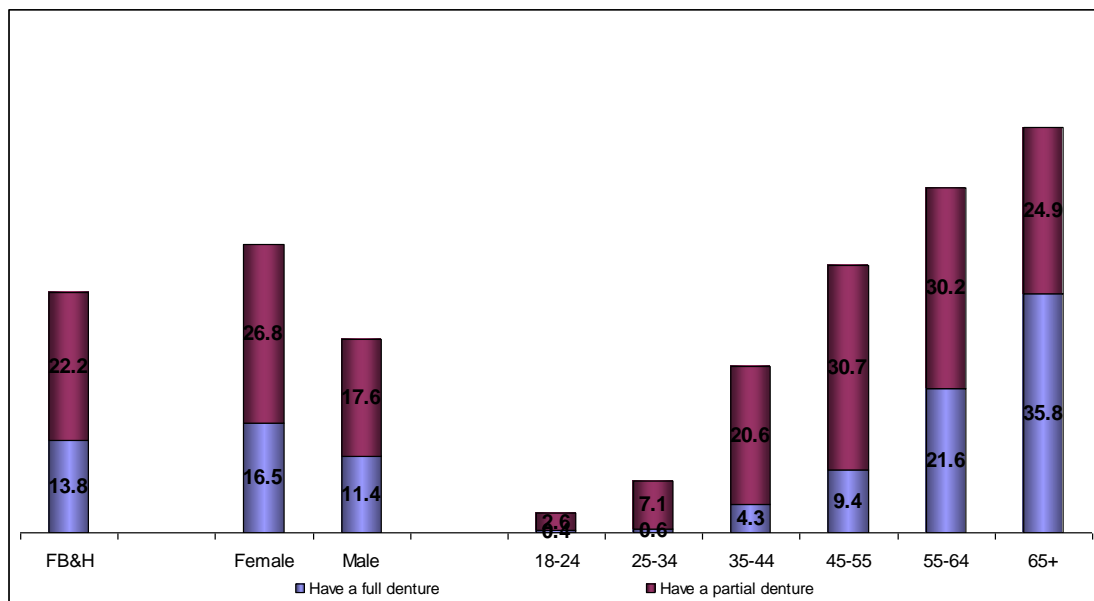
Graph 29 - *Respondents with a denture (full or partial), by age and sex in the FB&H, %*

4.2.1.3.4 Exposure to violence

4.2.1.3.4.1 Exposure to any form of physical violence

1,2% of respondents reported that they are exposed to a form of physical violence (at home, in school, at work or elsewhere). There were no significant statistical differences regarding this between male (*p=0,093*) and female (*p=0,698*) or age groups (*p=0,689*).

2,1% of respondents reported that they are exposed to a form of psychological violence (at home, in school, at work or elsewhere). There were no significant statistical differences regarding this between male (*p=0,786*) and female (*p=0,424*), or between different age groups (*p=0,942*).

The highest number of respondents (24,8%) that are exposed to a form of physical or psychological violence have turned to parents and family for help, more so in rural (35,0%) than in urban (11,5%) areas. 22,6% of respondents have contacted the police, more so in urban (29,6%) than in rural areas (17,2%). 9,3% of respondents have turned to health care professionals for help, 10,0% of respondents in urban and 8,8% of respondents in rural areas have done so.

Graph 30: Asking for help because of exposure to physical or psychological violence in the FB&H, %

Graph 30 - *Asking for help because of exposure to physical or psychological violence in the FB&H, %*
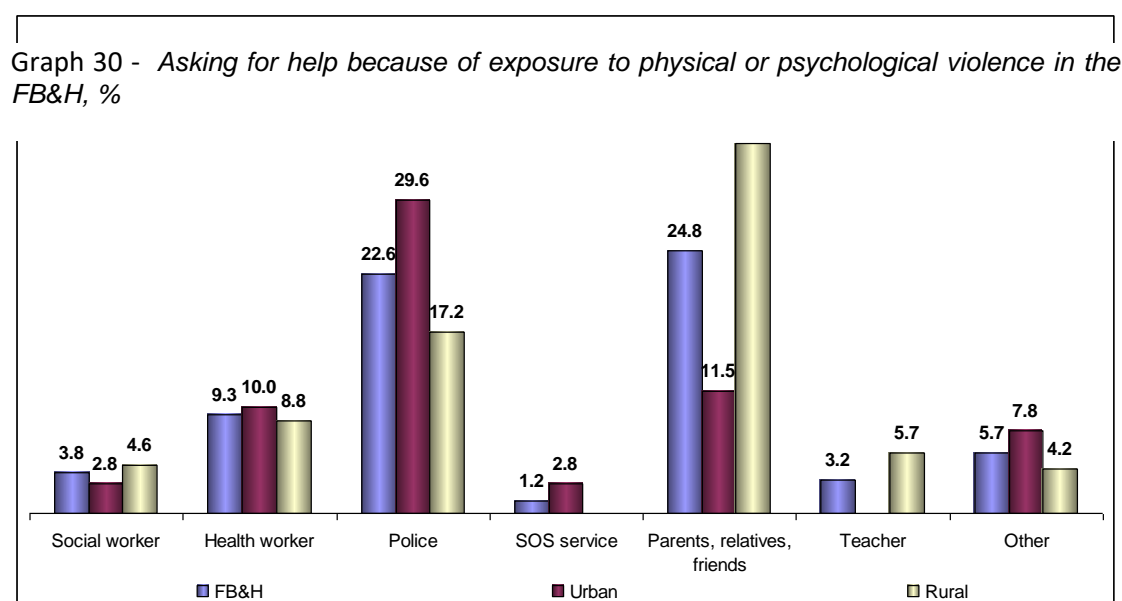
4.2.1.3.5 Injuries

Only 5,5% of respondents in the Federation of BiH confirm that they have been injured during the past 12 months, of which more so respondents in rural (5,9%) than those in urban areas 4,9%.

More male (7,5%) than female (3,5%) have been injured during the past 12 months. Most injuries have been registered in the 18-24 age group (7,2%) and least in the 65 and over age group (4,4%).
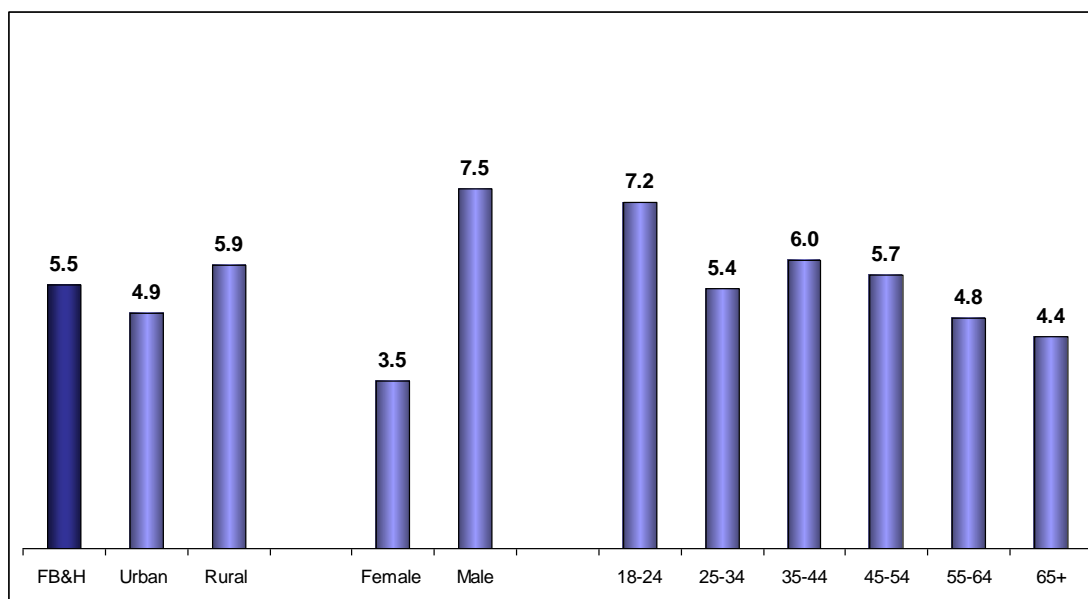
Graph 31 *Respondents injured during the past 12 months, by sex and age in the FB&H, %*

In terms of the place of occurrence of the last injury, injuries at home (23,9%) and at work (23,9%) are the most common injury locations among respondents. Injuries at work are the most prevalent among respondents in urban areas (24,3%), while the same is true for injuries at home among respondents in rural areas (26,2%).
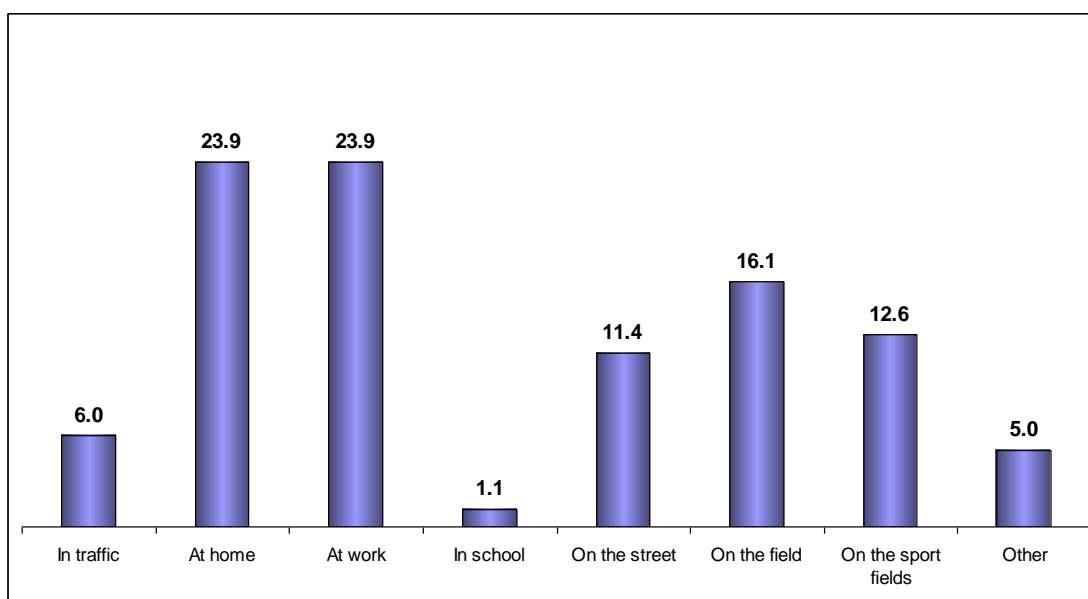

Graph 32 - *Injured respondents by location of injury in the FB&H, %*

Female (48,0%) have been injured at home more often than male (12,8%), while the opposite is true for injuries at work, which are more common among male (31,1%) then female (8,2%). Injuries on the sports field are dominant among respondents in the 18-24 age group (43,7%), injuries at home are prevalent among respondents in the 65 and over age group (58,6%), while injuries at work and on the land are prevalent among respondents aged 25-64.

4.2.1.3.6 Absence from work

Less than a fifth of employed respondents (19,5%) have been absent from work because of health related problems in the past 12 months, less so respondents in urban (18,3) than those in rural areas (20,6%). There are no significant differences in absence from work in relation to the education levels or the sexes: tertiary education (20,2%), secondary education (19,4%), elementary education (20,3%), male (19,3%)., female (19,9%)

The average number of days of absence in the past 12 months is 44,8, higher in rural (49,1) than in urban areas (39,6) and significantly higher among male (53,3) than female (29).
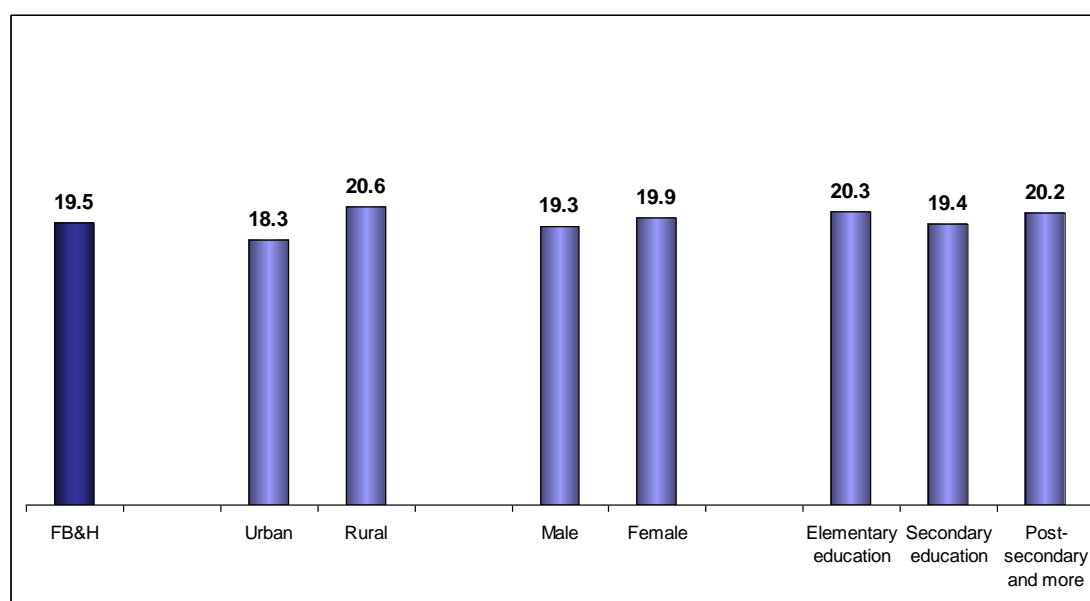
Graph 33 - *Respondents, by settlement type and education level, absent from work in the past 12 months because of a health related problem in the FB&H, %*

4.2.2   Health related risks

4.2.2.1 Health related risks at the place of residence

Respondents consider the top health related risk factors at their place of residence to be: air pollution (22,0%), violence and crime (19,5%) and water pollution (13,8%). Knowledge about health related risk factors is in general better in urban than in rural areas and improves with higher education levels.
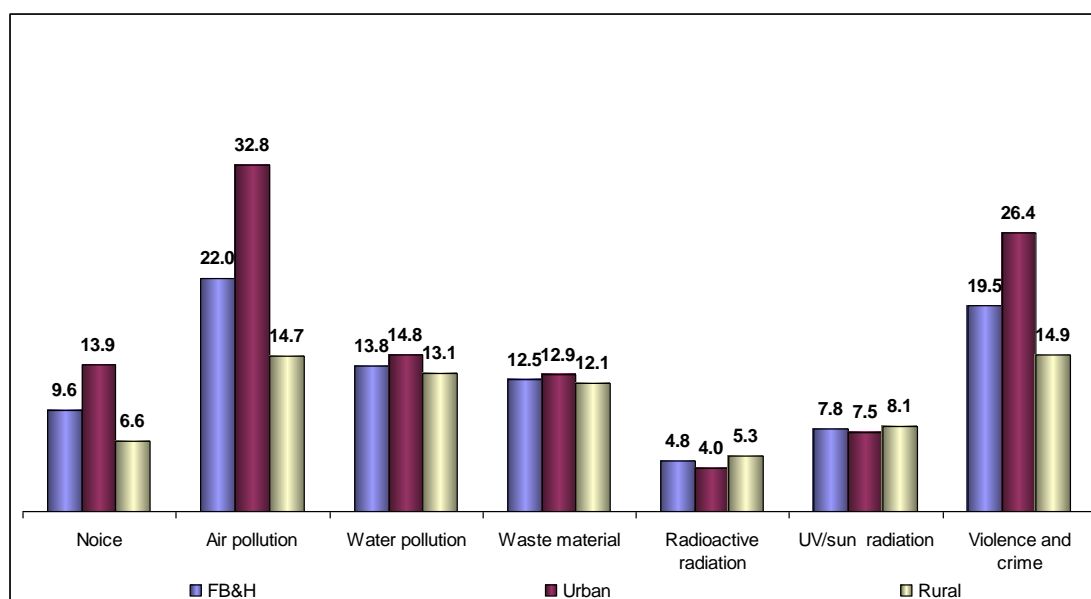
Graph 34 - *Respondents aware of health related risks at the place of residence in the FB&H, %*

7,8% of respondents believe that a health related risk from UV radiation exists in their place of residence, without significant difference between respondents in urban and rural areas.

4.2.2.2 Awareness of risk inducing behavior patterns

Every seventh respondent in the FB&H (14,8%) believes that because of his/her behavior and habits he/she may acquire heart and cardiovascular disease, increased blood pressure (13,4%), obesity (13,2%) etc. There was no significant difference regarding this between respondents in urban and rural areas.
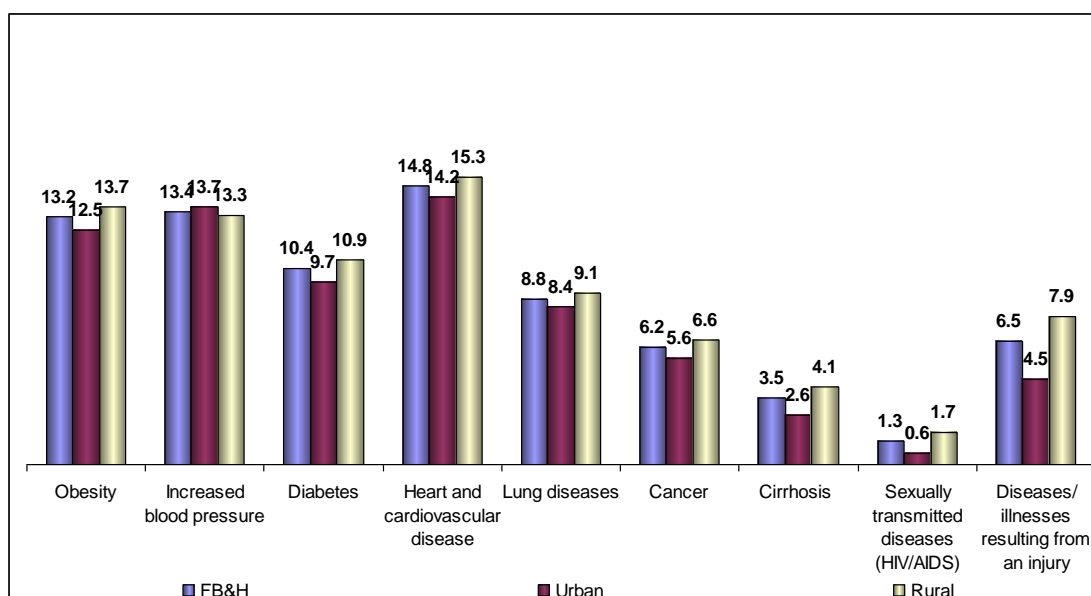
Graph 35 - *Respondents, by settlement type, that believe their behavior and habits my result in them acquiring the following diseases in the FB&H, %*

Female most commonly believe that they may suffer from heart and cardiovascular disease, followed by obesity and increased blood pressure. Male similarly believe that their behavior may induce heart and cardiovascular disease, followed by increased blood pressure and obesity. Awareness about the connection

between behavior/ habits and risks of acquiring certain diseases improves in line with age and is best among respondents in the 45-54 age group.
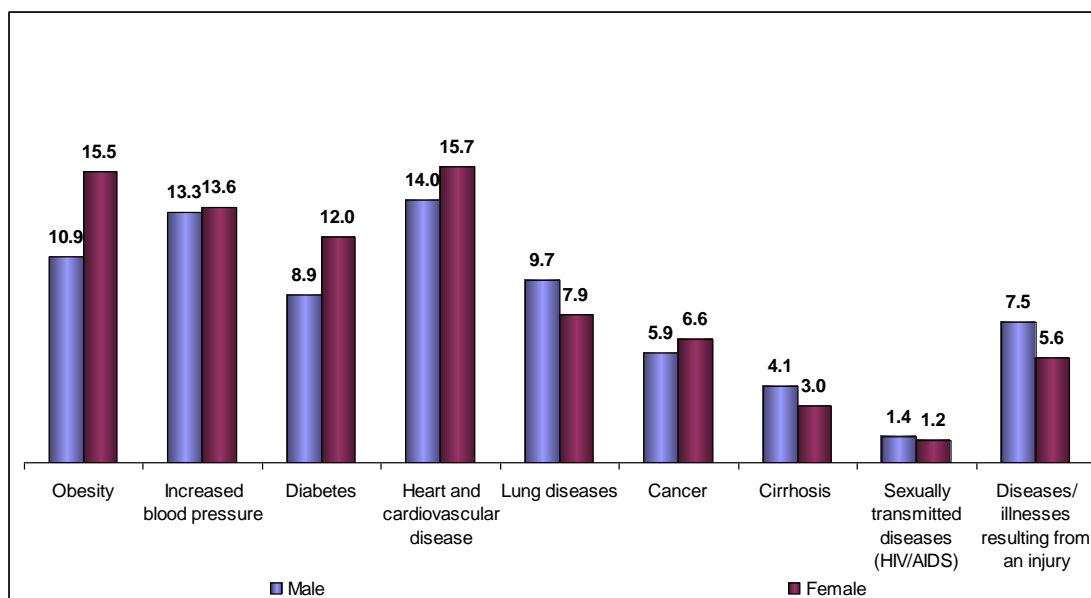
Graph 36 - *Respondents, by sex, that believe their behavior and habits my result in them acquiring the following diseases in the FB&H, %*

Respondents in the FB&H rated nutrition (72,1%) followed by physical activity and smoking (66,7% for both), then alcohol consumption (62,2%) and social activities (46,5%) as having most impact on their health. Differences in opinion among different genders and education levels exist on this question.
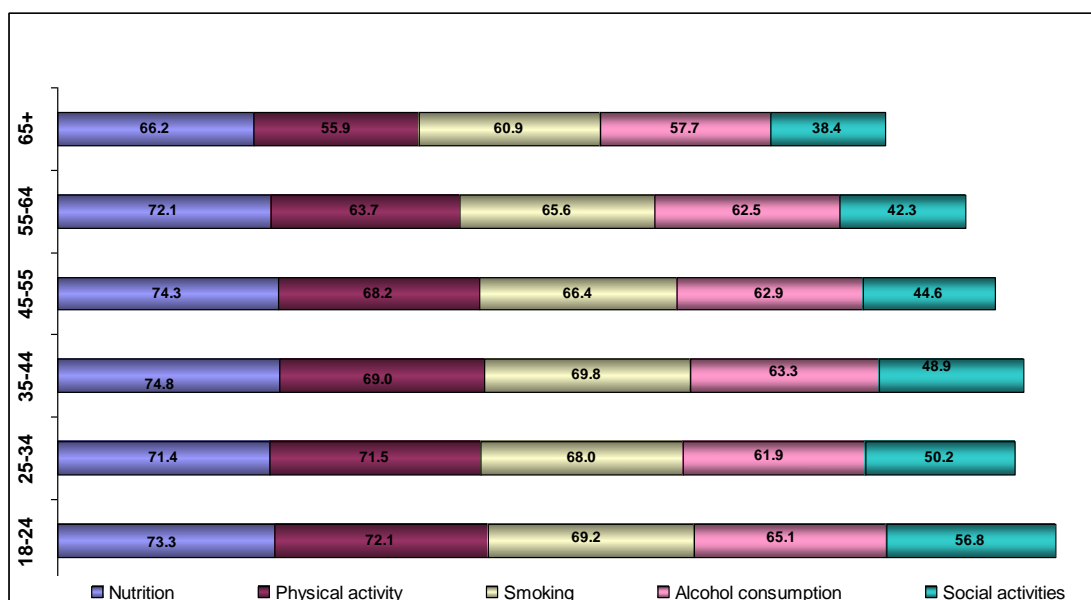
Graph 37 - *Respondents that believe the following factors have a large impact on health in the FB&H, %*

Almost a third the respondents that have changed their behavior in the past 12 months with the aim of improving their health, say that they have increased the consumption of fruit and vegetables (29,0%), decreased their fat intake (23,9%), and decreased their sugar intake (20,4%). All changes in habits and behavior aimed at

improving health, with the exception of physical activity, have an increased frequency among respondents in older age groups.

Respondents named a desire for a healthier lifestyle (20,1%) and illness (19,5%) as the main reasons for taking action. The reasons for taking action and changing habits and behavior among respondents without education is mostly illness, while a desire for a healthier lifestyle is the main reason for action among more educated respondents..

4.2.2.3 Nutrition

4.2.2.3.1 Regular consumption of three meals a day

A statistically significant percentage of respondents in the Federation of BiH (54,5%) state that they regularly have three meals a day (*p=0,017*). Respondents in rural areas do so somewhat more commonly (57,5%) than respondents in urban areas (50,1%). More than half of the male surveyed regularly have three meals a day (57,7%), out of which the highest percentage (63,4%) is in the 65 and over age (*p=0,040*). A little over half of the female surveyed (51,2%) also state that they regularly have three meals a day, without any statistically significant difference between different age groups (*p=0,225*). More than three-quarters of respondents (81,1%) confirm that they have the habit of having breakfast every day, out which the highest percentage is in the 65 and over age group. 91,8% of respondents have lunch every day, while 69,9% have dinner on a daily basis.
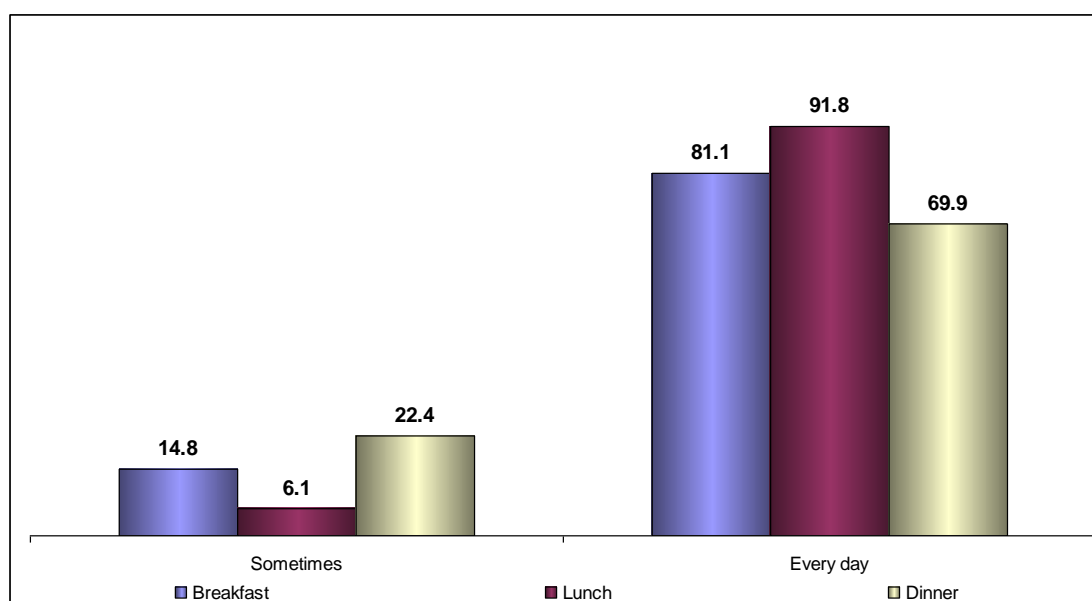
Graph 38 - *Respondents having three meals a day in the FB&H, %*

4.2.2.3.2 Consumption of milk, dairy products and fat content

A third of respondents (32,3%) in the Federation of BiH drinks at least one cup of milk a day, which is mostly true for respondents in the 65 and over age group (41,6%). Most or more than two-fifths (41,8%) of respondents drink milk that has a fat content between 1% and 3,2%. Less than half of the respondents drink milk with a fat content higher than 3,2% (17,8%). The lowest percentage of respondents (4,9%) drinks milk that has a fat content below 1%. Consumption of milk that has a fat content above 3,2% is reported by significantly more

respondents in rural (24,7%) than in urban areas (7,9%), as well as by respondents with lower education, and most commonly by respondents in the 35-44 age group (22,5%), without significant statistical differences between respondents of different sexes.

More than a third of respondents does not pay any attention to the fat content of milk (35%), without statistical difference between respondents in different types of settlement, and more so by male (39,7%) than female (31,1%), as well as mostly by respondents in the 18-24 age group (39,9%).
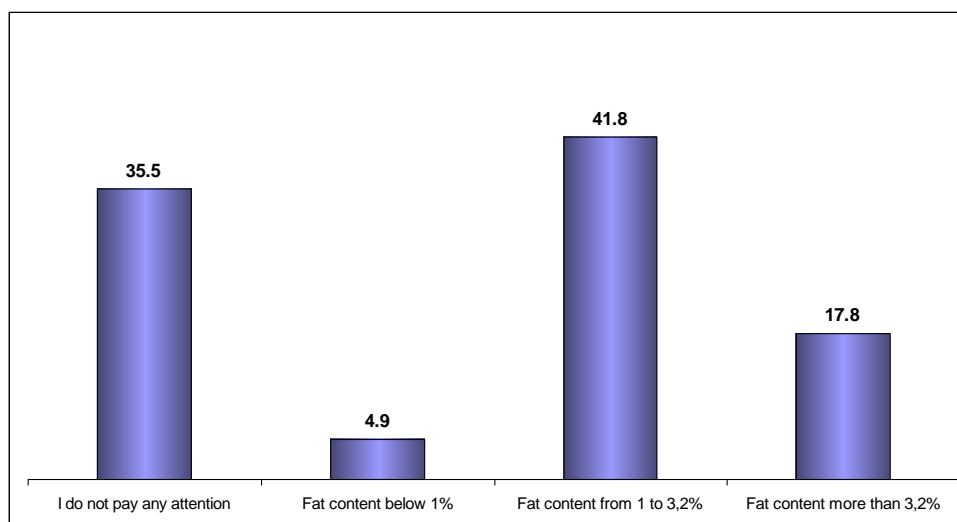
Graph 39 - *Milk consumption by fat content in the FB&H, %*

4.2.2.3.3 Consumption of bread

More than half of respondents in the FB&H most often consume white bread (52,0%), more so in rural (59,2%) than in urban areas (41,3%). Consumption of semi-white bread is confirmed by more than a third of respondents (33,2%), while 11,3% of respondents consume black bread, significantly more of which are located in urban (16,0%) than in rural areas (8,1%), and most of which are respondents with higher education (18,3%) and in the 65 and over age group (20,0%).
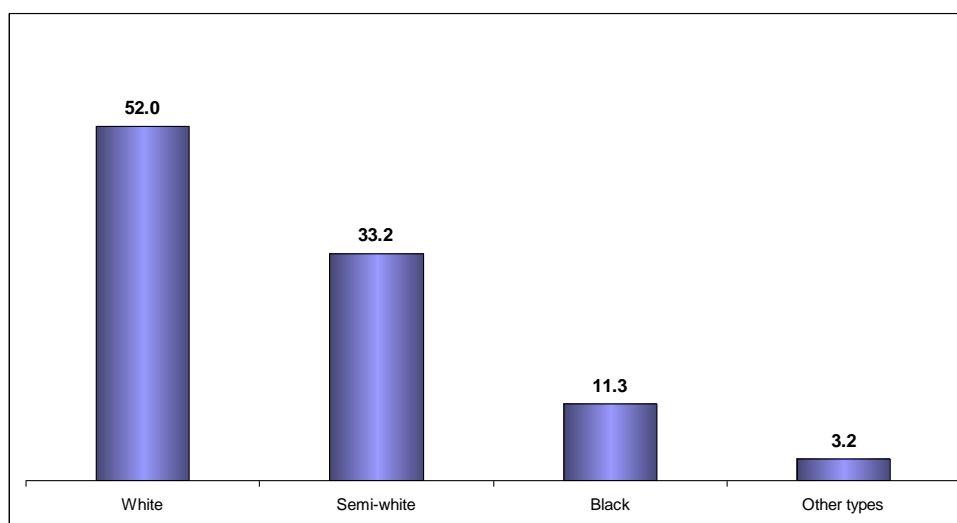
Graph 40 - **Bread consumption by type of bread in the FB&H, %**

Respondents in the Federation of BiH eat on average 6,1 loafs of bread per day.

50

4.2.2.3.4 Consumption of different types of fatty spreads

The most commonly used bread spreads among respondents in the Federation of BiH are cheese/ sour cream (23,2%) and pate (18,2%), more so among respondents in urban and rural areas, as well as more among educated respondents. Pate is consumed significantly more by respondents in the 18-24 age group (37,9%). Pate consumption decreases in line with age and is least frequent among responds in the 65 and over age group (3,0%).

4.2.2.3.5 Usage of fat in the preparation of meals

Of the fats daily used in the preparation of meals, respondents in the Federation of BiH most commonly use oils (89,1%), while fats of animal origin are used by 4,6% of respondents, more commonly so in rural (6,4%) than in urban areas (1,8%).

Consumption of vegetable fats and margarine is confirmed by only 3,6% of respondents.
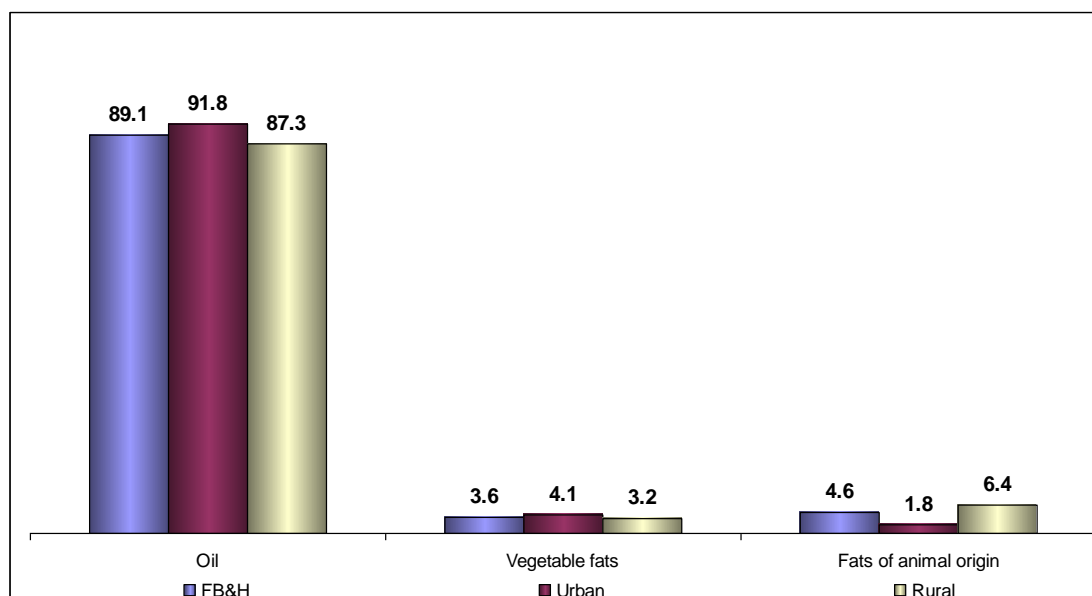
Graph 41 - *Most commonly used fats in the preparation of food in the FB&H, %*

4.2.2.3.6 Adding salt to food

A third of respondents never add salt to food (33,3%), while 7,2% always add salt before tasting, which is most common among respondents in the 18-24 age group (9,5%) (*p=0,001*).

8,9% of male add salt to food before tasting it, which is more often the case among younger male respondents, while 5,5% of female add salt before tasting, again most often (9,7%) young females in the 18-24 age group (*p=0,002*).
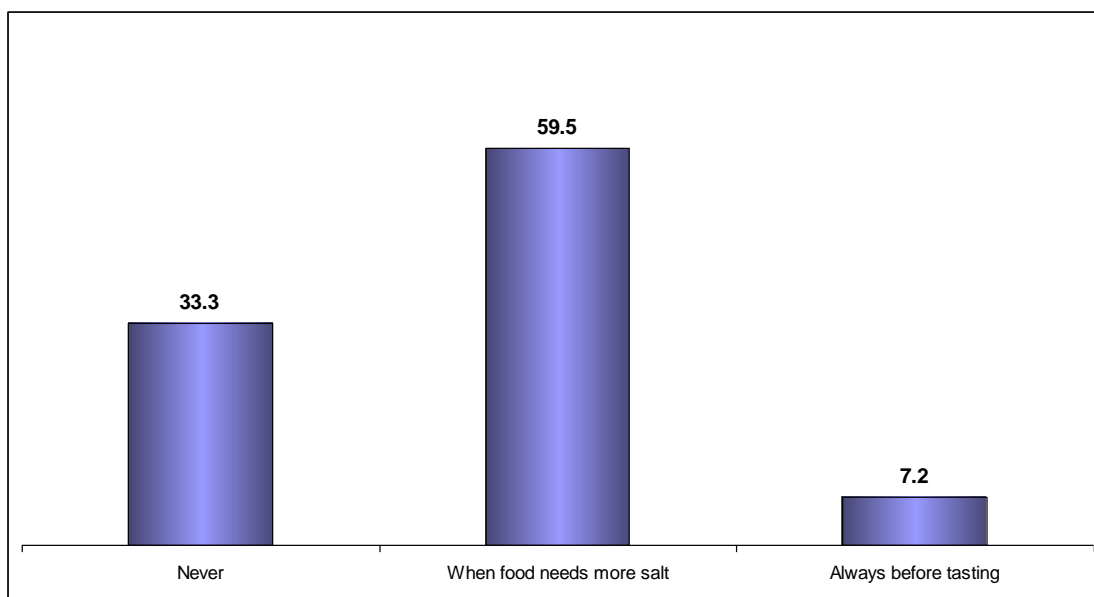
Graph 42 - *Respondents adding salt to food in the FB&H, %*

When selecting food, only 8,4% of respondents do so based on the food's impact on health .

*Graph 43: Respondents that think of the health impact when selecting food in the FB&H, %*

4.2.2.4 Frequency of consumption of different types of food during the week preceding the survey

The frequency of consumption of different types of food among the adult population of the FB&H has been estimated based on the respondent's overall food consumption in the week preceding the survey.

4.2.2.4.1 Consumption of cereals

More than half of the respondents in the FB&H (59,0%) have not consumed any cereals (boiled wheat, bran, oat, corn and other flakes, cornmeal / polenta)in the week preceding the survey.

A third (32,3%) of the respondents had cereals 1-2 times during the week, while only 8,7% had cereals 3-7 times during the week.
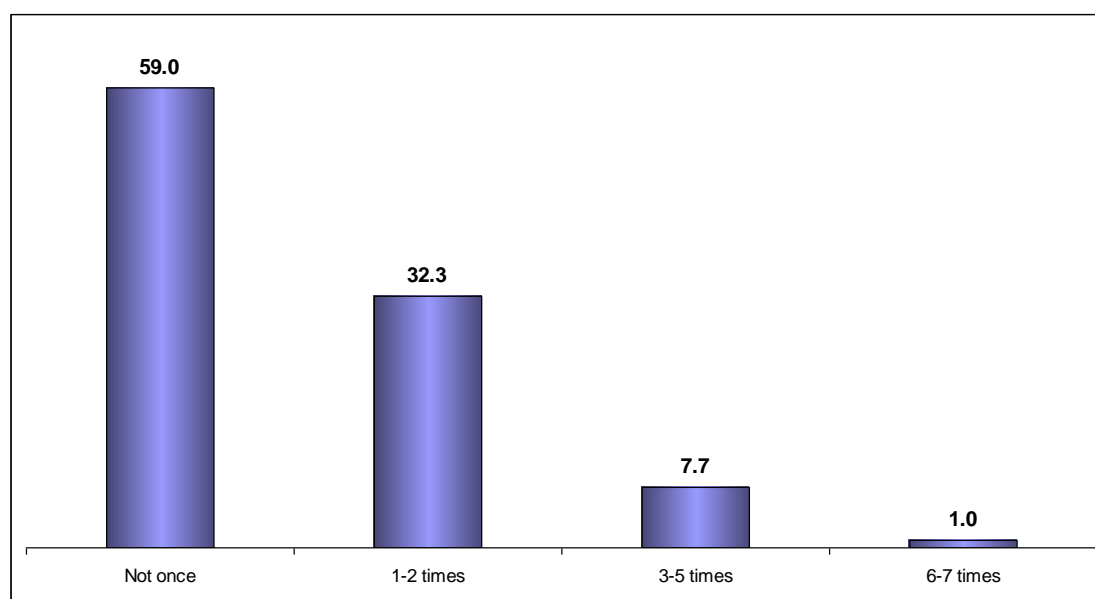
Graph 44 - *Respondents by frequency of cereal consumption during the week preceding the survey in FB&H, %*

Cereal consumption did not vary significantly between respondents in different settlement types. Older respondents (65 and over) consumed cereals 1-2 times during the week in higher percentages (38,9%) than respondents in the younger age groups.

	Urban	Rural	Female	Male	18-24	25-34	35-44	45-54	55-64	65+
Not once	57,9	59,7	57,4	60,5	60,2	63,7	60,6	58,5	59,1	51,3
1-2 times	33,5	31,5	32,9	31,7	28,7	29,7	31,6	32,4	32,1	39,0
3-5 times	8,0	7,5	8,4	7,1	10,2	6,0	7,3	7,7	7,9	8,0
6-7 times	0,6	1,2	1,3	0,7	0,9	0,4	0,5	1,5	0,9	1,7

Table 4 - Frequency of cereal consumption, by settlement type, sex and age, during the week preceding the survey (%)

4.2.2.4.2 Consumption of pasta, rice and potatoes

More than four-fifths of respondents in the FB&H had rice/pasta (88,5%), baked potatoes (82,0%) and fried potatoes (73,6%) in the week preceding the survey, most often 1-2 times.

	Baked potatoes	Fried potatoes	Rice/ pasta
Not once	18,0	26,4	11,5
1-2 times	56,8	57,5	63,0

3-5 times	24,4	15,7	25,0
6-7 times	0,7	0,4	0,4

Table 5 - Respondents by pasta/rice and potato consumption in the week preceding the survey

There are no significant differences in pasta and potato consumption between the sexes. The percentage of respondents that had baked potatoes in the week preceding the study grows in line with age and is highest among respondents aged 65 and over (88,4%), while the consumption of fried potatoes is highest among the youngest respondents (86,0%), and decreases with age.

4.2.2.4.3 Consumption of meat, meat based products, cheese and eggs

Around half of the respondents in the FB&H had chicken (49,1%), fish (47,1%), cheese (46,7%), eggs (44,9%) and meat based products (44,0%) 1-2 times during the week preceding the survey. More than half of the respondents (53,0%) had meat (veal, beef, pork, lamb) 1-2 times during the same week. A significant percentage of respondents had meat, meat based products, cheese and eggs 3-5 times during that week: chicken (44,3%), cheese (36,9%), eggs (35,8%), meat (35,6%) and meat based products (29,1%).

	Cheese	Fish	Chicken and other poultry meats	Meat (veal, beef, pork, and lamb)	Meat based products	Eggs
Not once	10,3	46,8	3,9	8,7	24,1	12,1
1-2 times	46,7	47,1	49,1	53,0	44,0	44,9
3-5 times	36,9	5,9	44,3	35,6	29,1	35,8
6-7 times	6,2	0,2	2,7	2,7	2,8	7,2

Table 6 - Respondents by consumption frequency of meat, meat based products, cheese and eggs during the week preceding the survey (%)

Respondents consumed chicken and other poultry meats in highest (96,1%) and fish in lowest percentages 53,2%.
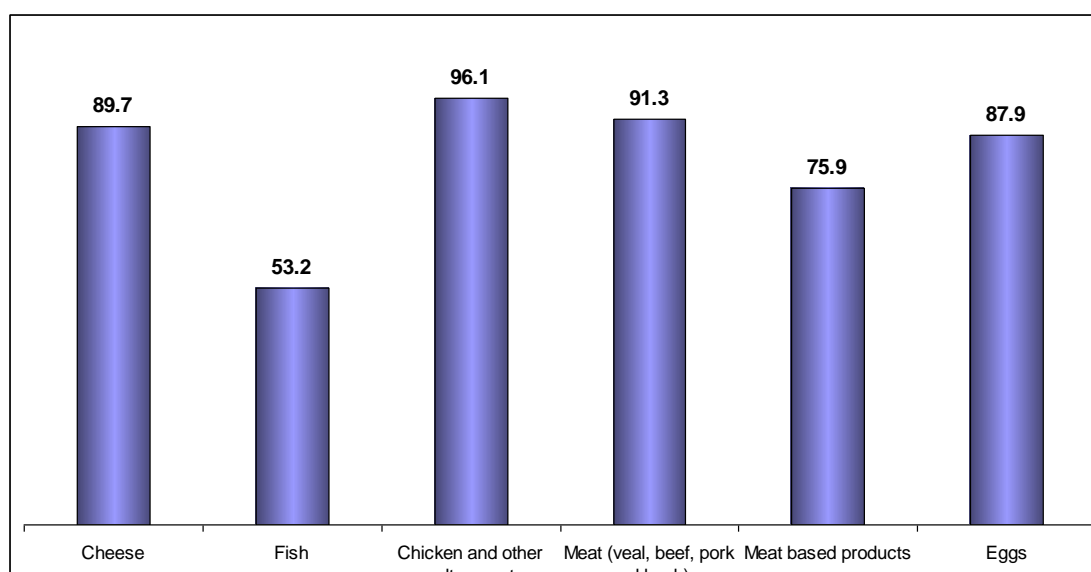
Graph 45 - *Respondents that consumed meat, meat based products, cheese and eggs during the week preceding the survey in the FB&H, %*

There were no significant differences in terms of meat, meat based products, cheese and eggs consumption between respondents in different settlement types, sexes and age groups.

4.2.2.5 Fruit and vegetable consumption

4.2.2.5.1 Consumption of fruit and vegetables at least once a day

27,9% of respondents in the Federation of BiH report eating vegetables (excluding potatoes and vegetable juices) at least once per day, without any particular statistical significances (*p=0,413*). 26,4% of male (*p=0,358*) and 23,3% of female (*p=0,620*) report eating vegetables (excluding juice and potatoes) at least once a day.

35,5% of respondents in the Federation of BiH report eating fruit (excluding juices) at least once per day, without any particular statistical significances (*p=0,483*). 33,1% of male (*p=0,330*) and 38,0% of female (*p=0,745*) report eating fruit (excluding fruit juices and potatoes) at least once a day

4.2.2.5.2 Consumption of fruit and vegetables during the week preceding the survey

More than half of the respondents (60,5%) in the FB&H had beans, peas, lentils or corn 1-2 times during the week preceding the survey, while more than a fifth of respondents (22,5%) had these foodstuffs 3-5 times during the same week.

More than four-fifths of respondents (87,6%) had fresh vegetables (excluding vegetable juices) during that week, most often 3-5 times (36,6%), while a fifth of respondents (11,9%) had fresh vegetables 6-7 times during the week.

	Fresh vegetables, salads (except potatoes and juice)	Beans, peas, lentils, corn	Other vegetables (vegetable dishes, frozen vegetables etc.)	Fresh fruit (except juice)	Frozen or preserved fruit	Nuts (walnuts, hazelnuts, almonds, etc.)	Dried fruits
Not once	12,4	14,1	45,6	10,4	83,2	62,4	69,0
1-2 times	31,0	60,5	32,3	25,2	13,8	32,9	27,1
3-5 times	36,6	22,5	17,5	42,8	2,4	3,8	3,5
6-7 times	19,9	2,8	4,7	21,7	0,6	0,9	0,4

Table 7 - Respondents by fruit and vegetables consumption frequency during the week preciding the survey, %

Fresh fruit (excluding fruit juices) was consumed by more than four fifths of respondents in the FB&H (89,6%), most often 3-5 times during the week preceding the survey (42,9%), while a fifth of respondents had fresh fruit 6-7 times during the same week (21,7%).

More than four fifths (83,2%) of respondents did not consume any frozen or preserved fruit during the week preceding the survey, while two thirds of respondents did not have any dried fruits (69,0%) or nuts (62,4%), during the same week.
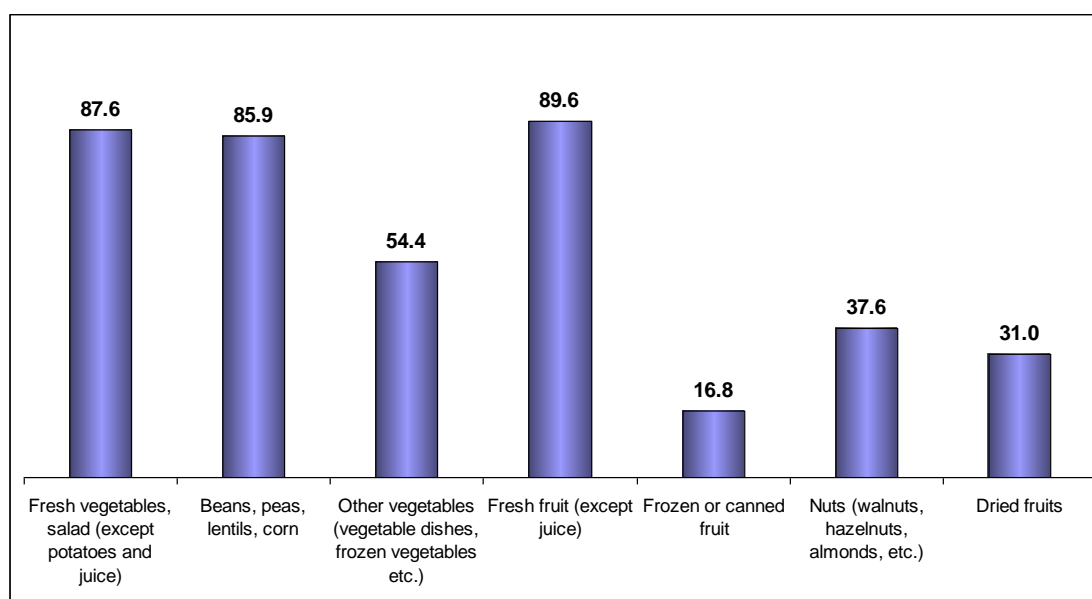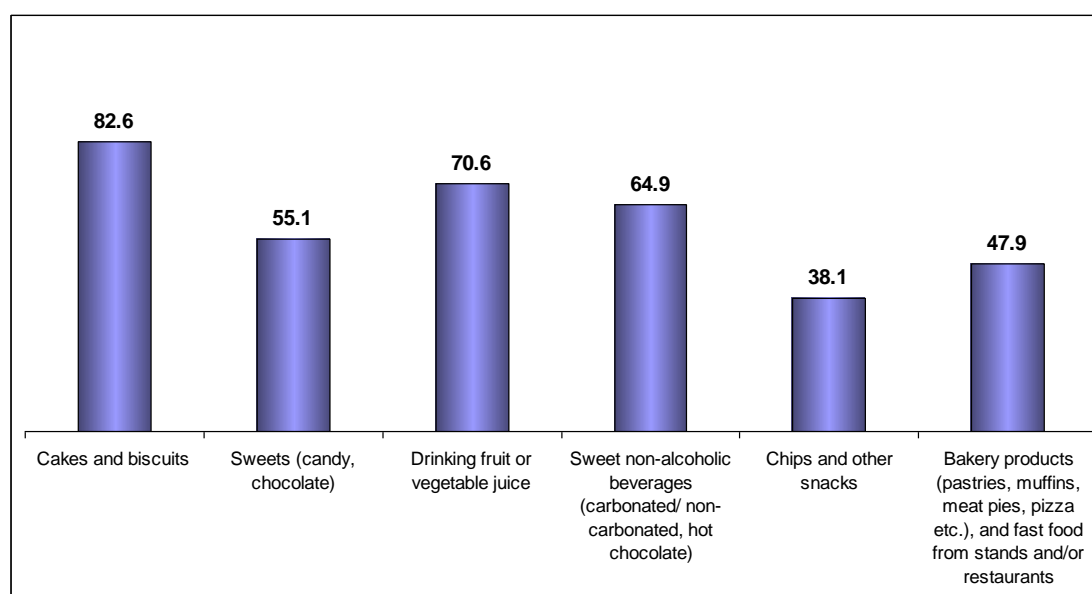
Respondents that consumed fruits and vegetables during the week preceding the survey in FB&H, %

The extent of fruit and vegetable consumption did not differ significantly between respondents of different sexes or living in different settlement types.

Older respondents consumed beans, peas, lentils, corn, fresh vegetables and salads in higher percentages, while younger respondents consumed more dried fruits.

4.2.2.5.3 Consumption of sweets, sweet beverages, snacks and fast food

More than four-fifths (82,6%) of respondents had cake and/or some form of biscuits during the week preceding the survey, while two-thirds of respondents drank fruit or vegetable juice (70,6%) and sweet non-alcoholic beverages (64,9%). Around half of the respondents had chocolate and/or candy (55,1%) ,bakery products (pastries, muffins, meat pies, pizza etc.), and fast food from stands and/or restaurants (47,9%) .More than a third of the respondents had chips and other snacks (38,1%).

7,7% of respondents drank fruit juice on a daily basis (6-7 during the week), while 4,2% of respondents drank sweet non-alcoholic beverages (carbonated/non-carbonated beverages, hot chocolate, etc.), female more commonly so (8,6%) than male (6,8%).

3,5% of respondents had cakes and biscuits, while 2,9% had chocolates and candy every day of the week. Bakery products or fast food from a stand/ restaurant was consumed on a daily basis by 1,3% of respondents, while 0,8% had chips and other snacks every day.

	Cakes and biscuits	Sweets (candy, chocolate)	Fruit or vegetable juice	Sweet non-alcoholic beverages (carbonated/ non-carbonated, hot chocolate)	Chips and other snacks	Bakery products and fast-food from a stand or restaurant
Not once	17,4	44,9	29,4	35,1	61,9	52,1
1-2 times	46,2	34,0	35,2	38,9	29,3	33,1
3-5 times	32,9	18,2	27,7	21,8	8,1	13,4
6-7 times	3,5	2,9	7,7	4,2	0,8	1,3

Table 8 - **Respondents by consumption frequency of sweets, sweet beverages, snacks and fast food during the week preceding the survey (%)**

Food purchased at the bakery and fast food stands/restaurants, as well as sweets, chips and other snacks were consumed in higher percentages by respondents in urban (56,9%) than in rural areas (41,8%).

4.2.2.6 Physical activity

4.2.2.6.1 Strenuous physical activity during the week preceding the survey

Less than a quarter (21,3%) of respondents were engaged in some form of strenuous physical activity during the week preceding the survey, more so respondents in rural (25,6%) than those in urban (14,9%) areas, more male (32,3%) than female (10,0%) and mostly respondents in the 35-44 age group (29,8%).

Respondents were engaged in strenuous physical activity for 0,9 days on average during the week preceding the survey, male (1,3 days) longer than female (0,3 days). Respondents in the 35-44 age group were engaged in such activates for longest periods of all the age groups (1,2 days).

Respondents were engaged in strenuous physical activity on average for 208,5 minutes during a single day, respondents in rural areas (220,6 min) longer than their counterparts in urban areas (177,2 min).

4.2.2.6.2 Moderate physical activity during the week preceding the survey

More than half of the respondents (60,4%) were engaged in some form of moderate physical activity during the week preceding the survey, more so respondents in rural (61,4%) than those in urban (54,9%) areas, more male (64,8%) than female (55,9%) and mostly respondents in the 35-44 age group (71,6%).

Respondents were engaged in moderate physical activity for 2,9 days on average during the week preceding the survey, male (3,0 days) longer so than female (2,7 days). Respondents in the 35-44 age group were engaged in such activities for longest periods of all the age groups (3,5 days).

Respondents were engaged in moderate physical activity on average for 158,9 minutes during a single day, respondents in rural areas (161,8 min) longer than their counterparts in urban areas (157,3 min).

4.2.2.6.3 Walking continuously for at least 10 minutes during the week preceding the survey

More than four-fifths of respondents (87,6%) walked continuously for at least 10 minutes during the week preceding the survey, more so respondents in rural (89,4%) than those in urban (86,4%) areas, more male (90,3%) than female (84,9%) and mostly respondents in the 18-24 age group (94,7%). The lowest percentage of respondents that walked continuously for at least 10 minutes during the week preceding the survey can be found in the 65 and over age group (75,3%)

Respondents walked continuously for at least 10 minutes on average 4,6 days of the week preceding the survey, female (4,3 days) almost as much as male (4,9 days). Respondents in the 65 and over age group walked continuously for at least 10 minutes the least average number of days of the same week (3,7 days).

Respondents walked on average 72,7 minutes during a single day, respondents in rural areas (73,8 min) longer than their counterparts in urban areas (71,9 min).

4.2.2.6.4 Physically active at least 30 minutes more than 2-3 times a week

A quarter of respondents in the Federation of Bosnia and Herzegovina (24,6%) reported being engaged in physical activity for at least 30 minutes, to the extent of breaking into a sweat and an increased breathing rate, whereby the 18-24 age group had the highest percentage of respondents doing so (34.4%). The percentage of respondents that are physically active for at least 30 minutes, to the extent of breaking into a sweat and having an increased breathing rate, has a statistically significant decrease in line with age, and is lowest among respondents in the 65 and over age group (8.3%) ($p = 0.000$).

A fifth of female (20,3%) report being physically active for at least 30 minutes, in the manner described, whereby the 18-24 age group had the highest percentage of female doing so (24,4%). The percentage of female respondents that are physically active has a statistically significant decrease in line with age, and is lowest among respondents in the 65 and over age group (7,5%) (*$p = 0,000$*).

More than a quarter of male (28,7%) report being physically active for at least 30 minutes, to the extent of breaking into a sweat and having an increased breathing rate, out which the highest percentage of male was in the 18-24 age group (43,5%). The percentage of male respondents that are physically active for at least 30 minutes in the manner described, has a statistically significant decrease in line with age, and is lowest among respondents in the 65 and over age group (8,9%) (*$p=0,000$*).
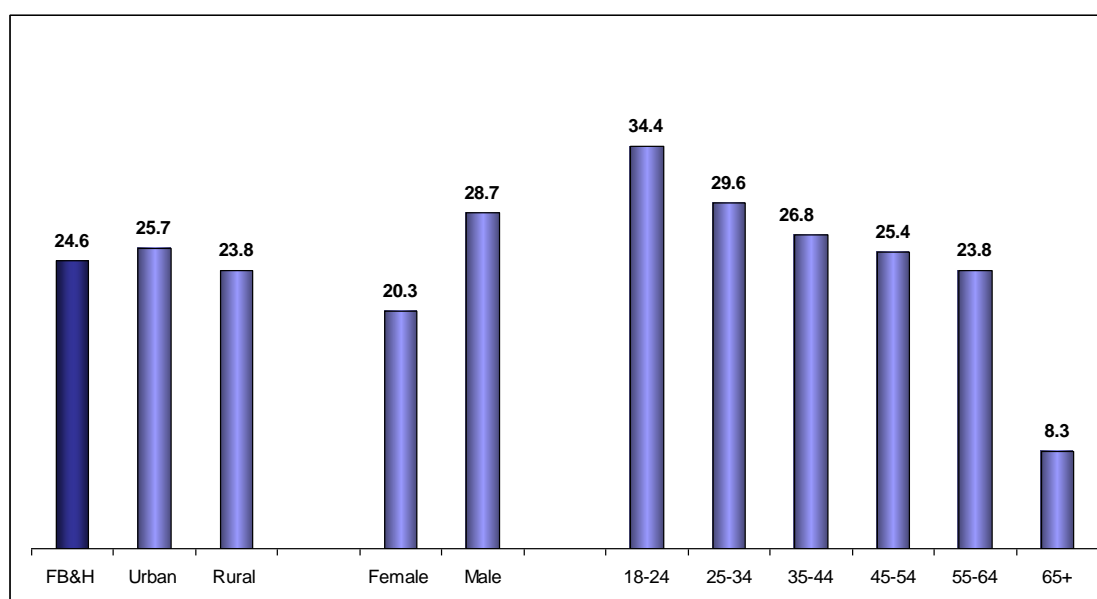
Graph 48 - *Respondents that are physically active for at least 30 minutes, 2-3 times a week in the FB&H, %*

4.2.2.6.5 Physically active for at least 30 minutes once a week or less

A third of the respondents (32,8%) in the Federation of BiH fall within the group of less physically active persons, which applies more to respondents in urban (41,3%) than in rural (27,2%) areas, equally among male (34,1%) and female (31,5%), and mostly to respondents in the 18-24 age group (45,2%).

4.2.2.6.6 Physically inactive

More than a third of the respondents (38,3%) in the Federation of BiH fall within the group of physically inactive persons, 4,3% of which are physically inactive due to illness or disability. Two-fifths of female (44,0%) and almost a third of male (38,3%) fall within the group of physically inactive persons, the highest percentage of whom is in the 65 and over age group (61,3%).

Half of the respondents in the FB&H (50,0%) are physically active (strenuous and moderate activity and walking) for less than 150 minutes per week.

More than a third of the respondents in the FB&H (37,8%) report that they perform moderately physically demanding work. Less then a quarter of respondents report they perform physically undemanding work (31,0%), while less then a fifth of respondents (19,5%) say they spend most of their time sitting at work. 11,7% of respondents report performing physically strenuous work.

Significantly more respondents in urban (26,7%) than in rural areas (12,7%) report sitting most of the time while performing their work, while physically strenuous work is reported by significantly more respondents in rural (18,1) than in urban areas (5,0%). More female then male report spending most of their work time sitting, while more male report performing physically strenuous and moderately demanding work.

4.2.2.7 Smoking

4.2.2.7.1 Exposure to second-hand smoke

More than half of the respondents in the FB&H (54,1%) report exposure to second hand smoke at home, less then half (44,4%) say they are exposed to second-hand smoke at work, while more than half (52,7%) report being exposed to second-hand smoke in the public.
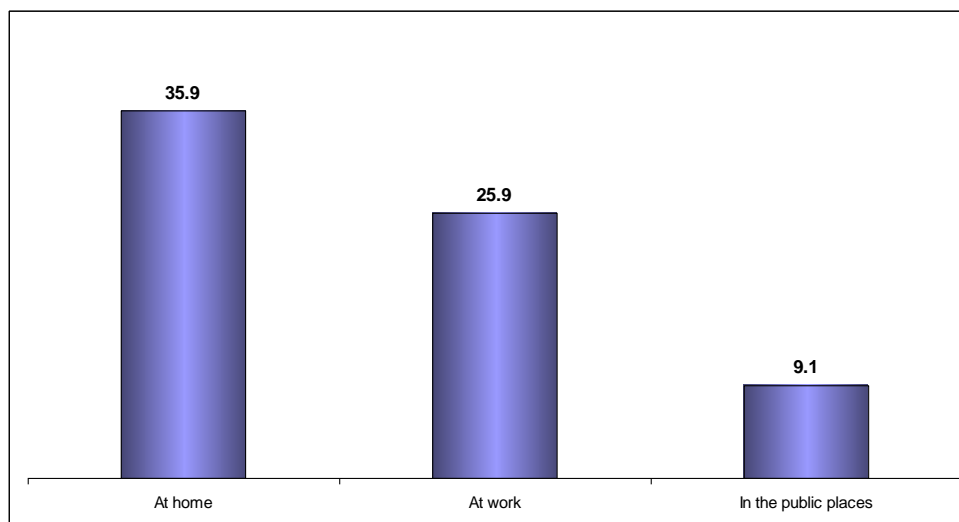
Graph 49 - *Exposure to second-hand smoke in the FB&H, %*
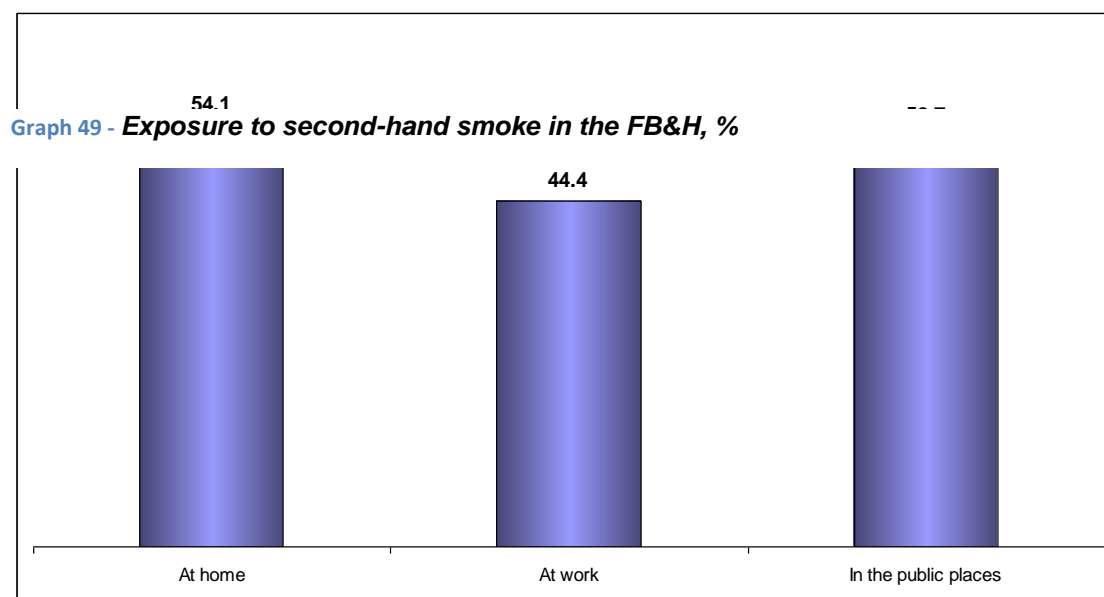
Exposure to second-hand smoke at home is more prominent in rural (56,3%) then urban (50,8%) areas, it is present among more than half of respondents of all age groups and a third of respondents in the 65 and over age group, without significant difference between respondents of different sexes (54,9% for female and 53,3% for male).
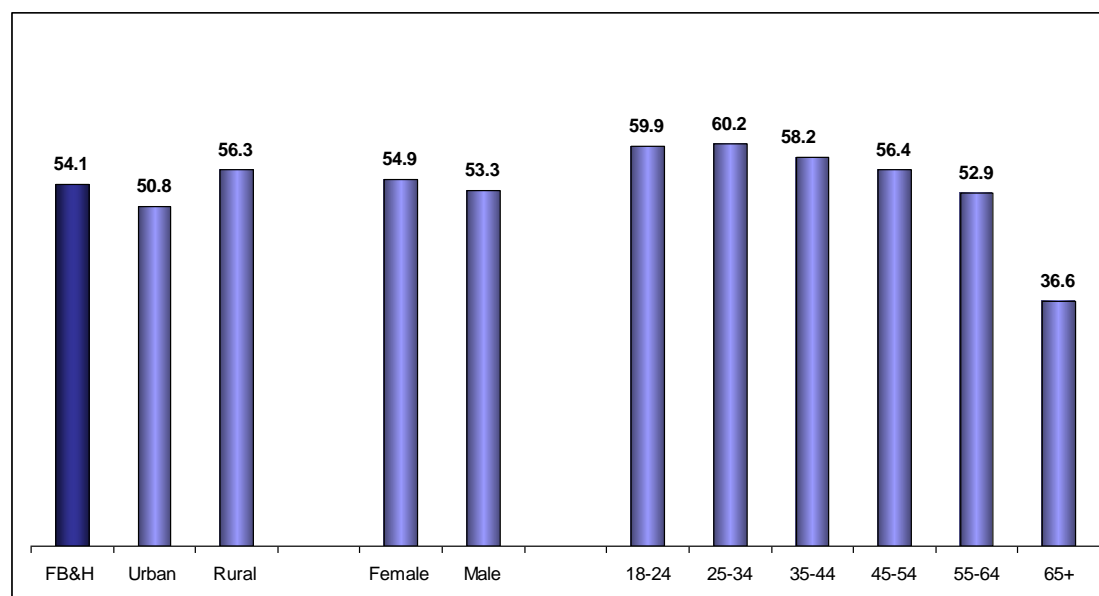
Graph 50 - *Exposure to second-hand smoke at home in the FB&H, %*

Exposure to second-hand smoke at work is more prominent among male (47,1%) then female (39,7%), and is most prominent among respondents in the 55-64 age groups (56,1%).

Exposure to second-hand smoke in the public is also more prominent among male (60,7%) then female (44,5%), and is most prominent among respondents in the 18-24 age group (73,4%), decreasing in line with age and being least prominent in the 65 and over age group (20,5%)

4.2.2.7.2 Extent of exposure to second-hand smoke at home

More than a third of respondents (35,9%) confirm exposure to second-hand smoke at home for periods of time longer than 5 hours, while 25,9% confirm such exposure at work and 9,1% in the public.

Exposure to secondhand smoke for periods of time longer than 5 hours, by type of settlement in the FB&H, %

Exposure to second hand smoke at home for periods of time longer than 5 hours is more common among female (37,0%) then male (34,8%), and is present among almost a third of respondents in all age groups.

Graph 52 - *Exposure to secondhand smoke at home for periods of time longer than 5 hours in the FB&H, %*
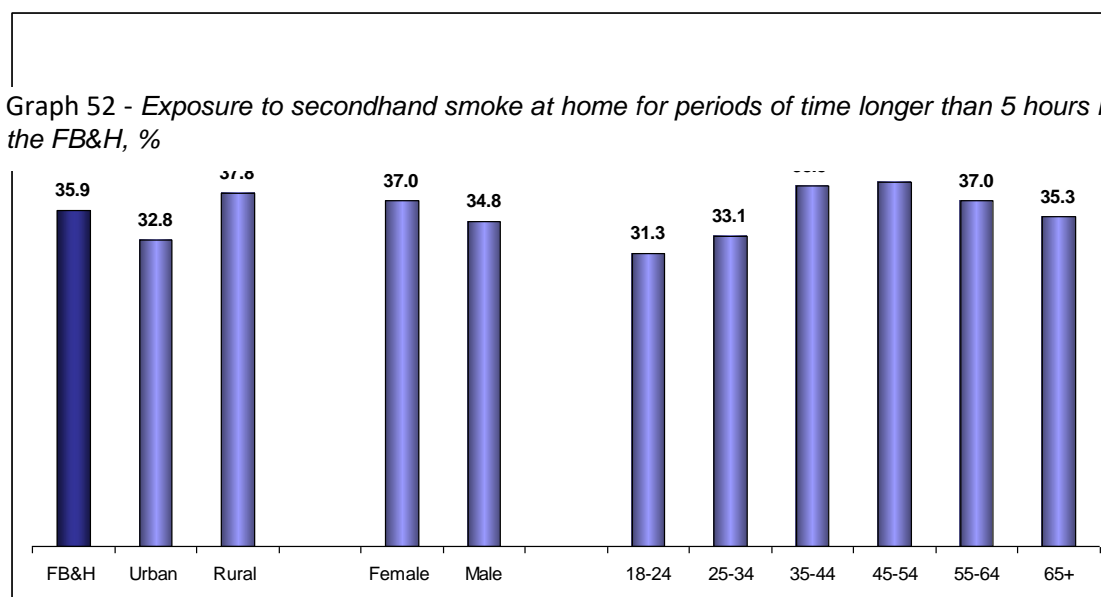
Exposure to second hand smoke at work for periods of time longer than 5 hours is reported by a quarter of respondents in the FB&H (25,9%), almost equally by male (26,4%) and female (24,8%), by a around a quarter of all respondents aged 18-54, and a fifth of respondents in the in 55-65 age groups (19,4%).

Exposure to second hand smoke in the public for periods of time longer than 5 hours is reported by 9,1% of respondents, more so by male (9,8%) than female (8,2%), and most often by respondents in the 18-24 age group (13,6%). Exposure to second-hand smoke in the public decreases in line with age, and is least common among respondents in the 65 and over age group (1,3%).

Most respondents are exposed to second-hand smoke in the length of 1 to 5 hours, 47,9% at home, 56,7% at work, and 50,4% in the public.

Exposure to second hand smoke for periods of time shorter than 1 hour is most prominent in the public and is reported by two fifths of respondents in the Federation of BiH (40,4%)

4.2.2.7.3 Smoking status

Almost half of the respondents in the FB&H (46,2%) confirm smoking during their life, 47,4% of respondents in urban and 45,4% of respondents in rural areas. A third of female (33,7%) and more than half of male (58,4%) report smoking during their life.

The percentage of respondents that confirm smoking during their life is lowest among respondents in the 18-24 age group (26,8%) and highest among those in the 45-54 age group (57,3%).
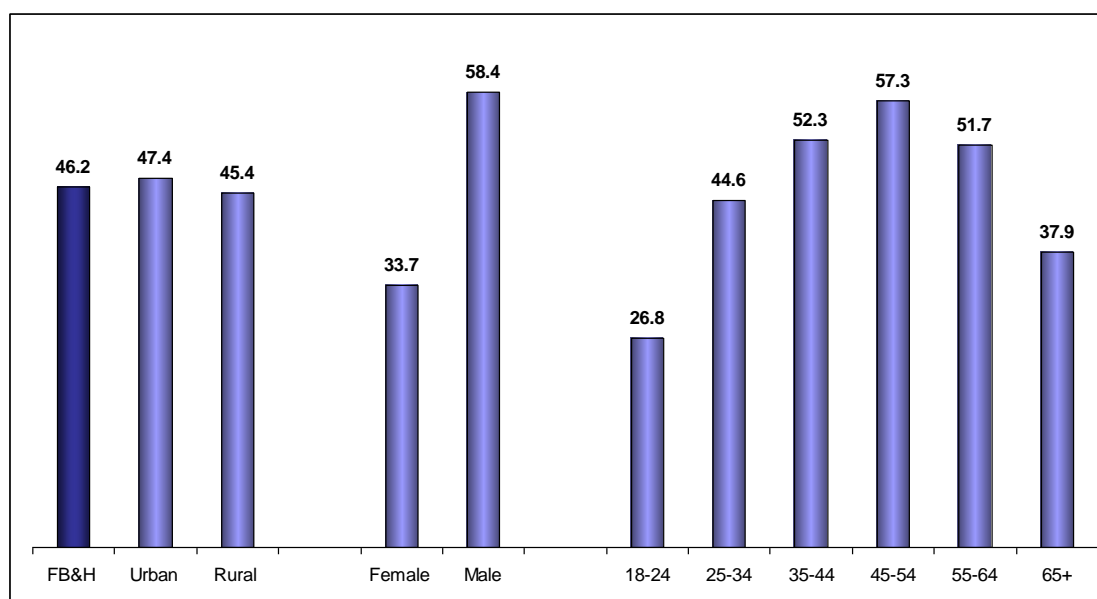
Graph 53 - *Respondents that have smoked / are smoking in the FB&H, %*

In terms of their smoking status, 15,7% of respondents report occasional smoking, while 55,6% of respondents report daily smoking during the past month, without significant difference between the different settlement types, whereby 56,8% of respondents in urban and 54,8% in rural areas fall within the category of regular smokers.

More than a quarter (28,7%) of respondents fall within the non-smoker category. Regular smoking is reported by almost the same number of male (55,5%) and female (55,8%). The highest percentage of respondents that report regular smoking can be found in the 35-44 age group (66,7%), followed by respondents in the 25-34 (61,2%) and 18-24 (58,5%) age groups.
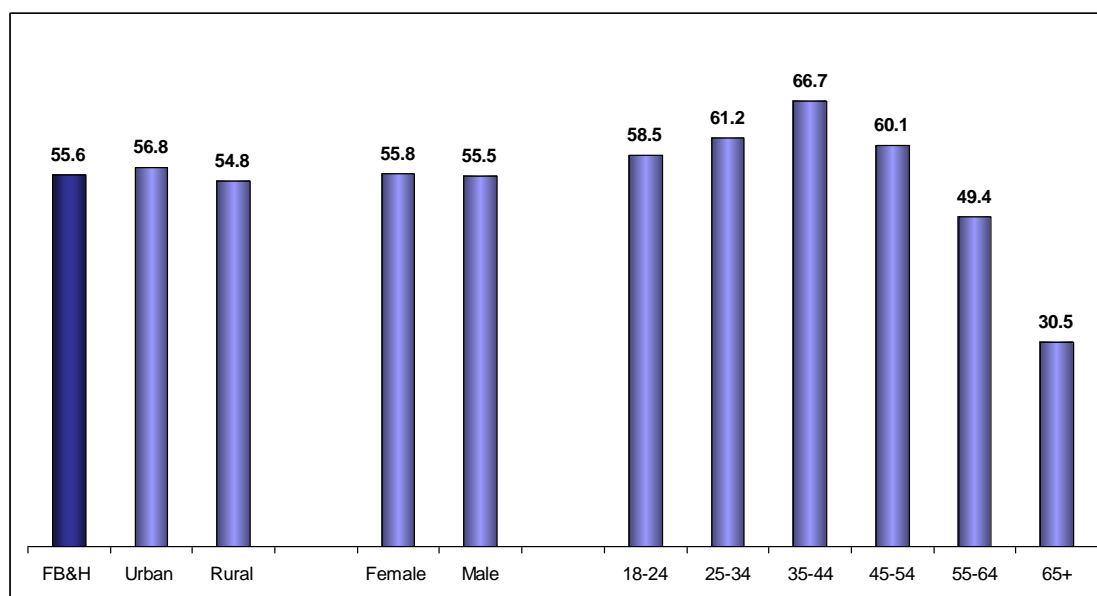
Graph 54 - *Regular smokers in the FB&H, %*

In terms of their daily consumption of cigarettes, respondents in the FB&H on average smoke 16,9 cigarettes per day, without significant difference between respondents in urban and rural areas.

In terms of gender and age, male (18,2) smoke more cigarettes per day then female (14,8), while the highest average daily consumption of cigarettes among the age groups was registered in the 45-54 age group (17,8), and the lowest in the 65 and over age group (12,8).
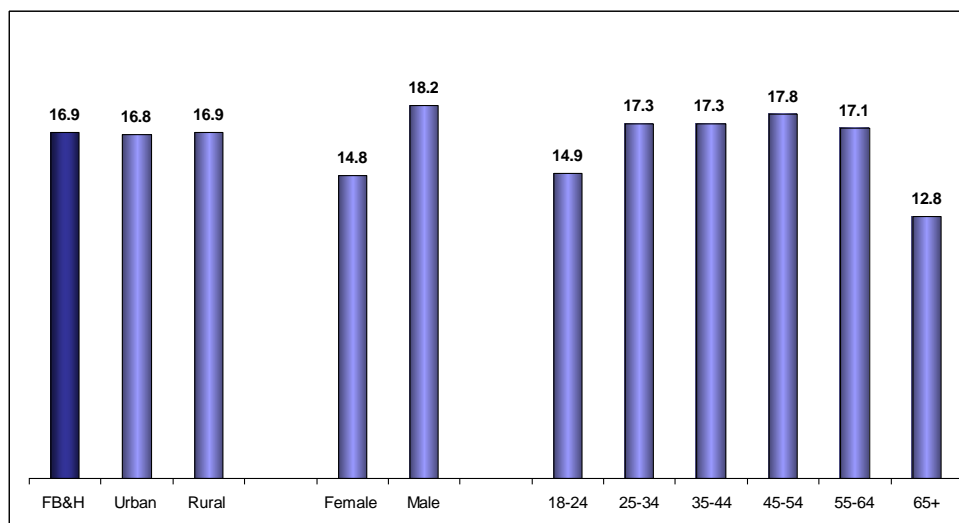
Graph 55 - *Average number of cigarettes consumed per day*

4.2.2.7.3 Smoking cessation

More than two-fifths of regular smokers in the Federation of BiH (41,7%) have the desire to quit smoking, more so respondents in urban (45,7%) than those in rural areas (38,9%). Almost a half of the female (45,7%) say they have a desire to quit smoking, while the same is true for more than a third of male (37,7%). In terms of the age groups, the highest percentage of smokers with the desire to quit smoking can be found in 35-45 age group (46,8%).
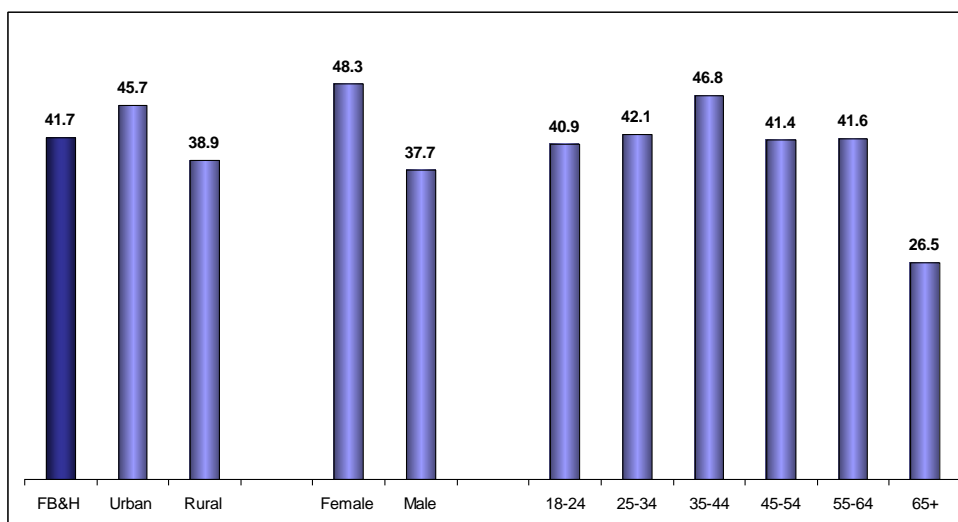
Graph 56 - *Regular smokers that have the desire to quit smoking in the FB&H, %*

Less than a third (31,9%) of regular smokers in the Federation of BiH stated that they do not have the desire to quit smoking, while more than a quarter are uncertain of their feelings on smoking cessation (26,3%).

4.2.2.8 Alcohol consumption

Over a quarter of respondents in the FB&H (28,8%) confirm consuming any type of alcoholic beverage/s in the past 12 months (beer, wine, brandy), 29,7% of respondents in urban and 28,1% of respondents in rural areas.

During the past 12 months alcoholic beverages were consumed by almost half of the male surveyed (46,1%), most commonly by male in the 25-34 age group (54,3%), and least so by male in the 65 and over age group (30,%) (*p=0,000*).

11,0% of the female surveyed report consuming an alcoholic beverage in the past 12 months, most commonly female in the 18-24 age group (20,5%), and least so female in the 55-64 age group. (5,0%) (*p=0,000*).

Consumption of any type of alcoholic beverage is reported least often by respondents without education (9,4%), and most often by those with tertiary education (39,5%).

Graph 57 - *Consumption of any type of alcoholic beverage during the past 12 monhts in the FB&H, %*
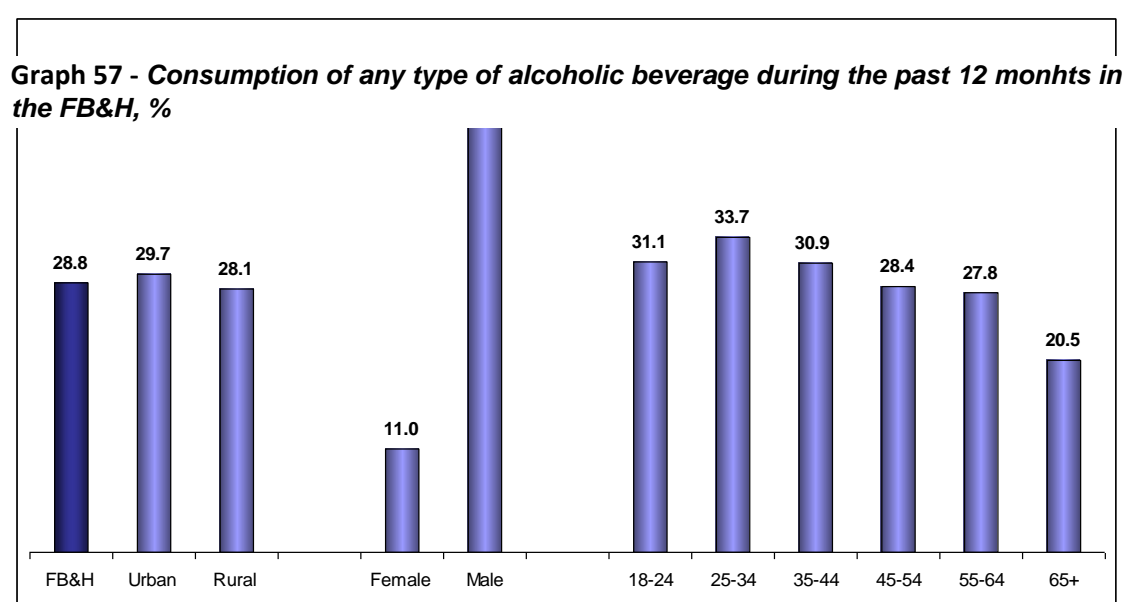
71,2% of respondents did not consume any type of alcoholic beverage in the past 12 months.

4.2.2.8.1 Frequency of alcohol consumption

The highest percentage of respondents (29,0%) say they have been consuming alcoholic beverages several times a month during the past 12 months. 23,5% of respondents say they have been consuming alcoholic beverages several times a week during the past 12 months, while 21,% have done the same several times during the entire past year. 11,6% of respondents report consuming alcoholic beverages every day.

4.2.2.8.2 Consumption of spirits

Less than a quarter of respondents in the Federation of FB&H (24,3%) report consuming spirits in the past 12 months. 3,3% of respondents confirm daily consumption of spirits, while 10,8% confirm consuming spirits several times a week and 14,3% several times during a month or year.

Frequency of consumption	Amount of alcohol consumed (grams)				
	1-39 grams	40-69 grams	>=70 grams	Total	
	N	N	N	N	%

Daily	14	11	101	126	3,3
Once or several times a week	113	124	172	409	10,8
Several times a month/year	199	128	70	397	14,3
Total	326	263	343	932	24,3
%	8,5	6,8	8,9	24,3	

**Table 9 - Frequency of consumption of spirits (%)**

N= 3841

Respondents consuming 70 or more grams of spirits are classified as chronic alcoholics. Survey data reveals that 7,1% of respondents in the Federation of BiH consumed 70 or more grams of spirits during the week preceding the survey, of which over a third of respondents (37,0%) consume alcohol every day.

4.2.2.9 Drugs and psychotropic substances

0,6% of respondents in the Federation of BiH report consuming any type of drugs or psychotropic substances at least once in their life, without difference between respondents in urban and rural areas.

Due to the very low number of respondents that have ever consumed these substances (a total of 21) no further analysis on this matter was conducted.

4.2.2.10 Contraceptive usage
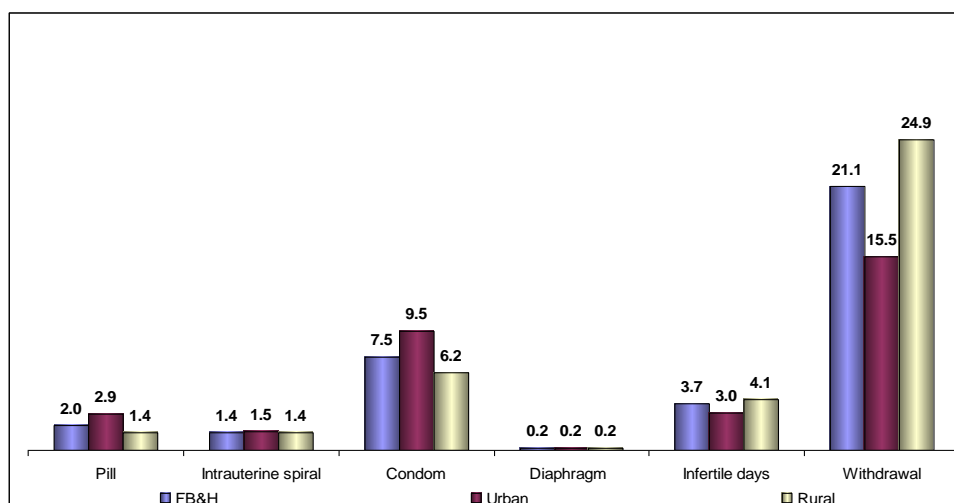
Graph 58 - *Respondents aged 18-64 that continuously use any contraceptive device or method, by settlement type and contraceptive type in the FB&H, %*

Continuous usage of any contraceptive devices or methods is present among around a third (35,9%) of respondents aged between 15 and 64 in the Federation of BiH, somewhat more often among respondents in urban (38,2%) than those in rural areas (32,6%), and without significant differences between respondents of different age and sex (33,9% of female and 35,4% of male practice some form of birth control) .

The highest percentage of respondents aged 18 - 64 practice withdrawal as a continuous method of contraception (21,1%), more so respondents in rural (24,9%) than those in urban areas (15,5%), and most so respondents with elementary education (29,1%). The second most commonly used manner of contraception are condoms, which are used by 7,5% of respondents, more so by respondents in urban (9,5%) than in rural areas

(6,2%). In terms of the education level of respondents, condoms are used significantly more often by respondents with tertiary education (13,9%), than by those without education (1,2%).

In terms of sexes, withdrawal as a contraceptive method is practiced by 21,7% of male and 20,5% of female, while condoms are used by 4,8% of female and 10,3% of male. Respondents in the 18-24 age group most commonly use condoms (19,5%) while respondents in other age groups rely most often on withdrawal.
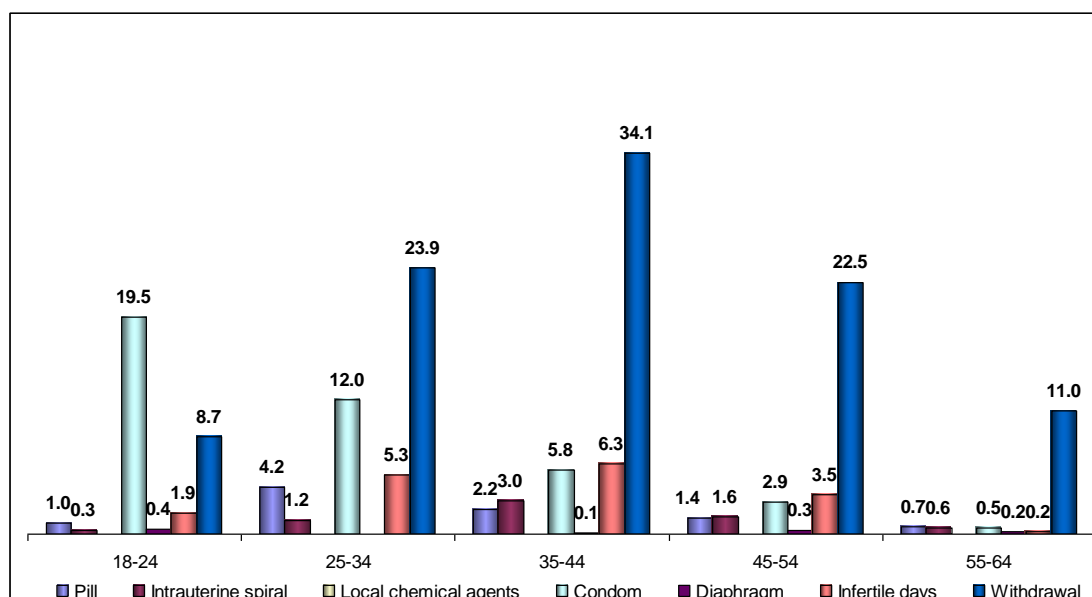
Graph 59 - *Respondents aged 18-64 that continually use some form of contraceptive device or method, by sex and age in the FB&H, %*

4.2.3 Health care utilization

More than half of the respondents in the Federation of BiH (55,2%) have visited a doctor of medicine in the past 12 months. The lowest percentage of respondents that did so was in the 18-24 age group (36,6%), it grew significantly in line with age and was highest among respondents in the 65 and over age group (74,5%) (*p=0,000*).

Less than two quarters of female (60,4%) have visited a doctor during the past 12 months, most of which were female in the 55-64 age group (74,7%). Half of the male surveyed (50,1%) have visited a doctor in the past 12 months, most so male in the 65 and over age group (75,1%) (*p=0,000*).

When faced with a health problem the highest percentage of respondents in the FB&H turn to a family doctor (68,4%), more so respondents in urban (72,1%) than those in rural areas (65,8%).

Less than a fifth of the respondents in the FB&H (23,6%) first turn to a general practitioner when faced with a health problem, more so respondents in rural (26,8%) than those in urban areas (18,8%).

Respondents first turn in significantly lower percentages to: doctors of occupational medicine (3,0%), doctors in the private sector (1,9%) or specialists in the public sector (0,2%).
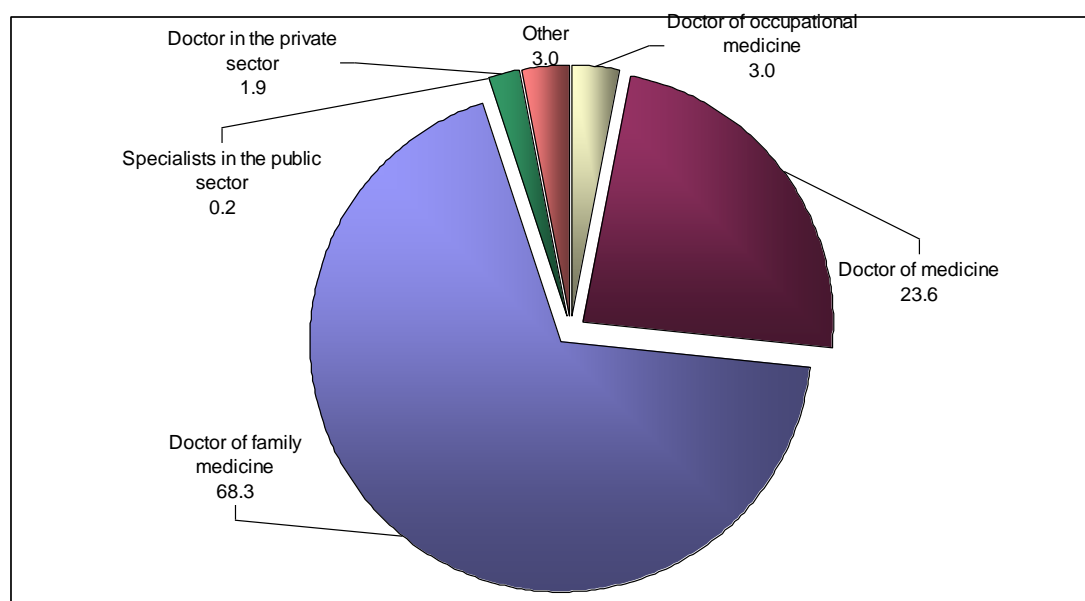
Graph 60 - *Respondents by which type of medical professional they first turn to when faced with a health problem in the FB&H, %*

4.2.3.1 Family medicine utilization

More than two-thirds of respondents in the FB&H have their family doctor (68,9%), more so respondents living in urban (72,6%) than those living in rural areas (66,4%).
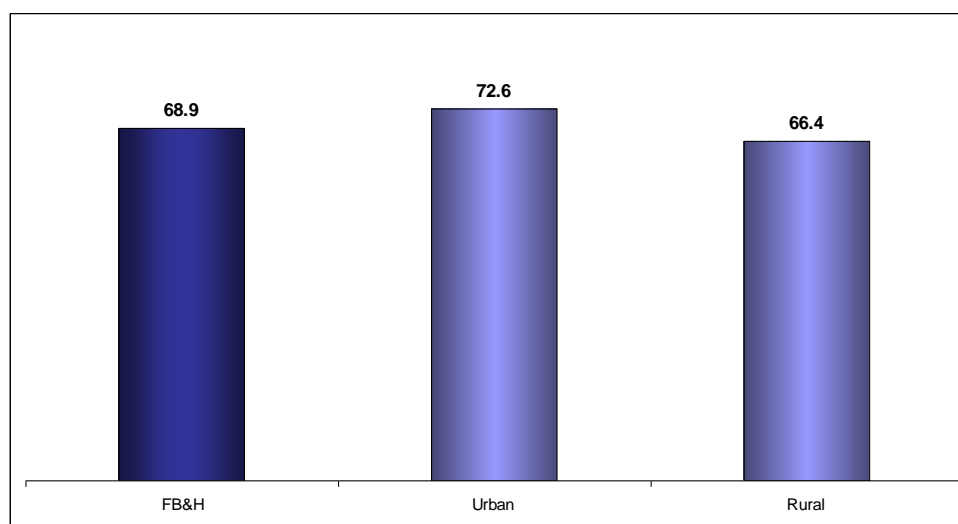
Graph 61 - *Respondents that have their family doctor, by type of settlement they live in the FB&H, %*

4.2.3.1.1 Territorial availability of family medicine

Almost half of the respondents in the FB&H reside less than 1501m away from the nearest health care facility providing family medicine services (48.4%), which is more often the case among respondents living in urban (69,9%) than those living in rural areas (33,9%).

Over a third of respondents in the FB&H (35,7%) who receive family medicine services reside more than 2000m away from the nearest health care facility, which is true for almost half of the respondents in rural areas (48,1%) and a significantly lower percentage of respondents living in urban areas (17,1%).
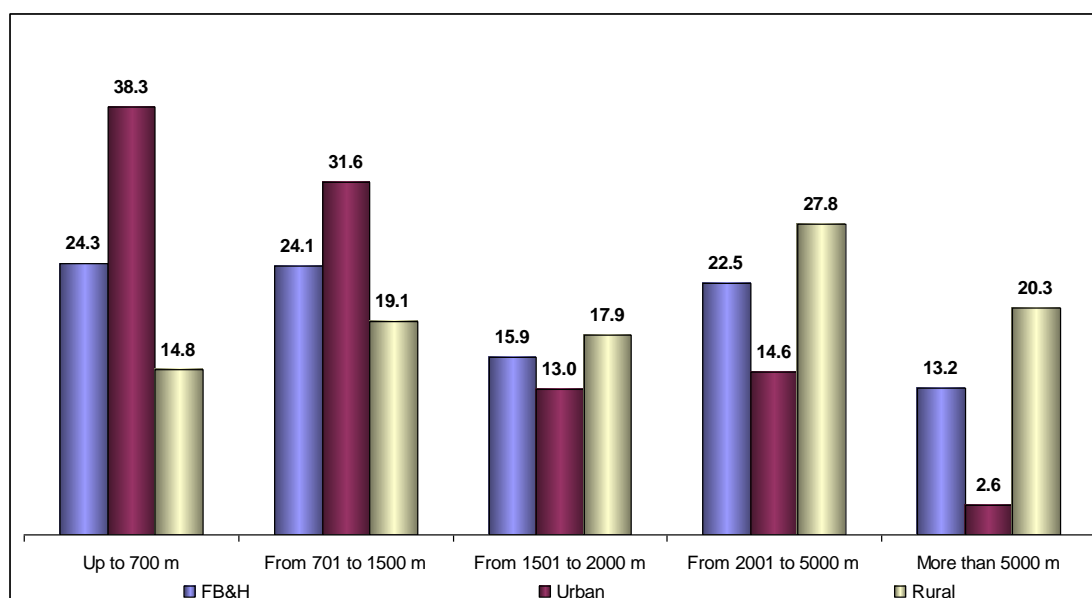
Graph 62 - *Respondents by distance from nearest health care facility providing family medicine services in the FB&H, %*

4.2.3.1.2 Visits to a family doctor

One third of respondents have visited their family doctor in the past 4 weeks (33,7%), while a similar percentage of respondents visited their family doctor in the past 12 months (32,1%), respondents in both urban and rural areas have done so in almost equal percentages.

More than a quarter of respondents in the FB&H have visited their family doctor more than a year ago (28,1%). On the other hand, 6,1% of respondents have never visited their family doctor.
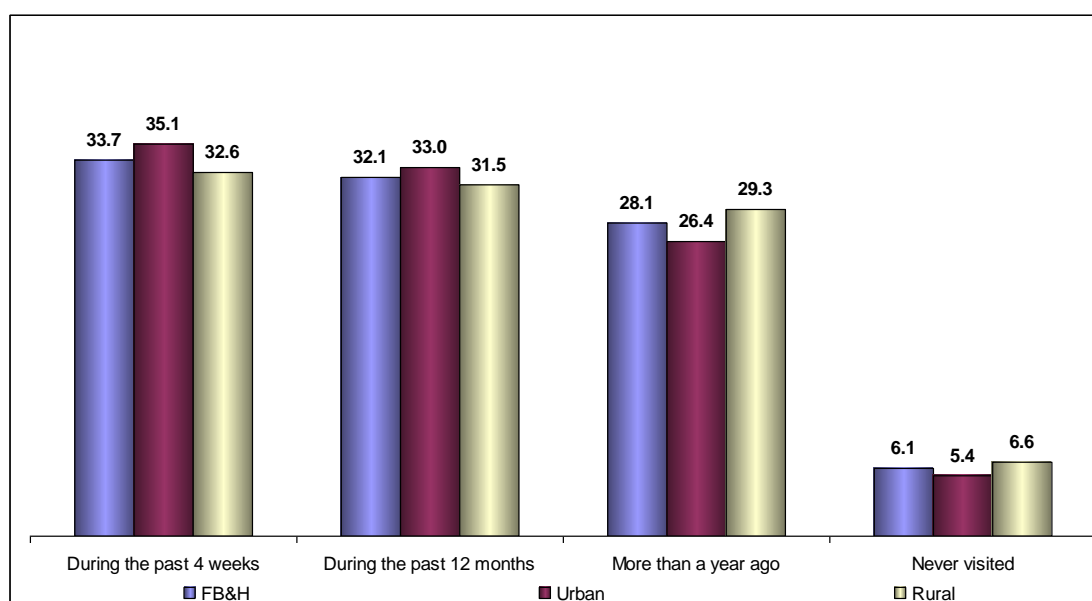
Graph 63 - *Respondents by when they last visited their family doctor in the FB&H, %*

Among the respondents that visited their family doctor in the past 4 weeks most frequent were those aged 65 and over (58,5%), while the highest percentage of respondents visiting their family doctor in the past 12 months can be found in the 18-24 age group (43,8%).
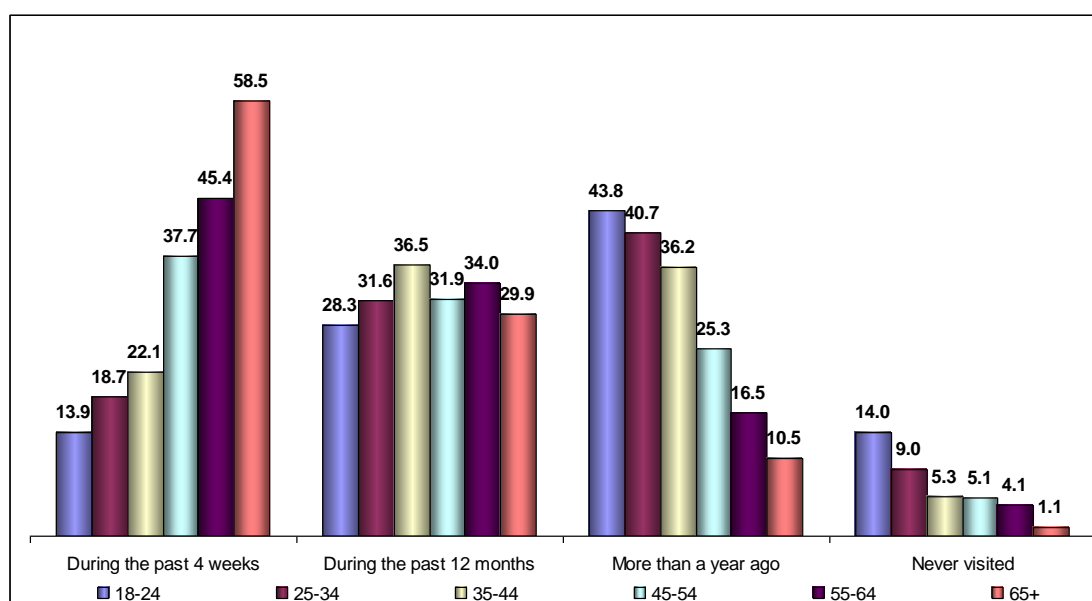
Graph 64 - *Respondents by age and time passed since their last visit to a family doctor in the FB&H, %*

Respondents have visited their family doctor on average 1,7 times during the past 4 weeks, respondents in rural areas more often (2,0 times on average) than those in urban areas (1,2 times on average).

The average number of visits during the past 4 weeks was higher among male (2,0) then female (1,4).

Respondents have visited their family doctor on average 2,9 times during the past 12 months, again this number was higher among respondents in rural (3,0 times on average) than among those in urban areas (2,8 times on average).

The average number of visits during the past 12 months was higher among female (3,2) then male (2,6). It was highest among respondents in the 65 and over age group (3,7) and lowest among respondents in the 18-24 age group (2,0).
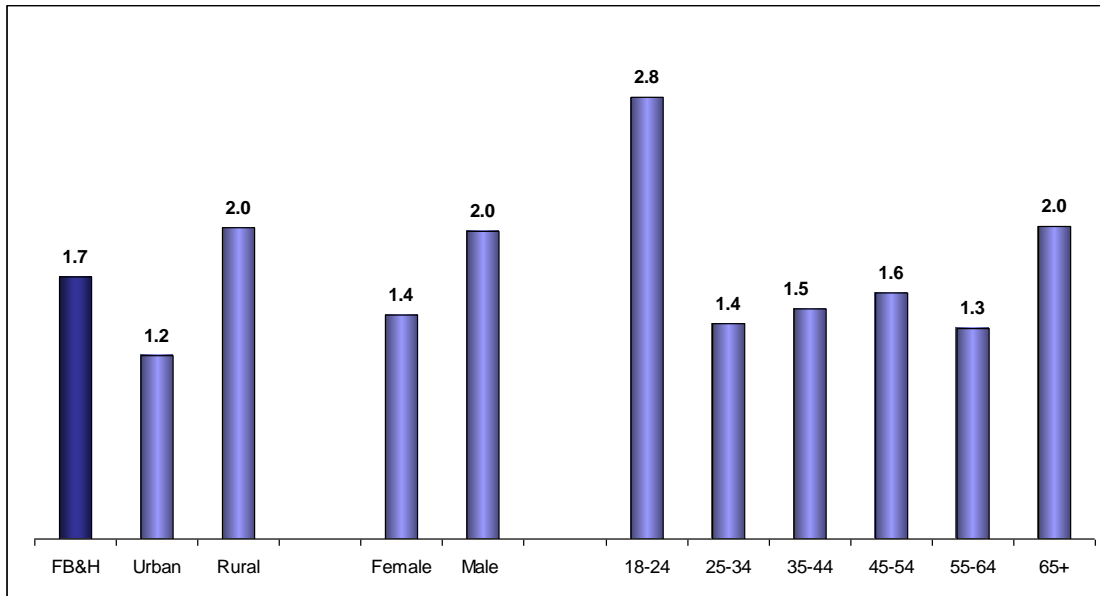
Graph 65 - *Average number of visits to a family doctor during the past 12 months*

4.2.3.1.3 The main reason for the last visit to a family doctor

The highest percentage of respondents in the FB&H, over a third, indicated illness as the main reason for their last visit to their family doctor (36,9%), this did not differ significantly between respondents in different types of settlements.

Over one fifth of respondents in the FB&H indicated a health check-up as the main reason of their last visit to a family doctor (22,5%), which was more often the case among respondents living in urban (24,5%) than among those living in rural areas (19,8%). One fifth of respondents in the FB&H indicated drug prescription as the main reason for their last visit (22,1%), which was again more often the case among respondents in urban (24,9%) than those in rural areas (20,1%).

Other reported reasons for the last visit to a family doctor in the FB&H were: referral (7,4%), full physical examination (4,2%), doctor's note (1,3%), and other reasons (1,4%).
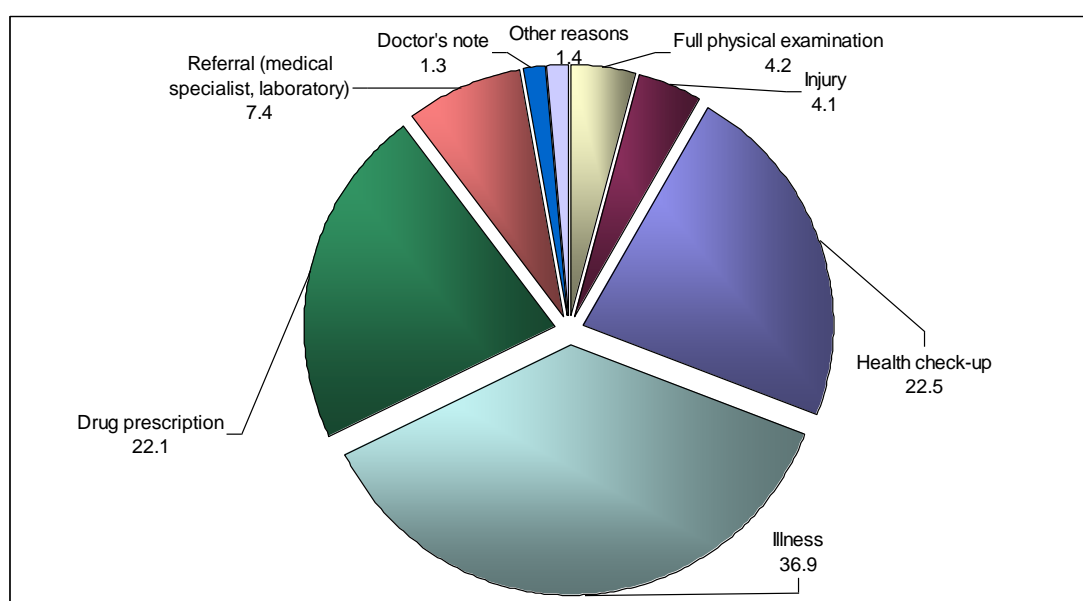
Graph 66 - *Main reason for the last visit to a family doctor in the FB&H, %*

Slightly more female (24,2%) than male (20,6%) reported a health check-up as the reason for the last visit to their family doctor. Twice as many female (9,7%) as male (4,9%) reported referral as the reason for the last visit to their family doctor. On the other hand, a physical check-up was more often the reason for the last visit among male (6,3%) then female (2,2%), as well as an injury (6,7% of male and 1,8% of female).

In terms of the respondents' age, illness was the most frequent reason for the last visit among respondents in the 18-24 age group (54%) and the least frequent reason among respondents in the 65 and over age group (21,6%). On the other hand, drug prescription as the main reason for their last visit to a family doctor increases in line with age, whereby it was the main reason among 50% of respondents in the 65 and over age group, and among only 2,8% of respondents in the 18-24 age group.
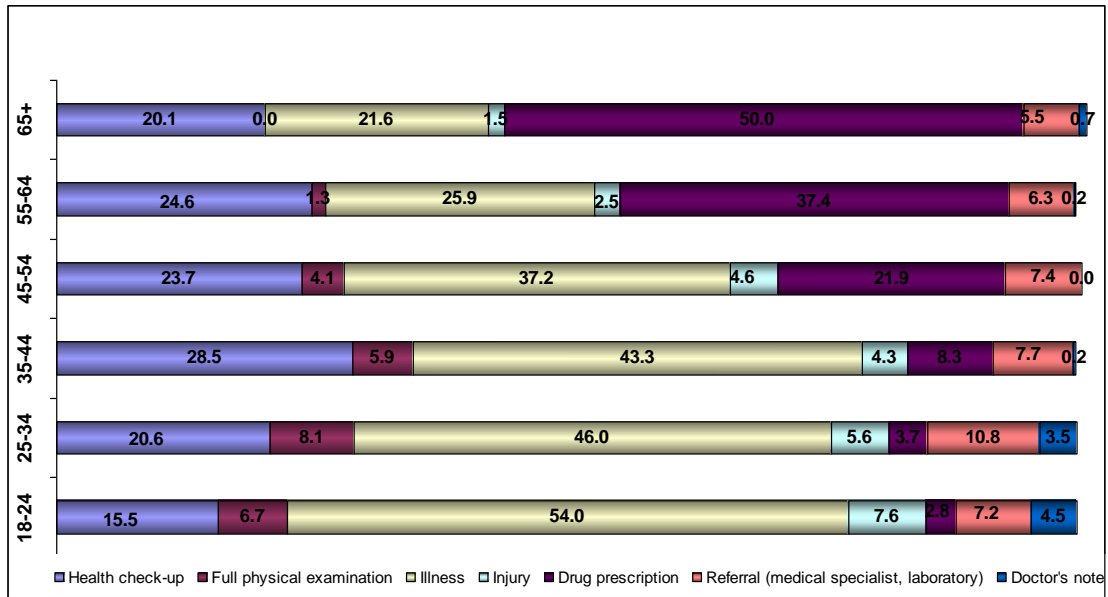
Graph 67 – *Main reason for last visit to a family doctor, by age in the FB&H, %*

Chart data by age group:

Age	Health check-up	Full physical examination	Illness	Injury	Drug prescription	Referral (medical specialist, laboratory)	Doctor's note
65+	20.1	0.0	21.6	1.5	50.0	5.5	0.7
55-64	24.6	1.3	25.9	2.5	37.4	6.3	0.2
45-54	23.7	4.1	37.2	4.6	21.9	7.4	0.0
35-44	28.5	5.9	43.3	4.3	8.3	7.7	0.2
25-34	20.6	8.1	46.0	5.6	3.7	10.8	3.5
18-24	15.5	6.7	54.0	7.6	2.8	7.2	4.5

4.2.3.1.4 Time spent waiting during the last visit to a family doctor

More than a quarter of respondents have been seen by the doctor on the same day when they last visited their family doctor (79,9%), this was more often the case among respondents in rural (84,7%) than among those in urban areas (73,5%).

13,0% of respondents waited 2-3 days for an appointment with the doctor. Lower percentages of respondents waited 4-5 (4,0%) and more than 5 days (3,1%) to be seen by the doctor, which occurred more often in rural then in urban areas.
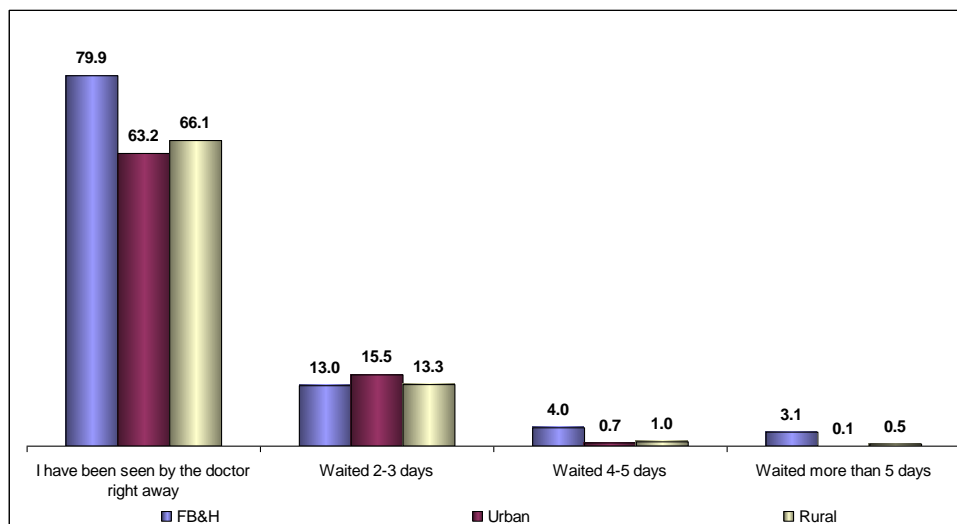
Graph 68 - *Length of time spent waiting, in days, to be seen by their family doctor in the FB&H, %*

4.2.3.1.5 Main reasons for not using services provided by their family doctor

6,1% of respondents have never visited their family doctor, male (8,8%) significantly more so then female (3,6%). Three-quarters of respondents stated that they have not visited their family doctor because they are healthy (84,0%), respondents in rural areas (84,0%) stated this more often than respondents in urban areas (85,1%). A significantly lower percentage of respondents reported long waiting times and crowdedness (2,3%), lack of confidence in family doctors (1,4%) and a large distance between their home and the ambulance (0,8%) as the main reasons for not visiting their family doctor. 11,6% of respondents had other unstated reasons for not using the

Graph 69 - *Main reasons for not using services provided by their family doctor in the FB&H, %*
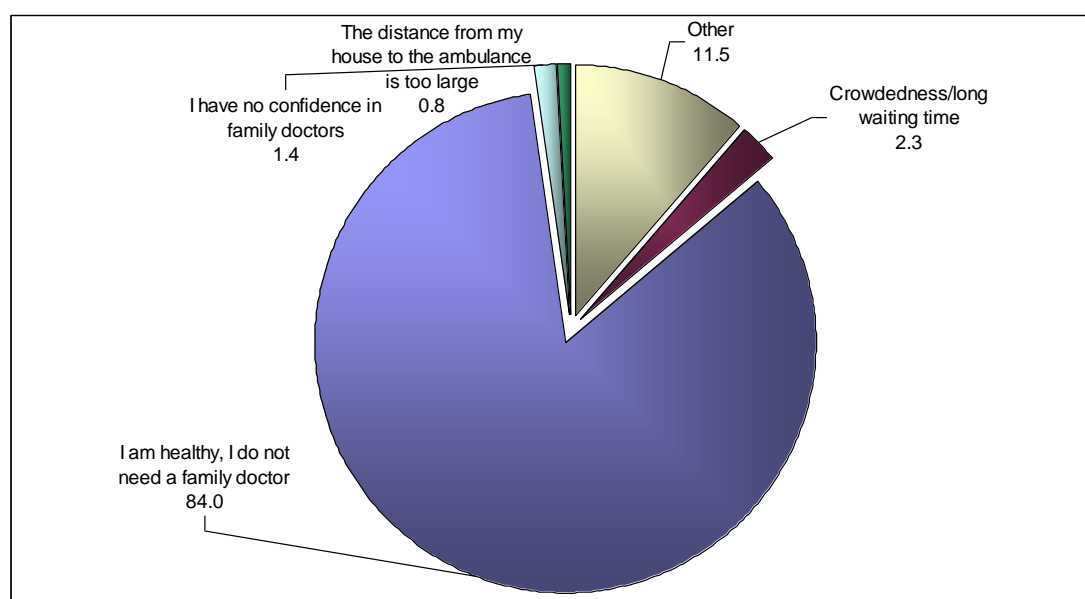
services of the family doctor.

4.2.3.8 Gynecological health care utilization

4.2.3.8.1 Visits to the gynecologist

Every sixth female respondent has never visited a gynecologist (16,3%), which is almost equally often the case in among female in urban (15,3%) and rural (17,0%) areas, and most common among female respondents without education (36,5%). More then half of the female respondents in the 18-24 age group have never visited a gynecologist (58,9%).

Less than a third of female in the FB&H have visited a gynecologist during the past 12 months (27,7%), less so female in rural (26,1%) than female in urban areas (30,0%) and less so female without education (7,6%) than female with tertiary education (44,8%). Female in the 25-34 age group visited the gynecologist in the highest percentage (43%).

More than half (56%) of the female respondents visited a gynecologist more than a year ago, equally so female in urban (54,7%) and rural areas (54,7%) and mostly so female without education (55,9%).
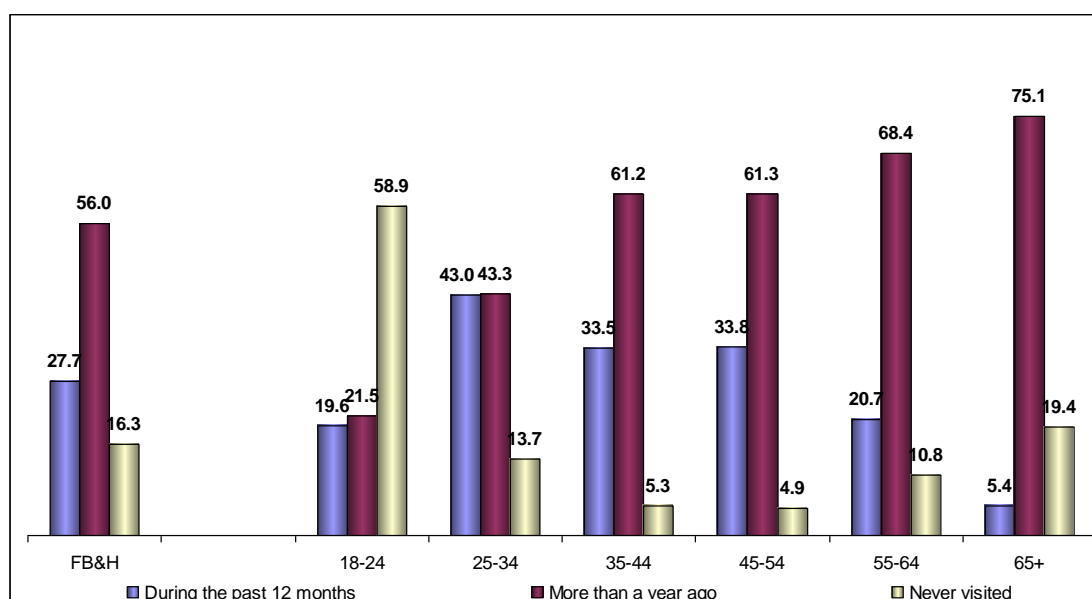
Graph 70 - *Visits to a gynecologist, by age and time passed since the last visit in the FB&H, %*

The average number of visits to the gynecologist in the past 12 months was 2,2. Female with higher education visited the gynecologist more often, while female in the 25-34 age group visited the gynecologist most often (3,1 visits on average).

The most common reasons for visiting the gynecologist are health monitoring and control (64,3%), pregnancy (17,4%) and illness (15,2%). Female in urban areas (73,1%) visited the gynecologist for health control reasons more often than female in rural areas (58,1%). Visits for health monitoring and control reasons were most common among female with tertiary education (80,9%).
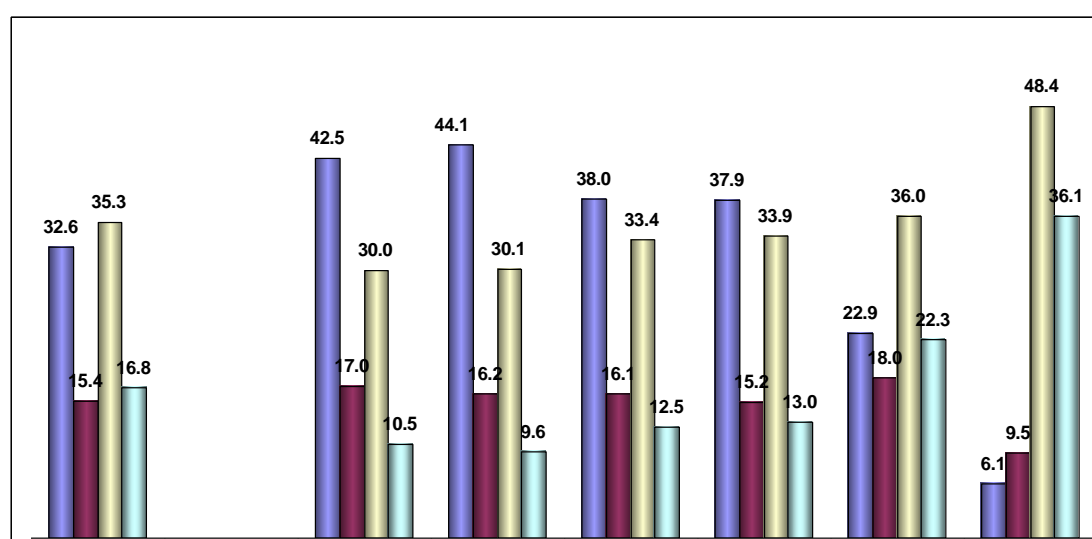
Graph 71 - *Frequency of preventive care visits to a gynecologist, by age in the FB&H, %*

Only a around a third of female (32,6%) visits the gynecologist at least once a year for preventive care reasons, more so female in urban (36,7%) than those in rural areas (26,9%), and most commonly female with

tertiary education (53,5%). Visits to the gynecologist for preventive care reasons decrease in line with age, are most frequent among female in the 25-34 age group (44,1%) and least frequent in female aged 65 and over (6,1%).

4.2.3.3 Emergency medical services utilization

6,1% of respondents used emergency medical services in the past 12 months.

From the moment of placing the call, respondents waited 14,3 minutes on average for the arrival of medical personnel. The average waiting times were longer in rural (14,9 min) than in urban areas (13,4 min).
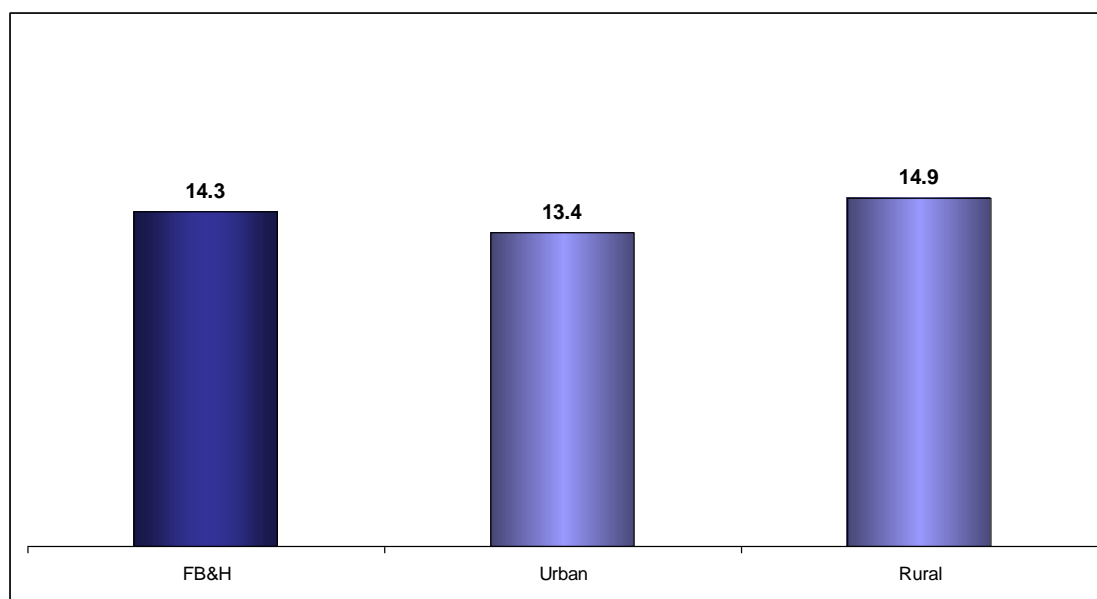
Graph 72 - *Average waiting times for emergency medical services from the moment of placing the call, in minutes %*

4.2.3.4 Diagnostic and therapeutic services utilization

More than four-fifths of respondents (80,4%) in the Federation of BiH have used laboratory services with a referral, and more than half of the respondents had a x-ray scan (54.8%), an ultrasound (51.9%) and an ECG (53.2%) examination.

More than four-fifths of the respondents that had a diagnostic examination done report having an ECG examination (82,5%) done on the same day of their arrival to the health facility, and a similar percentage reports being admitted to the laboratory on the same day (80,8%).

More than two-thirds of respondents report having an RTG examination on the same day (67,2%), while more than a half report having an ultrasound examination done on the same day (52,4%). Respondents referred to diagnostic examinations waited longest for an ultrasound, whereby almost a quarter of respondents (23,5%) waited up to 7 days for an ultrasound examination, while 13,4% waited up to a month.
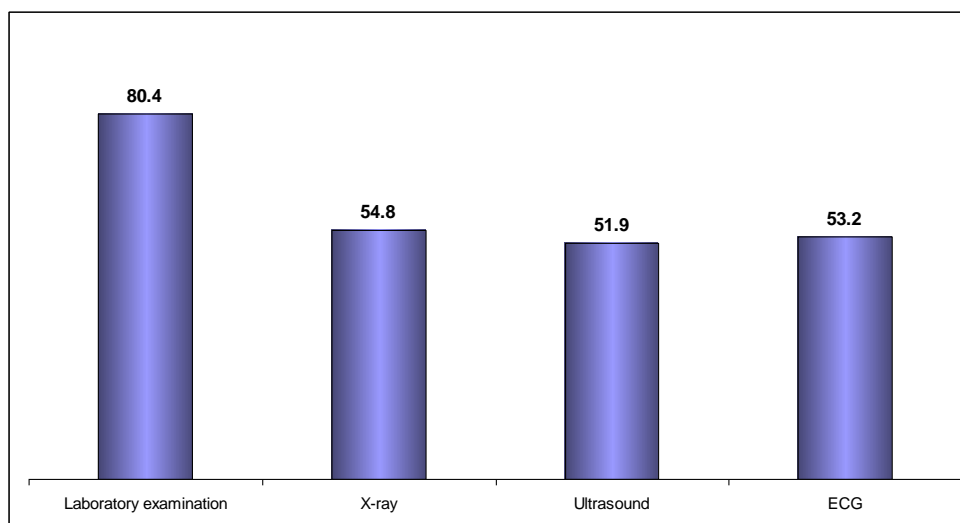
Graph 73 - *Respondents referred to different diagnostic examinations (1/2) in the FB&H, %*

The percentage of respondents having an appropriate referral and waiting for longer than a month varied between the different diagnostic tools: ultrasound (10,7%), RTG (2,9%), ECG (2,1%) and laboratory (0,4%).
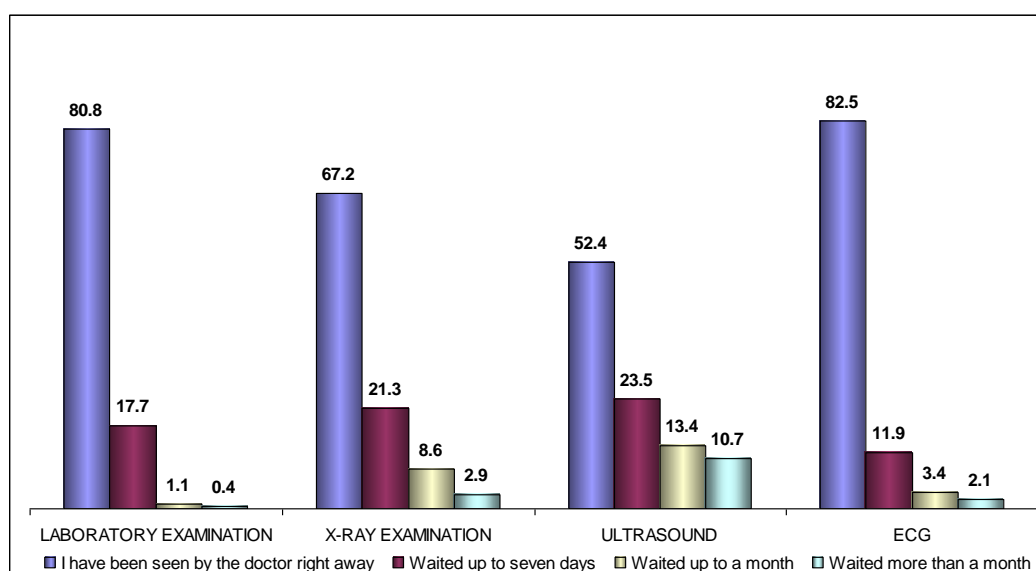
Graph 74 - *Waiting times, in days, for different diagnostic services in the FB&H, %*

In terms of other diagnostic and therapeutic examinations in the Federation of BiH, 4,7% of respondents have ever had a CT done, 1,8% have ever had an MRI scan, while less then 1% had a colonoscopy examination or have undergone radiation therapy.
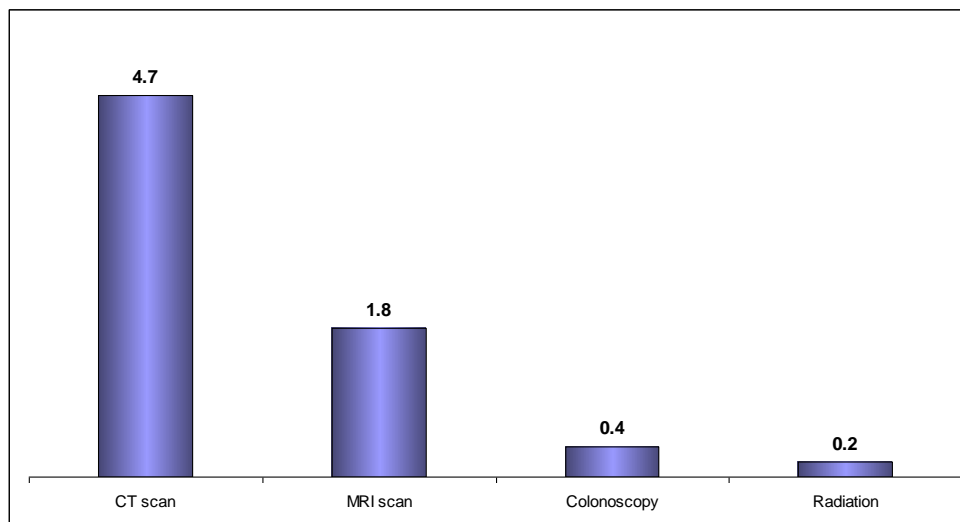
Graph 75 - *Respondents referred to different diagnostic examinations (2/2) in the FB&H, %*

Respondents with an appropriate referral from their doctor waited for more days for the aforementioned diagnostic and therapeutic services.

Respondents referred to an MRI scan waited for 36,6 days on average, respondents referred to a CT scan waited for 21,2 days on average, while respondents with referred to radiation and colonoscopy waited for 19,4 and 18,8 days respectively.

Respondents in rural areas referred to colonoscopy waited significantly longer (23,3 days on average) than respondents with the same referral in urban areas (9,9 days on average). This is also the case with respondents in rural areas referred to radiation therapy, who waited on average 28,0 days, much longer compared to the average waiting time of 3,7 days of respondents with the same referral in urban areas.
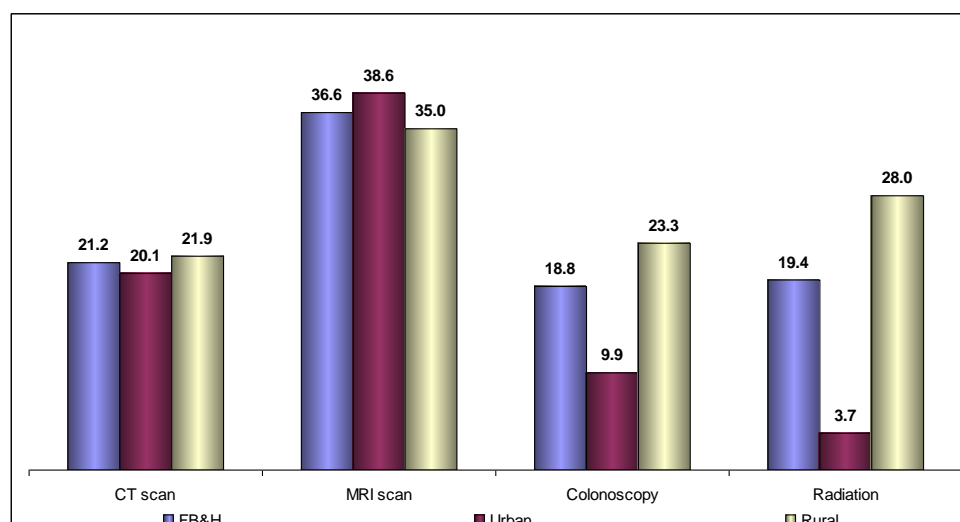
Graph 76 - *Average waiting times, in days, after being referred to different diagnostic and therapeutic services in the FB&H, %*

4.2.3.5 Specialist-consultative health care utilization

More than three-quarters of respondents (76,9%) in the FB&H visited a medical specialist (excluding a specialist family doctor) at least once in their lifetime, including specialists in both the public and private sectors. This was more often the case among respondents living in urban (81,6%) than those living in rural areas (73,8%).

Of the respondents who ever visited a medical specialist, the highest percentage have done so more than a year ago (57,9%), which was more frequently the case among respondents in rural (61,2%) than those in urban areas (53,5%). One third of respondents visited a medical specialist during the past 12 months (32,4%), while 9,7% have done so during the last week.

Graph 77 - *Frequency of utilization of services provided by a medical specialist in the FB&H, %*
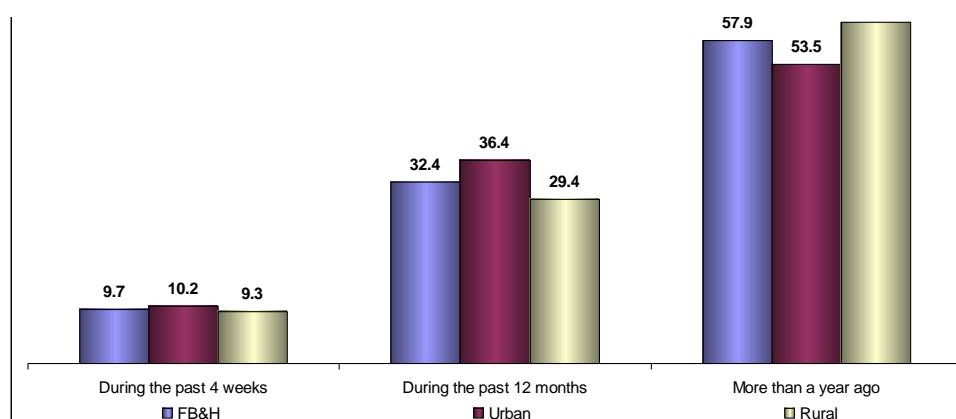
Slightly more female (34,7%) than male (29,9%) visited a medical specialists during the past 12 months. The highest percentage of respondents visiting a medical specialist during the past 12 months was among in the 65 and over age group (37,1%), and the lowest among respondents in the 18-24 age group (26,1%).
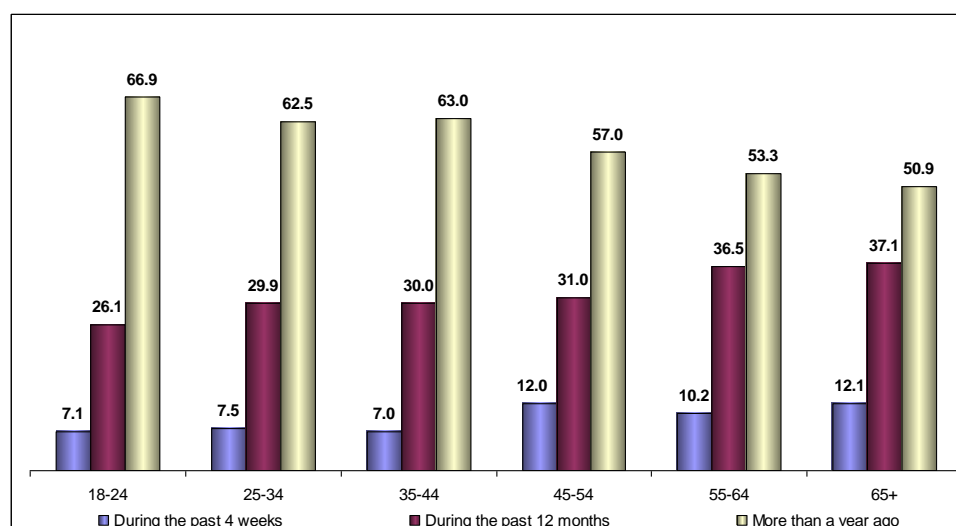
Graph 78 - *Respondents that visited a medical specialist during the past 12 months, by age in the FB&H, %*

Respondents in the FB&H visited a medical specialist on average 1,7 times during the past 4 weeks, whereby this was the case more among respondents living in rural (1,9 visits) than among those living in urban

areas (1,5 visits), with no difference between respondents of different sexes. The highest average number of visits was made by respondents in the 55-64 age group (2,5 visits).
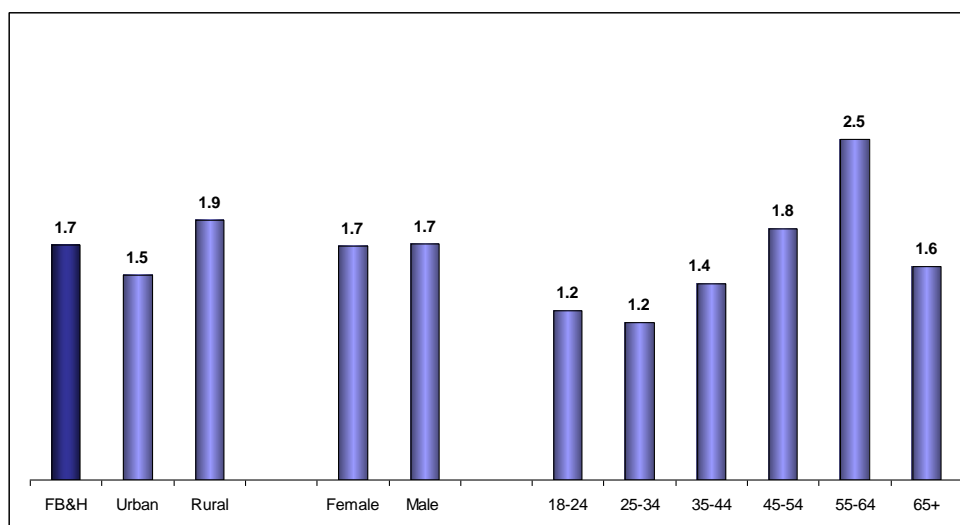
Graph 79 - *Average number of visits to medical specialist during the past 4 weeks in the FB&H*

4.2.3.5.1 Utilization of services provided by medical specialists in the public sector

Respondents in the FB&H visited a medical specialist on average 2,7 times during the past 12 months (excluding visits to a specialist family doctor), this number did not differ significantly between respondents of different sex and living in different settlement types. The highest average number of visits to a medical specialist was registered among respondents in the 65 and over age group (3,3).

Graph 80: Average number of visits to a medical specialist in the past 12 monhts
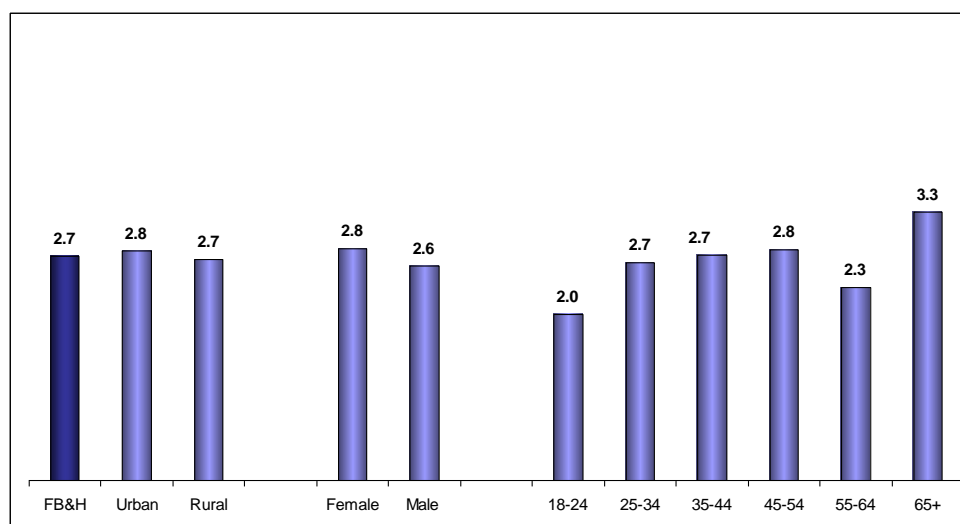
Graph 80 - *Average number of visits to a medical specialist in the past 12 monhts*

More than half of the respondents (59,1%) referred to a medical specialist were seen on the same day, more so respondents in rural (62,0%) than those in urban areas (55,1%). 18,0% of respondents waited between

2 and 3 days for an appointment with the medical specialist, 14,1% of respondents waited more then 7 days, while 8,9% waited between 5 and 7 days.

4.2.3.5.2 Utilization of services provided by medical specialists in the private sector

9,0% of respondents used services provided by medical specialists in the private sector in the past 12 months, 10,0% of respondents in urban and 8,3% of respondents in rural areas.

Services provided by medical specialists in the private sector were used more commonly by female (10,7%) then male (7,2%) and most commonly respondents aged 45-54 (11,4%).
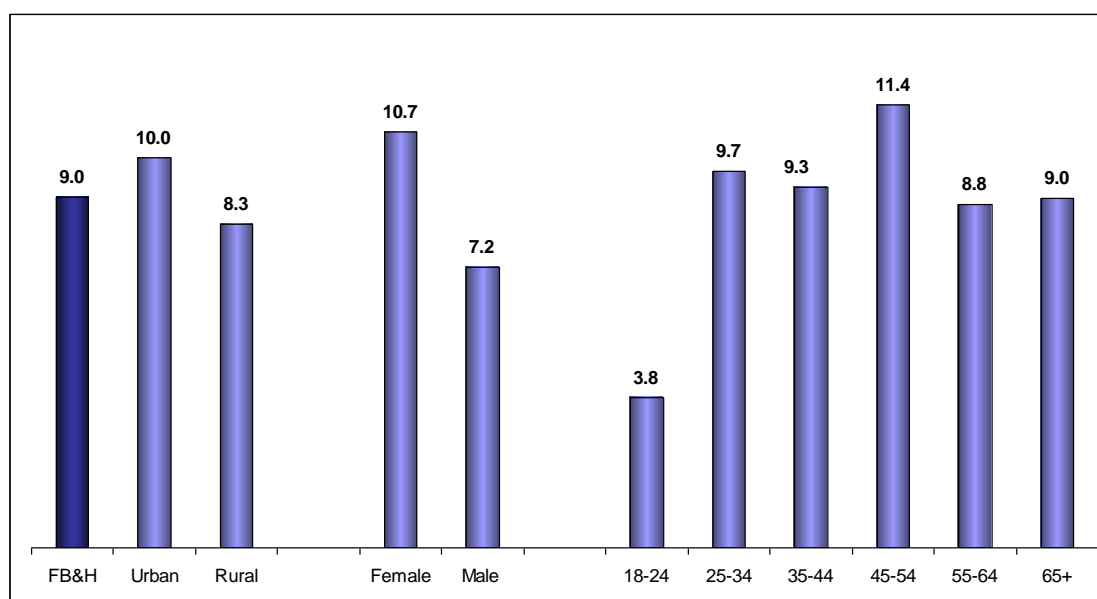
Graph 81 - *Respondents that have used and aid for services of a medical specialist in the private e sector in the past 12 months in the FB&H, %*

4.2.3.5.3 Waiting times for medical specialist services in private and public sectors

More than two thirds of respondents referred to medical specialist in a private practice in the FB&H (68,8%) were seen on the same day, while more than half of the respondents referred to a medical specialist in the public sector were seen on the same day.

Significantly more respondents waited longer than 7 days for an appointment with a medical specialist in the public
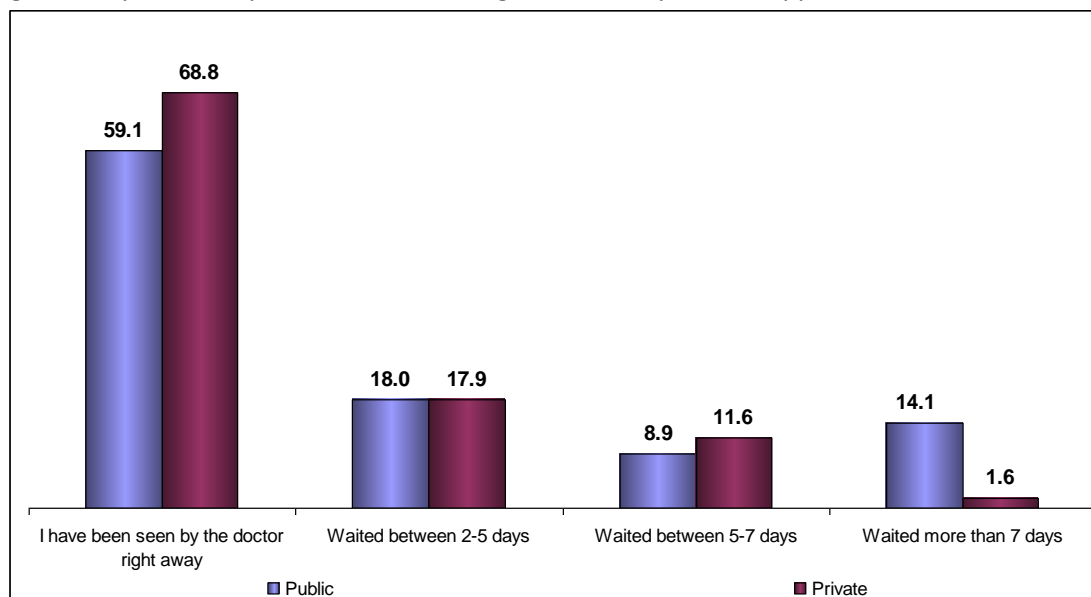
Graph 82 - *Waiting times for medical specialist services in private and public sectors in the FB&H, %*

(14,1%), than in the private sector (1,6%).

4.2.3.6 Hospital health care utilization

Two-fifths of respondents have been on hospital treatment at least once in their lifetime (40,6%). More than a third of respondents (35,4%) have been in the hospital more than a year ago, while 5,2% have been on hospital treatment in the past 12 months. There were no significant differences in terms of hospital treatment
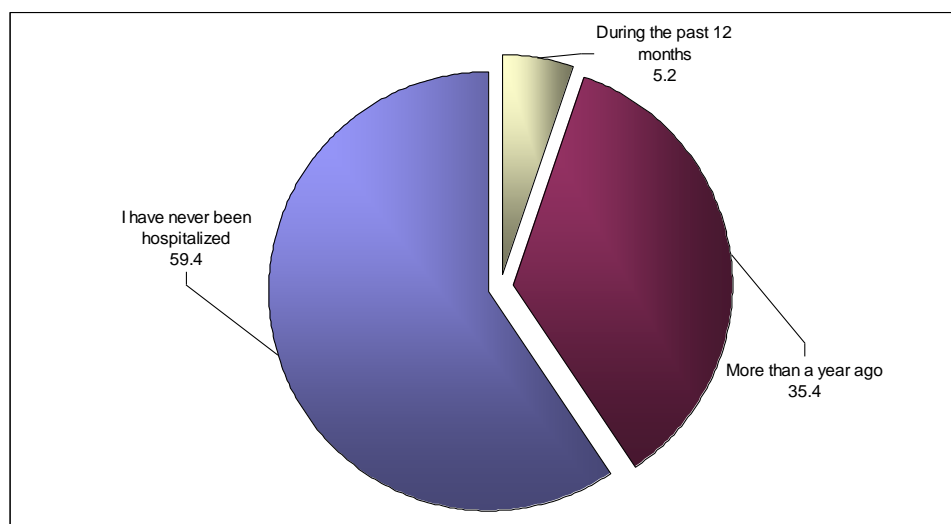
Graph 83 - *Respondents that have been on hospital treatment in the FB&H, %*

between respondents in different settlement types.

43,6% of male and 37,5% of female have been on hospital treatment at least once during their lifetime. Hospital health care utilization increased in line with respondents' age.
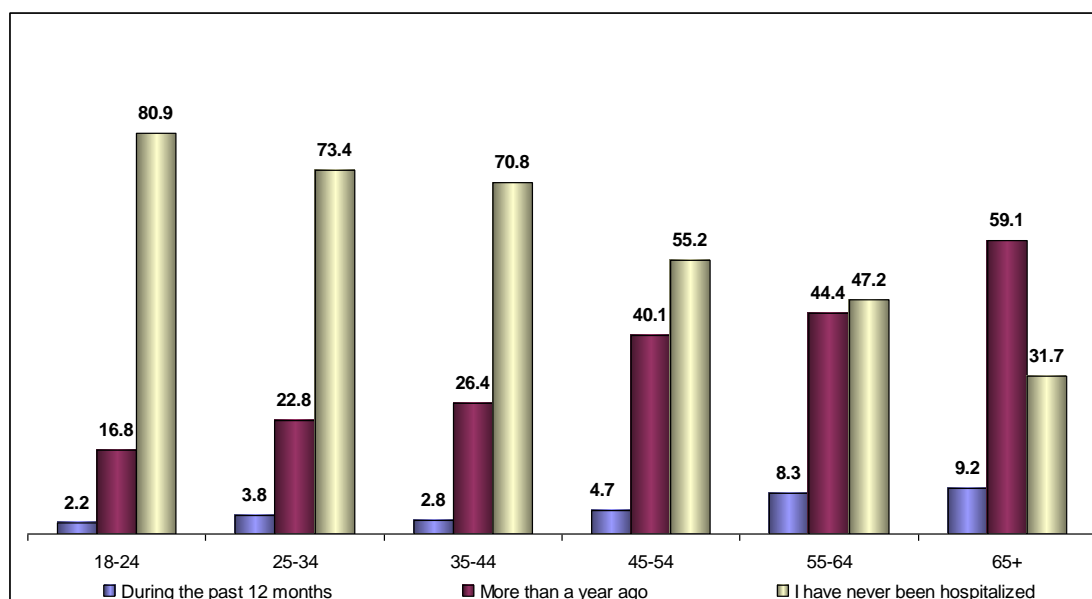
Graph 84 - *Respondents that have been on hospital treatment, by age in the FB&H, %*

Respondents that have been on hospital treatment during the past 12 months have been so on average 1,2 times.

4.2.3.6.1 Waiting times for hospital admission

Respondents in the FB&H waited on average 3,4 days to be admitted into the hospital, from the moment of receiving a referral for hospital treatment. Respondents in rural areas (3,6 days) waited on average slightly longer than respondents in urban areas (3,1 days).

4.2.3.7 Dental health care utilization

4.2.3.7.1 Dental health care utilization in the public sector

Among the respondents who have used the services of dentists in the public sector, almost two thirds visited a dentist more than a year ago (64,2%), a quarter of respondents (25,0%) visited a dentist during the last 12 months, and only 6,5% of respondents during the last four weeks, with no significant difference between respondents in different types of settlements or od different sexes.
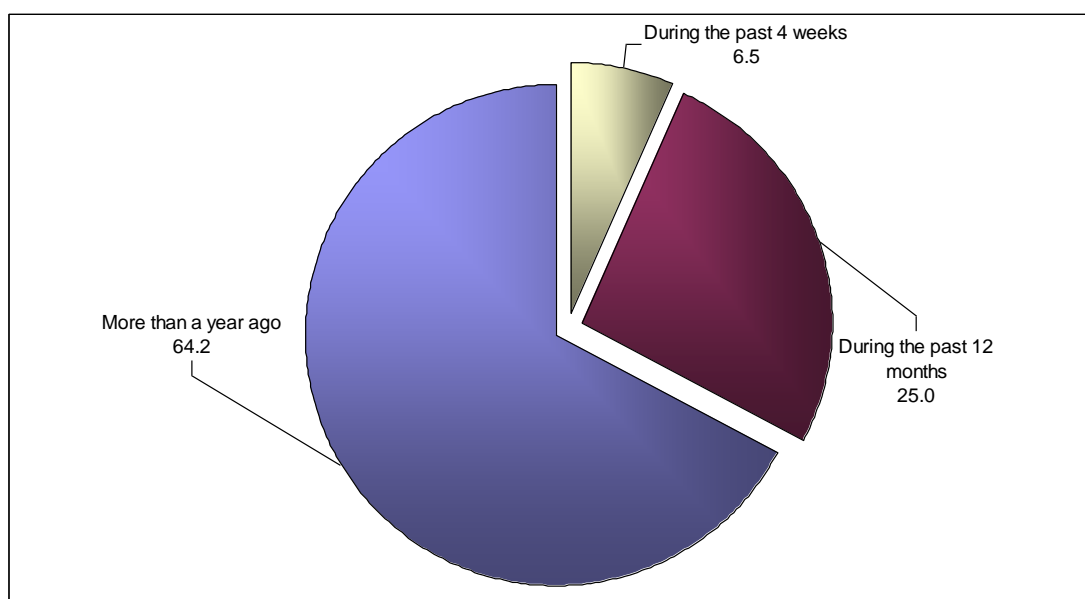
Graph 85 - *Respondents that have used the services of a dentist, by time passed since last appointment in the FB&H, %*

A quarter of respondents (25,0%) visited a dentist during the past 12 months, of which the highest percentage of respondents was in the 18-24 age group (44,3%). This percentage has a statistically significant decline in line with age and is lowest (10,0%) among respondents aged 65 and over *(p=0,000).*

23,3% of male and 26,7% of female visited a dentist during the past 12 months, whereby in both sexes the highest percentage of respondents was in the 18-24 age group (40,7% of male, 48,3% of female). This percentage has a statistically significant decline in line with age and is the lowest (11,5% of male, 8,0% of female) among respondents aged 65 and over (*p=0,000*).

Of the respondents who have visited a dentist during the past four weeks, the highest percentage was in the 18-24 age group (11,8%), and the lowest in the 65 and over (1,5%).

The highest percentage of respondents that visited a dentist more than a year ago, was in the 65 and over age group (82,9%), and the lowest in the 18-24 age group (39,8%).
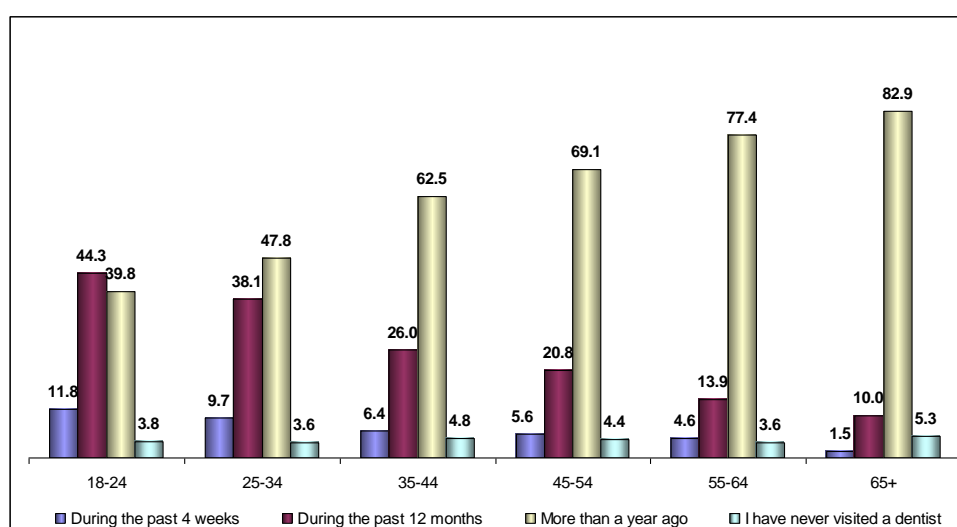
Graph 86 - *Respondents that have used the services of a dentist, by age and sex in the FB&H, %*

4,3% of respondents in the FB&H have never visited a dentist in their lifetime.

4.2.3.7.2 Average number of visits to the dentist

Respondents in the FB&H visited the dentist on average 1,8 times during the past 4 weeks, without difference between respondents in different settlement types.

The average number of visits during the past 4 weeks was higher among female (2,3 visits) then among male (1,3 visits), highest among respondents aged 65 and over (3,8 visits), and lowest among respondents in the 18-24 age group (1,3 visits).
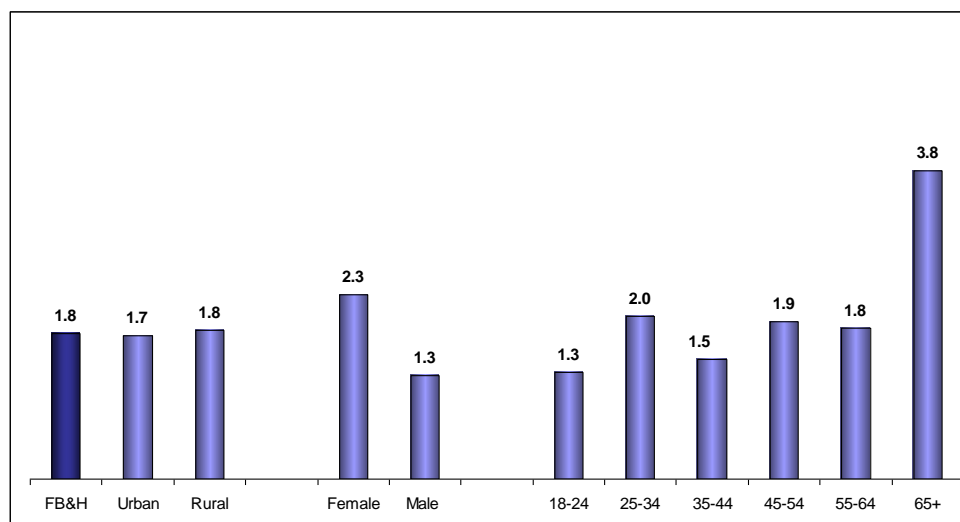
Graph 87 - *Average number of visits to a dentist during the past 4 weeks*

There were on average 2,2 visits to the dentist per respondent in the FB&H during the past 12 months, without significant differences between different age groups, different sexes and settlement types.
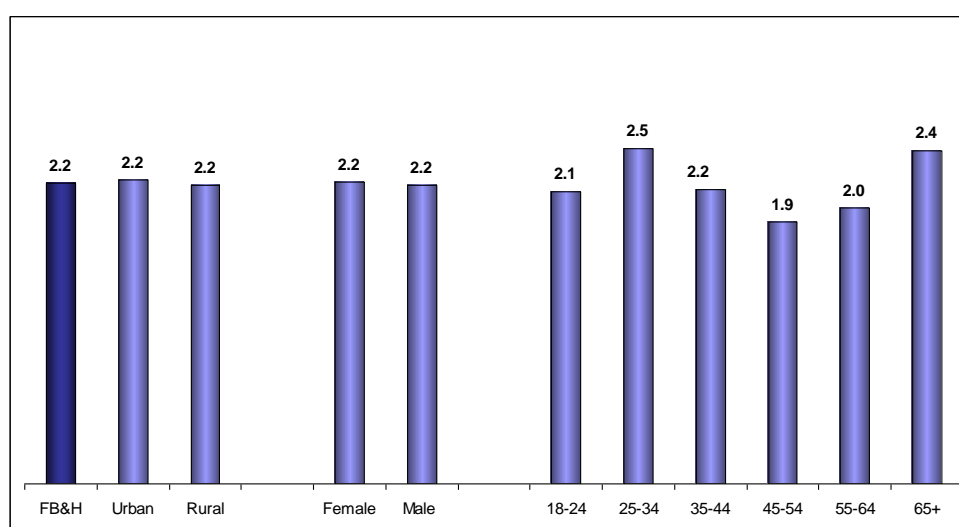
Graph 88 - *Average number of visits to a dentist during the past 12 months*

4.2.3.7.3 Main reasons for visiting a dentist

The highest percentage of respondents in FB&H (39,7%) reported that the main reason for their last visit to the dentist was tooth or gum treatment (39,7%). A third of respondents (33,5%) reported tooth extraction as the main reason for their last visit, which was more prominent among respondents in rural (38,2%) then urban areas (26,7%). 17,6% of respondents reported prosthetics work as the main reason for their last visit.

Only 5,6% of respondents in the FB&H reported a preventive care check-up as the main reason for their last visit to the dentist, while 3,4% reported toothache as the main reason.
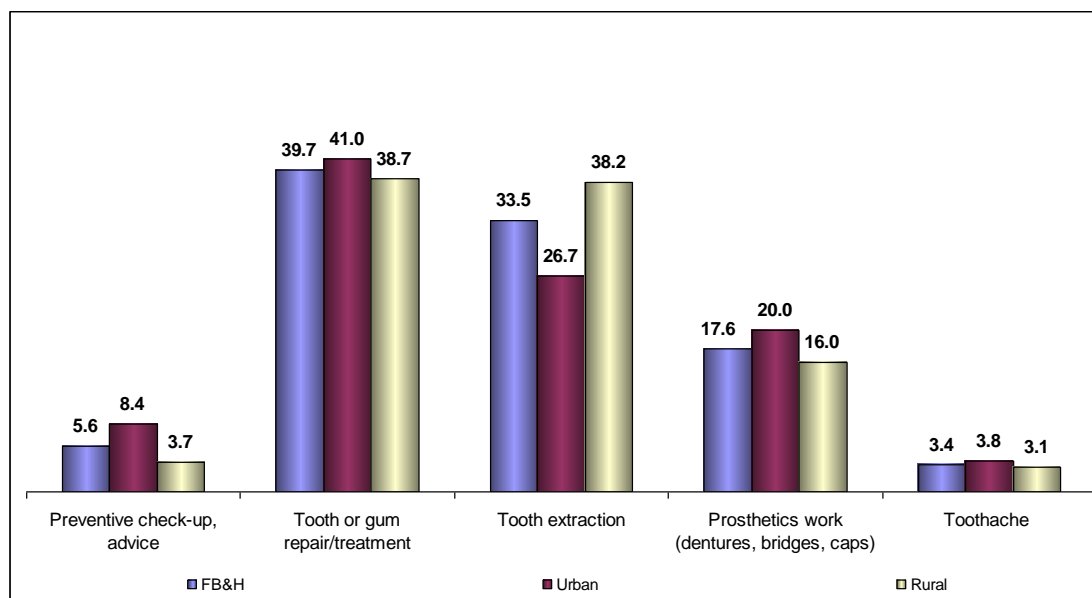
Graph 89 - *Main reasons for the last visit to a dentist in the FB&H, %*

Tooth extraction was the main reason for the last visit among more male (38,1%) then female (28,8%), while the opposite was true for prosthetics work, which was the main reason for the last appointment with a dentist among more female (20,9%) then male (14,3%).
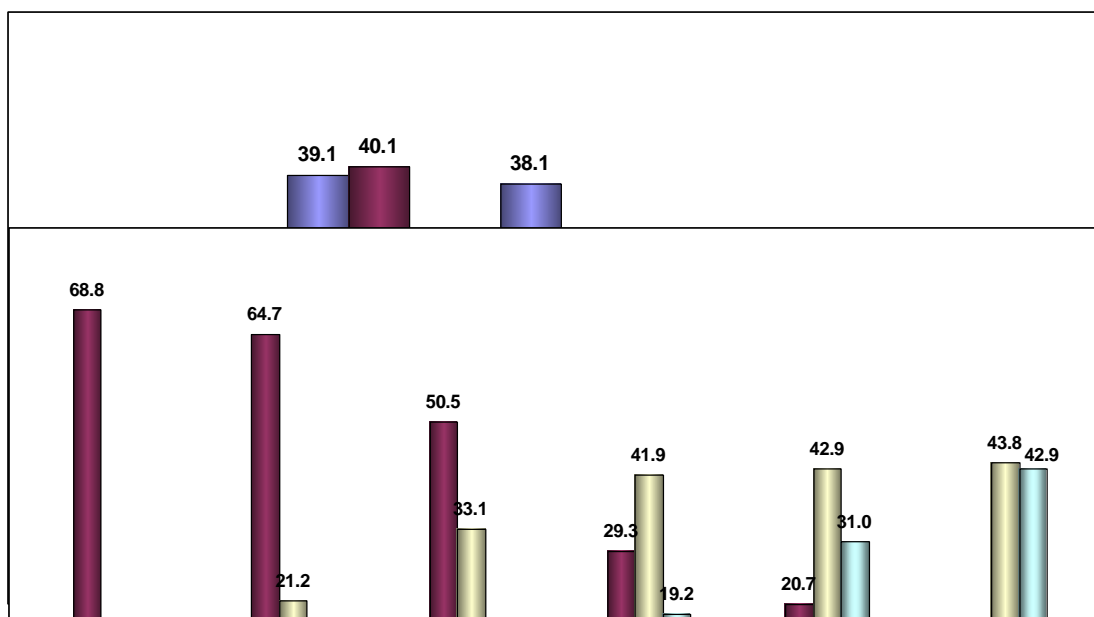
Graph 90 - *Main reasons for the last visit to a dentist, by sex in the FB&H, %*

39.1   40.1   38.1

68.8   64.7   50.5   41.9   42.9   43.8 42.9
21.2   33.1   29.3   19.2   20.7   31.0
3.5   2.0 2.4   4.1   3.2   4.2   1.9   3.1   1.3   3.8
0.7

| 18-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65+ |

■ Preventive check-up, advice ■ Tooth or gum repair/treatment ▫ Tooth extraction ▫ Prosthetics work (dentures, bridges, caps) ■ Toothache
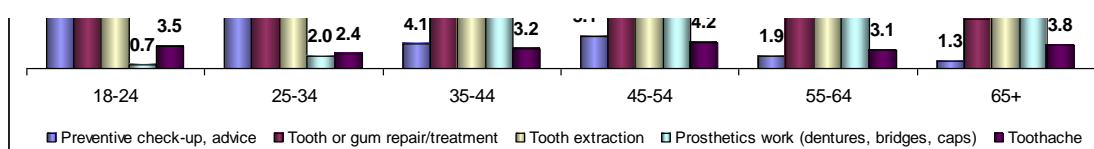
Graph 91 - *Main reasons for the last visit to a dentist, by age in the FB&H, %*

The highest percentage of respondents in the 18-24 age group indicated tooth or gum treatment as the main reason for their last visit to a dentist, while respondents aged 45 or more most commonly reported tooth extraction and prosthetics work as the main reasons for their last.

4.2.3.7.4 Dental health care utilization in the private sector

Less than a quarter of respondents in the FB&H (23,3%) have visited a dentist in a private practice in the past 12 months, more so respondents in urban (26,0%) than those in rural areas (21,4%). There were no significant differences in the usage of services of a dentist in the private sector between respondents of different sexes. The services of a dentist in the private sector were used most by respondents in the 18-24 age group (37,3%), this usage decreased in line with age and was lowest among oldest respondents (7,2%).
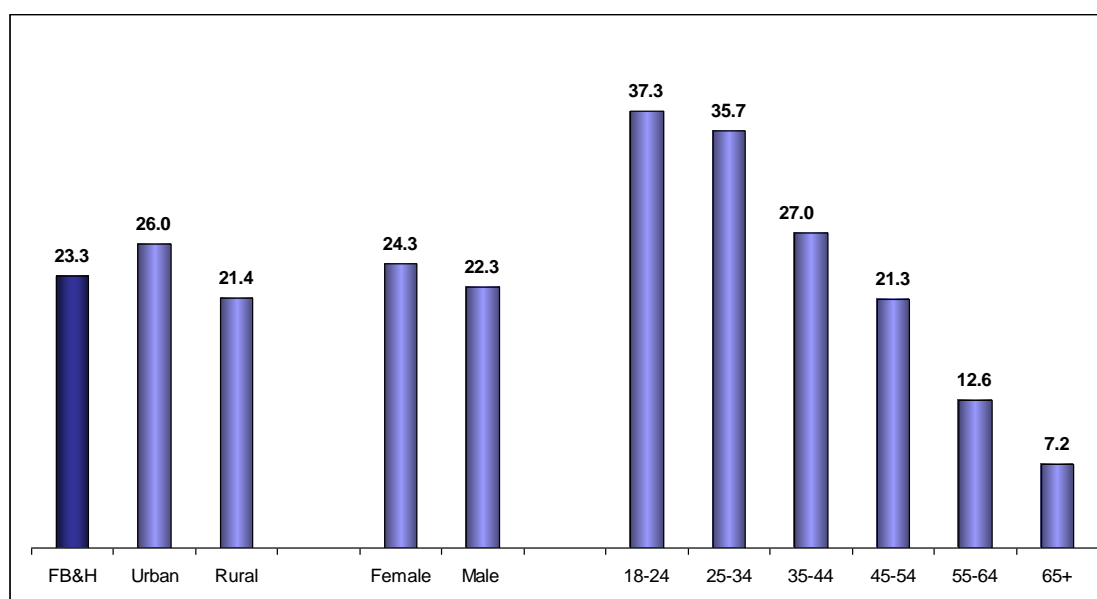
Graph 92 - *Respondents that have used the services of a dentist in the private sector during the past 12 months in the FB&H, %*

4.2.3.8 Prevention and early detection of diseases

4.2.3.8.1 Selected preventive care and diagnostic services

More than half of the respondents in the FB&H have had their blood pressure (54,0%) blood sugar (45,5%) and blood fats (42,7%) measured in health institutions during the past 12 months. 1,0% of respondents had a digito-rectal colon examination during the same period.

A quarter of respondents had their body weight measured (24,6%), while a slightly lower percentage had their body height measured (18,9%).

The percentages of respondents that have received these services did not differ significantly between the different settlement types.

The percentage of female receiving all the above mentioned services was slightly higher than the percentage of male, with the exception of the digito-rectal colon examination (male 1,6%, female 1,1%).

The percentage of blood pressure, blood sugar, and blood fats measurements increased in line with age and was highest among respondents aged 65 and over.

A digito-rectal colon examination was conducted most frequently among respondents in the 55-64 age group (2,1%).
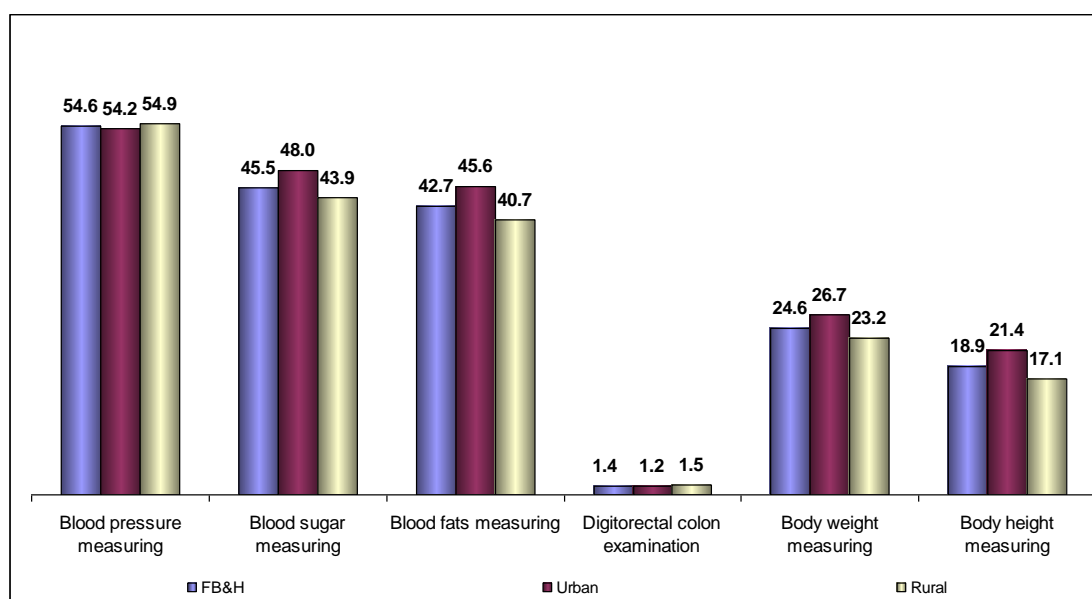
Graph 93 - *Respondents that received the selected preventive care services in the past 12 months in FB&H, %*

4.2.3.8.2 Advising by health workers

Doctors and other health workers have in the past 12 months advised around a fifth of all the respondents in the FB&H to: eat less fatty foods (22,0%), use less salt (20,0%), less sugar (17,7%), eat more fruit (17,4%).

Significantly lower percentages of respondents in the FB&H have been advised by a doctor or another health worker in the past 12 months to: reduce their body weight (10,9%), increase physical activity (10,3%), quit smoking (7,7%) and reduce their alcohol intake (2,1%). The percentages of respondents receiving such advice did not differ significantly between respondents in different settlement types.
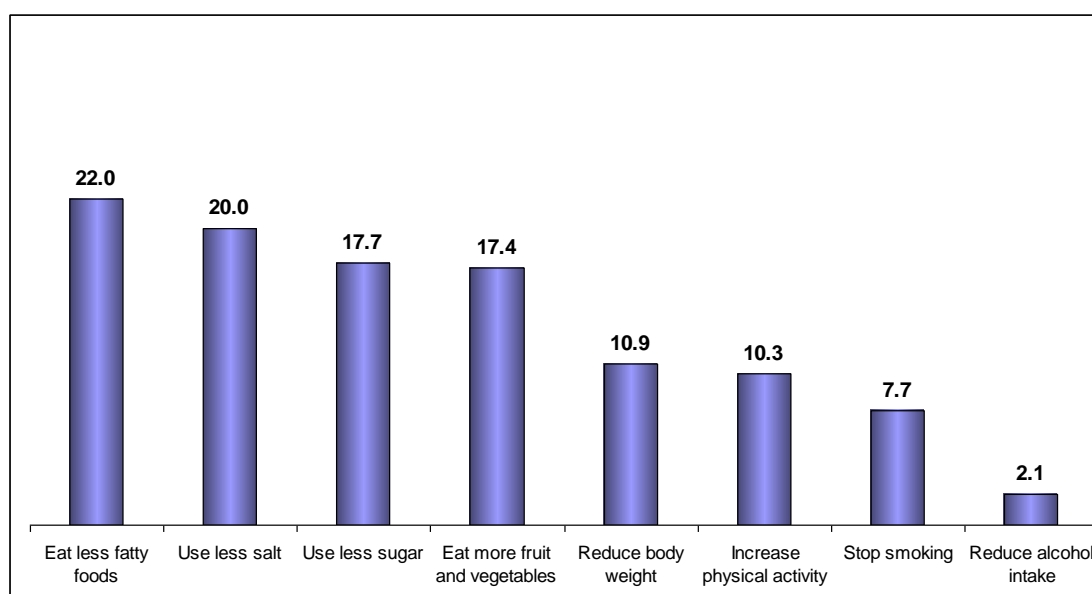
Graph 94 - *Respondent advising by doctors and other health workers during the past 12 months in the FB&H, %*

Female have been advised more often then male on undertaking all the above mentioned steps, with the exception of smoking cessation and alcohol intake reduction, which was more frequently advised to male.

The number of advice given to decrease fat intake, use less salt and sugar increased in line with age and was highest among respondents aged 65 and over.

Respondents in the 55-64 age group were most often advised to increase physical activity (19,6%), reduce body weight (19,5%) and reduce their alcohol intake (3,6%), while respondents in the 45-54 age group were most often advised to quit smoking (13,1%).

4.2.3.8.3 Cervical cancer screening

Slightly over half of the female respondents (51,0%) had a cervical smear – cervical cancer early detection (Papanicolau) test done in the past 3 years, more so female respondents in urban (57,7%) than those in rural areas (46,3%). The highest percentages of female that have done the Papanicolau test are in the 25-34 (63,7%) and 35-44 (57,5%) age groups.

Around a quarter of female (24,2%) have never undergone the test for the early detection of cervical cancer, more so female in rural (30,3%) than those in urban areas (15,6%) and more so female without education (37,6%) then those with tertiary education (10,7%).

Almost two-thirds of female aged 20-64 (65,7%) have undergone a cervical smear (Papanicolau test) at least once in their lifetime, more so female in urban (71%) than those in rural areas (61,8%). The highest percentages of female that have undergone the test at least once in their lifetime are in the 25-34 and 35-44 age groups. Higher percentages of female with tertiary education (83,5%) have done the test than those with secondary (75,8%), elementary (54,1%) or those without education (24,3%).

Almost two-thirds of female aged 51-64 (65,1%) have undergone a cervical smear in the past 5 years, more so female in urban (74,2%) than those in rural areas (58,5%). The percentage of female aged 51-64 undergoing a cervical smear in the past 5 years increases in line with the education level, from 49,9% of female without education to 88,8% of female with tertiary education.

Female have undergone the test for the early detection of cervical cancer most frequently on the advice of their doctor (63,2%), and self-initiatively (34,3%) and least so as part of an organized effort of early detection of cervical cancer (2,5%).
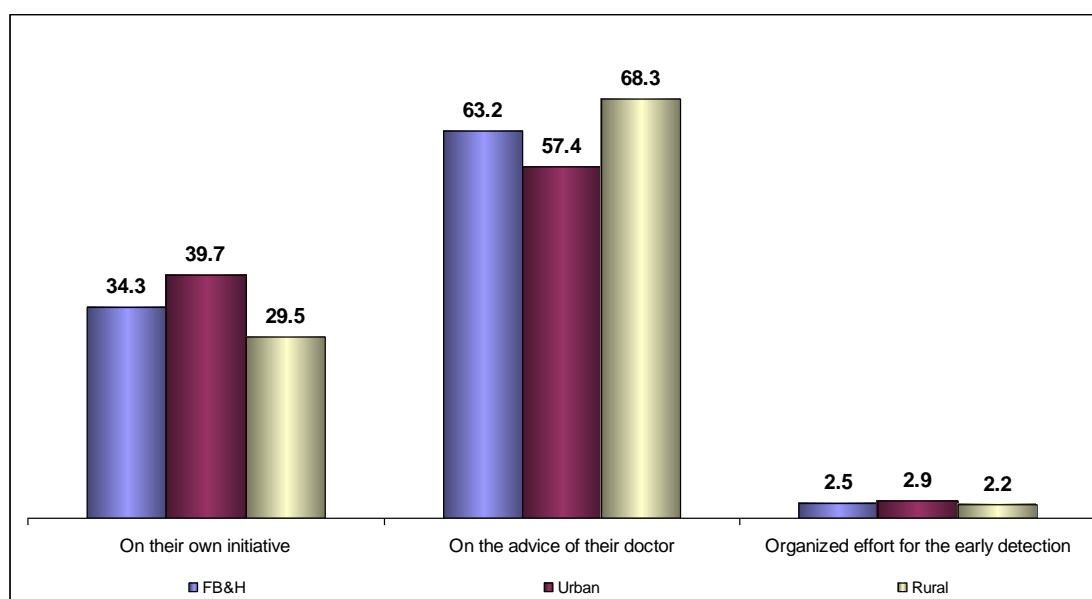
Graph 95 - *Female respondents that have undergone a cervical smear in the FB&H, %*

Chart legend: FB&H, Urban, Rural

Categories and values:
- On their own initiative: 34.3, 39.7, 29.5
- On the advice of their doctor: 63.2, 57.4, 68.3
- Organized effort for the early detection: 2.5, 2.9, 2.2

4.2.3.9 Breast cancer screening

4.2.3.9.1 Palpatory breast examination

More than half of the female surveyed have done a palpatory breast examination (58,2%), more so female in rural (65,5%) than those in urban areas (47,9%).

Slightly more than a third od female aged 50-69 have done a palpatory breast examination at least once in their lifetime (39,2%), more so female in urban (48,2%) than those in rural areas (32,5%). Female with tertiary education (75%) have done so more often than female with secondary (43,3%), elementary (35,4%) and those without education (19,5%).

Only 12,1% of female aged 50-69 have done a palpatory breast examination in the past 12 months, more so female in urban (15,1%) than those in rural areas (9,9%).

There is an evident increase of the percentage of female doing a palpatory breast examination in line with their level of education, it is lowest among female without education (8%), and highest among female with secondary and tertiary education (24,9%)

Around a third of all the female have been advised to do a palpatory breast examination by their doctor (36,6%), more so female in urban (43%) than those in rural areas (32%), and most so female with secondary and tertiary education. In terms of age, the highest percentages of female that received this advice were in the 45-54 (46,1%) and 25-34 (43,4%) age groups.

4.2.3.9.2 Mammography

Results show that more than two-thirds of female have never undergone a mammography examination with purpose of screening for breast cancer (77,8%), significantly more so female in rural (82,5%) than those in urban areas (71,3%).
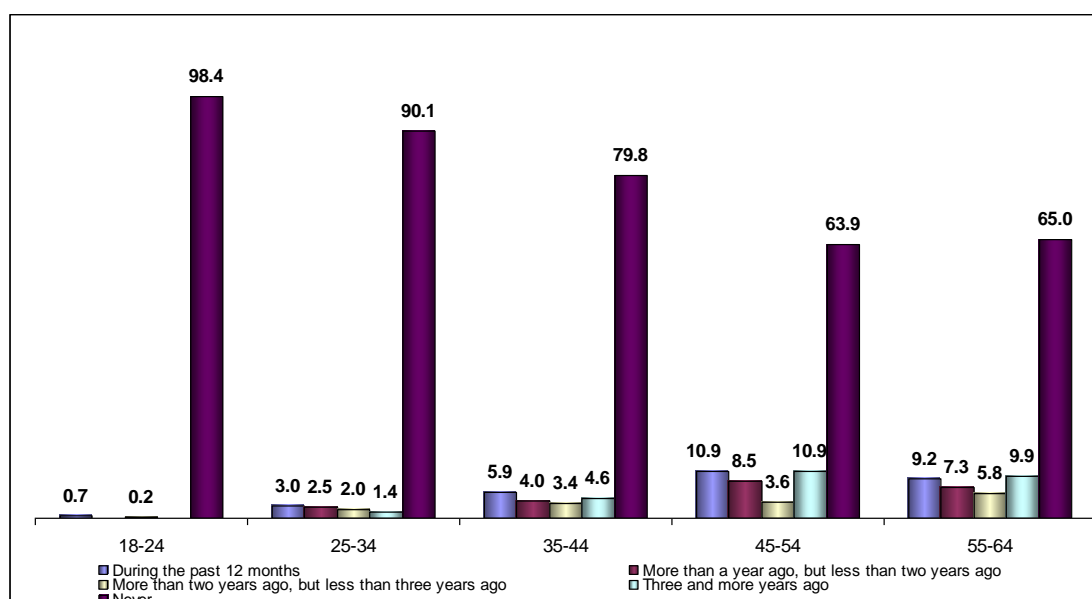
Graph 96 - *Female that have undergone a mammography examination, by their age and time passed since the last mammography in the FB&H, %*

Results show that every fifth female (20,3%) aged 50-69 has undergone radiographic breast imaging (mammography) in the past 3 years, more so female in urban (23,6%) than those in rural areas (17,8%), least so female without education (7,4%) and most so female with secondary and tertiary education (41,3%).
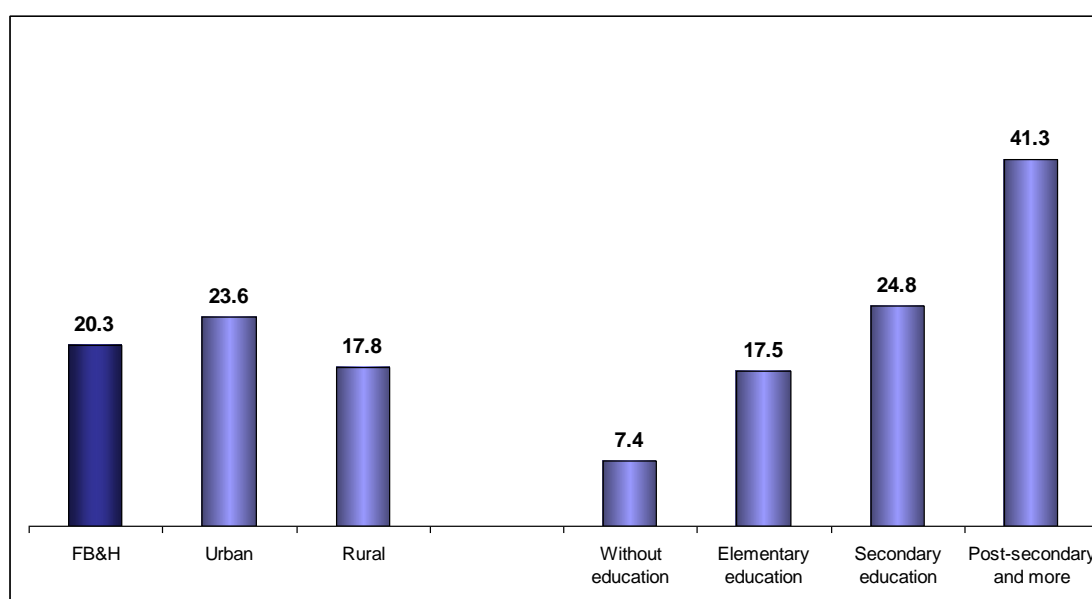

Graph 97 - *Female aged 50-69 that have undergone a mammography examination in the past 3 years, by education level and settlement type in the FB&H, %*

Only 8,6% of female aged 50-69 have undergone radiographic breast imaging (mammography) in the past 12 months, more so female in urban (11,2%) than those in rural areas (6,7%), least so female without education (2,2%) and most so female with secondary and tertiary education (11,7%).
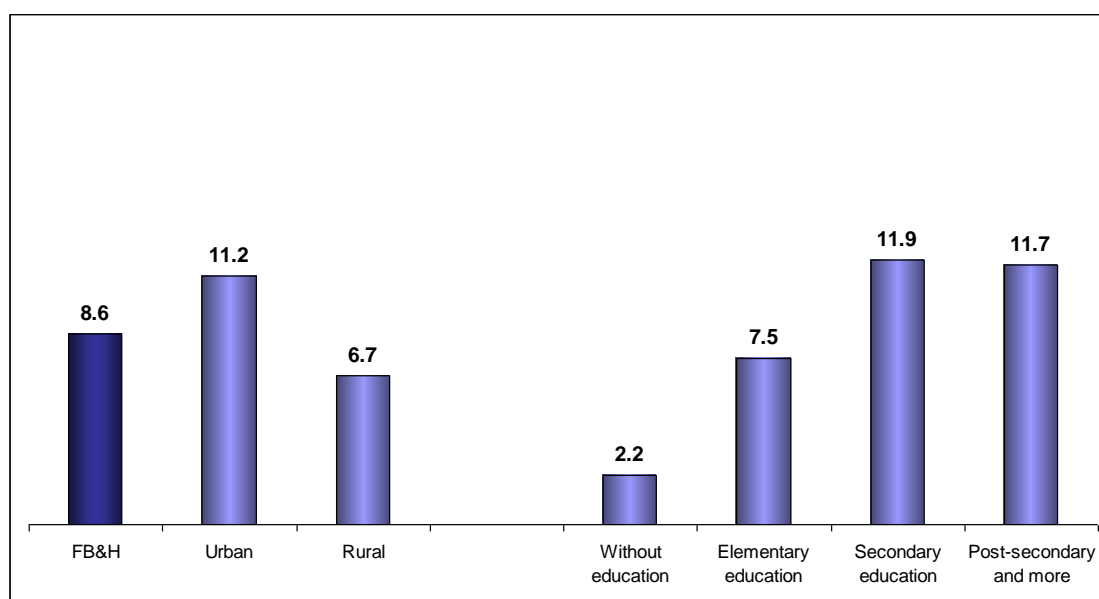
Graph 98 - *Female aged 50-69 that have undergone a mammography examination in the past 12 months, by education level and settlement type in the FB&H, %*

Female that have undergone a mammography examination have done so most often based on the recommendations of their doctor (66,6%), less often on self-initiative (33,7%) and least often as part of an organized effort for the early detection of early breast cancer detection (5,7%). Younger female were the ones to more often self-initiatively undergo a mammography examination.

4.2.3.10 Colon cancer screening

1,0% of respondents in the FB&H have undergone a fecal occult blood test in the past 12 months. An equal percentage of male and female (1,0%) have undergone this test.

In terms of age, the fecal occult blood test was most often done among respondents aged 70-75 (1,4%), 60-69 (0,8%) and 50-59 (0,7%).
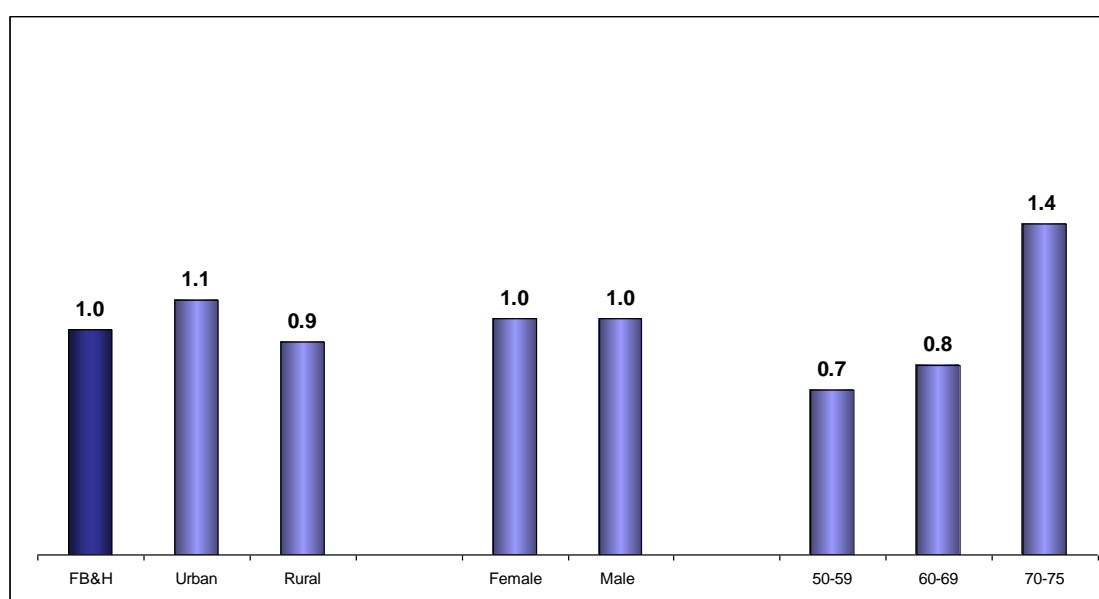
Graph 99 - *Respondents that underwent a fecal occult blood test in the past 12 months in the FB&H, %*

4.2.3.11 Flu vaccination

13,2% of respondents in the FB&H have been vaccinated against the flu at least once in their lifetime, more so respondents in urban (16,7%) than those in rural areas (10,7%). The highest percentage of vaccinated respondents was among those aged 65 and over (30,8%).
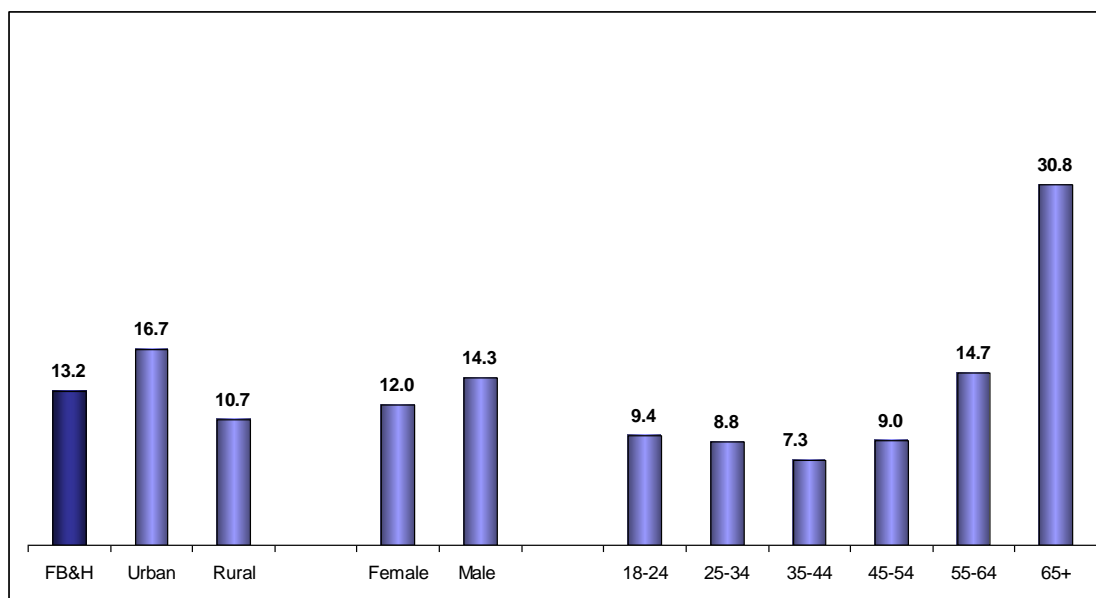
Graph 100 - *Respondents that have been vaccinated against the flu at least once in their lifetime in the FB&H, %*

Less than a quarter (22,9%) of respondents have been vaccinated against the flu during the past 12 months. The highest percentage of respondents vaccinated against the flu in the past 12 months was among those aged 65 and over (38,0%).
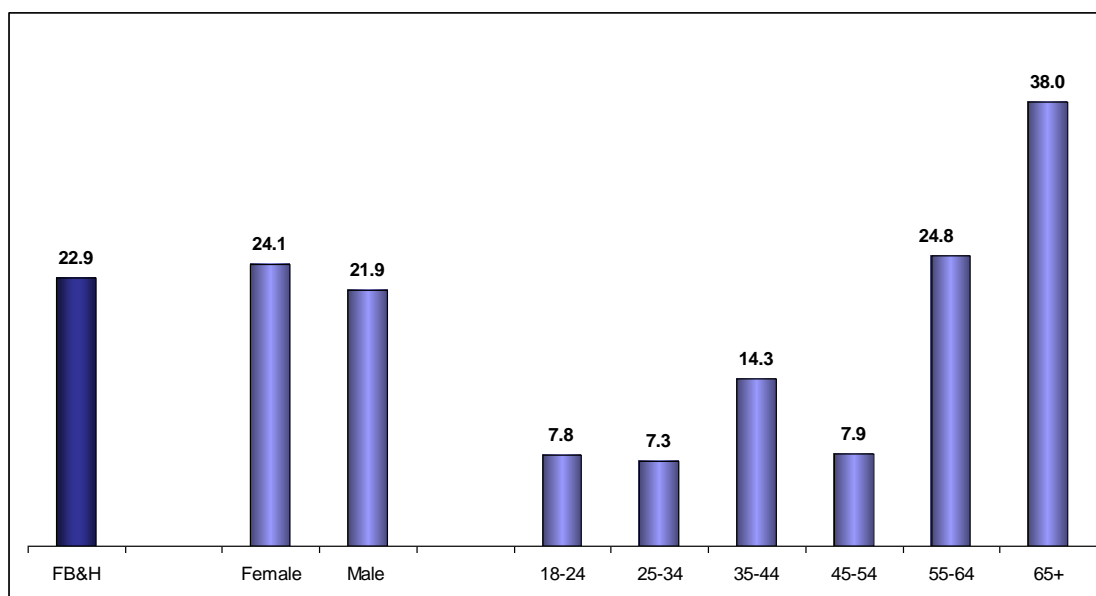
Graph 101 - *Respondents that have been vaccinated against the flu in the past 12 months in the FB&H, %*

4.2.3.12 Health control, preventive care, check-ups and advising in dental health care

Only 5,6% of respondents in the FB&H indicated a preventive care check-up and/or advising need as the main reason for their last visit to the dentist, more so respondents in urban (8,4%) than those in rural areas (3,7%).
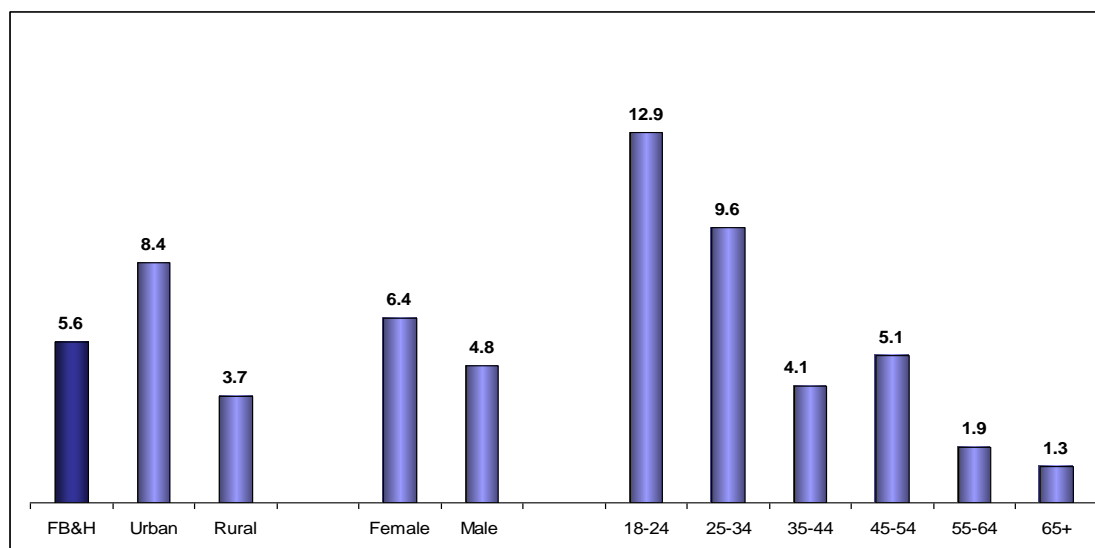
Graph 102 - *Preventive care, check-ups and advising in dental health care in the FB&H, %*

A preventive care check-up and/or counseling was the main reason for the last visit to a dentist among more female (6,4%) then male (4,8%), and was somewhat more common among respondents in the 18-24 age group (12,9%) when compared to older respondents.

4.2.3.13 Medication usage

Of the respondents who have been using medication on the recommendation of their doctor in the past 2 weeks, more than half have been taking high blood pressure medication, (57,95) while sedatives (15,2%) and antibiotics (8,4%) were being taken less often. More than half of the respondents (59,6%) have also been taking other medications, without significant difference between respondents of different sexes and living in different settlement types.

Graph 103 - **_Usage of medication prescribed by a doctor, during the past 2 weeks in the FB&H, %_**
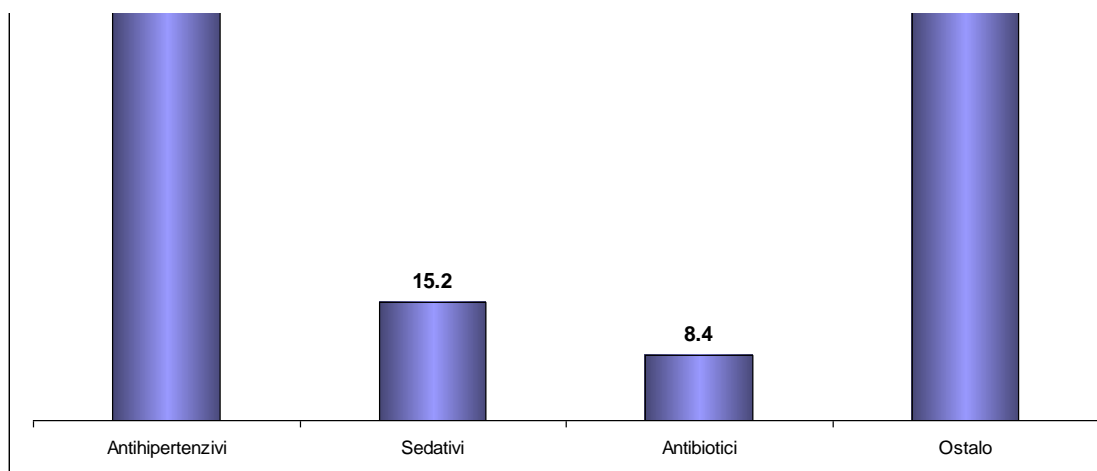
More than a third of respondents (36,0%) have been taking medication self-initiatively during the past 2 weeks, more so respondents in urban (37,3%) then those in rural areas (35,1%), and more so female (41,3%) then male (30,7%).
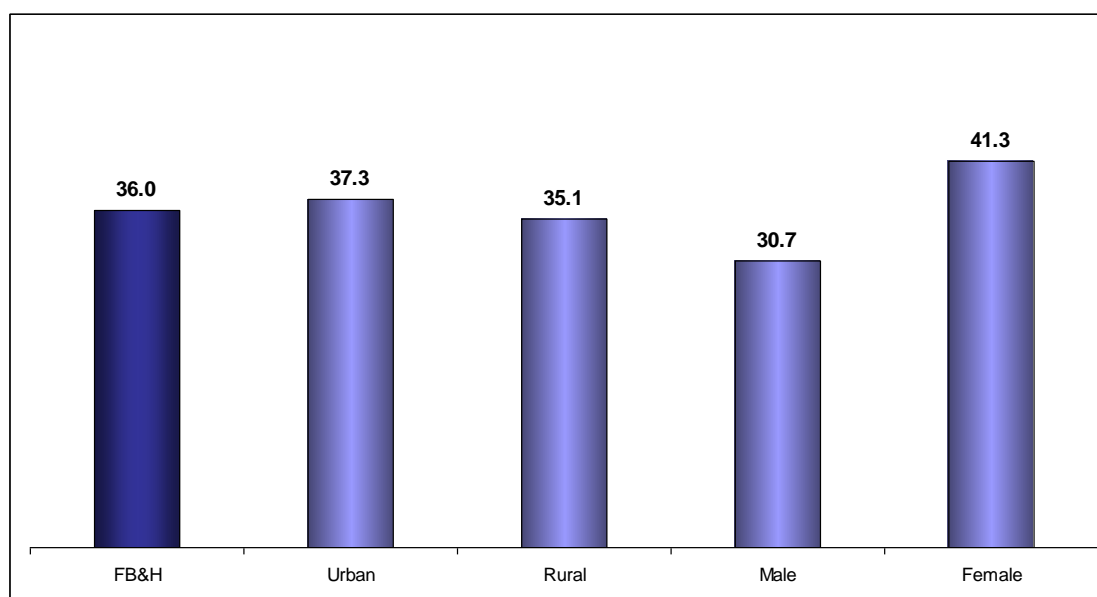
Graph 104 - **_Respondents that have been taking medication self-initiatively during the past 2 weeks in FB&H, %_**

4.2.3.14 Informal payments for health care services

14,1% of respondents in the FB&H have given money or gifts to a doctor or another health worker while being provided with health care services, more so respondents in rural (15,1%) than those in urban areas (12,5%), more so female (15,9%) than male (12,3%), and most so respondents in the 45-54 age group (16,9%).

The highest percentage of respondents has given money or gifts to a doctor or another health worker
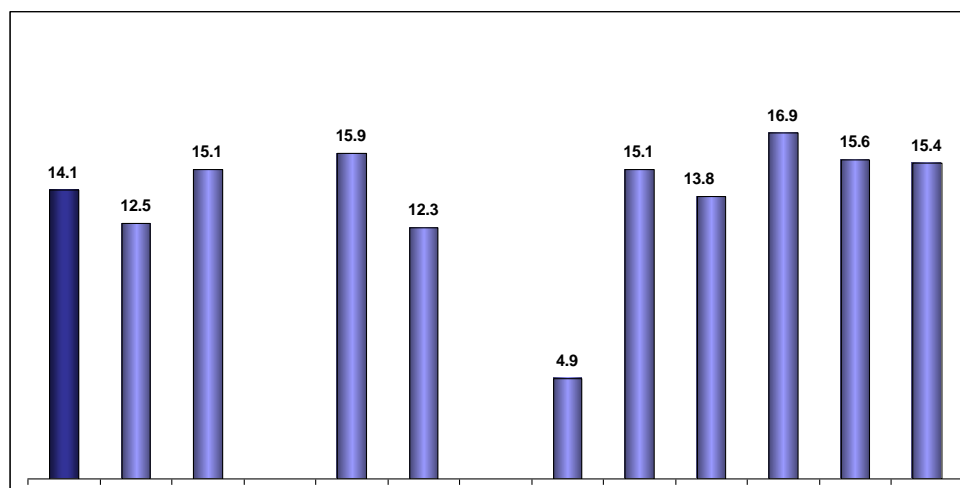
Graph 105 - *Respondents that that have given money or gifts to a doctor, another health worker, or a health institution employee while being provided with health care services in the public sector in the FB&H, %*

after a health care service was provided to them (48,9%). Over a third of the respondents have done so during treatment (39,5%), while a fifth (21,5%) did the same before being provided with a health care service.

1,8% of respondents reported that a doctor, another health worker or an employee has directly asked for money (excluding participatory payments) during a visit to a health institution or while scheduling an appointment with the doctor during the past 12 months. This was reported by more respondents in rural (2,1%) than those in urban areas (1,4%).

Female were more often exposed (2,2%) to such situations than male (1,5%), while respondents in the 45-54 (2,4%) age group were exposed to such situations most often.
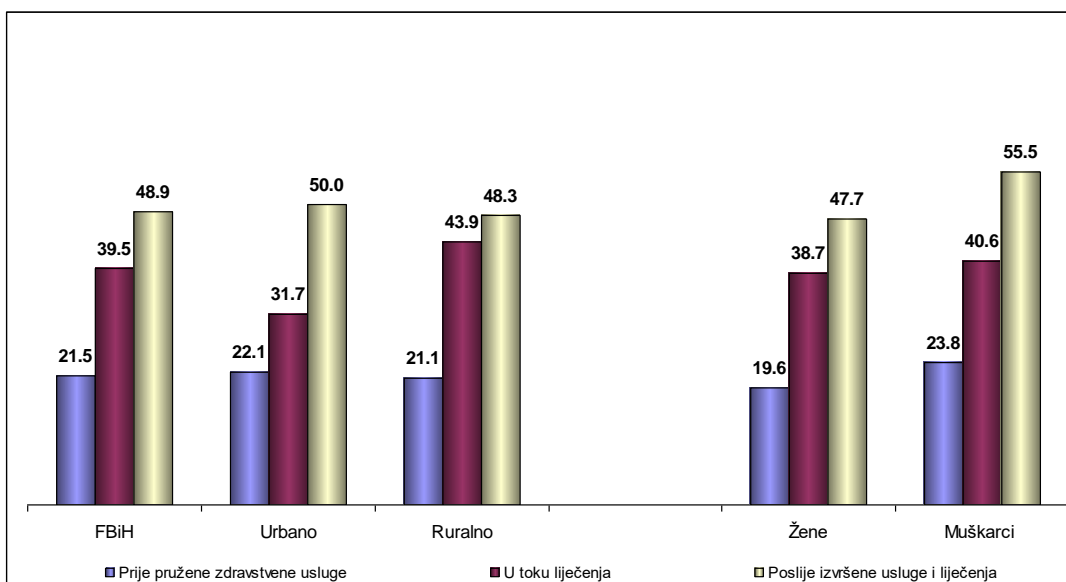
Graph 10606 - *Respondents that that have given money or gifts to a doctor, another health worker, or a health institution employee in the public sector, by informal payment timing in the FB&H, %*
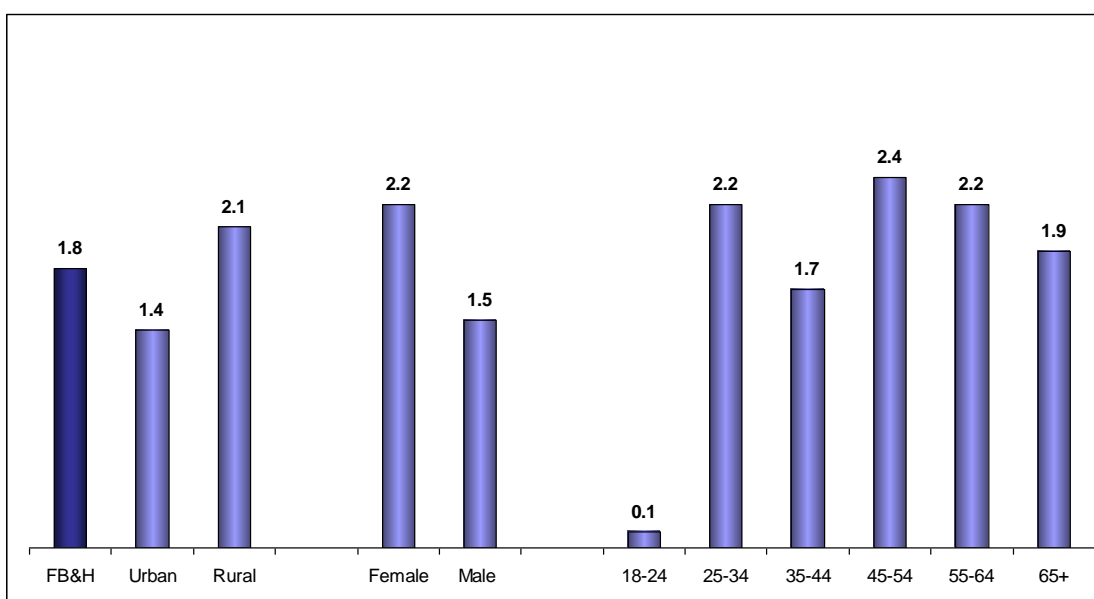
Graph 107 - *Respondents that have been directly asked for a payment by a doctor, another health worker, or a health institution employee while visiting a health institution or scheduling an appointment during the past 12 months in the FB&H, %*
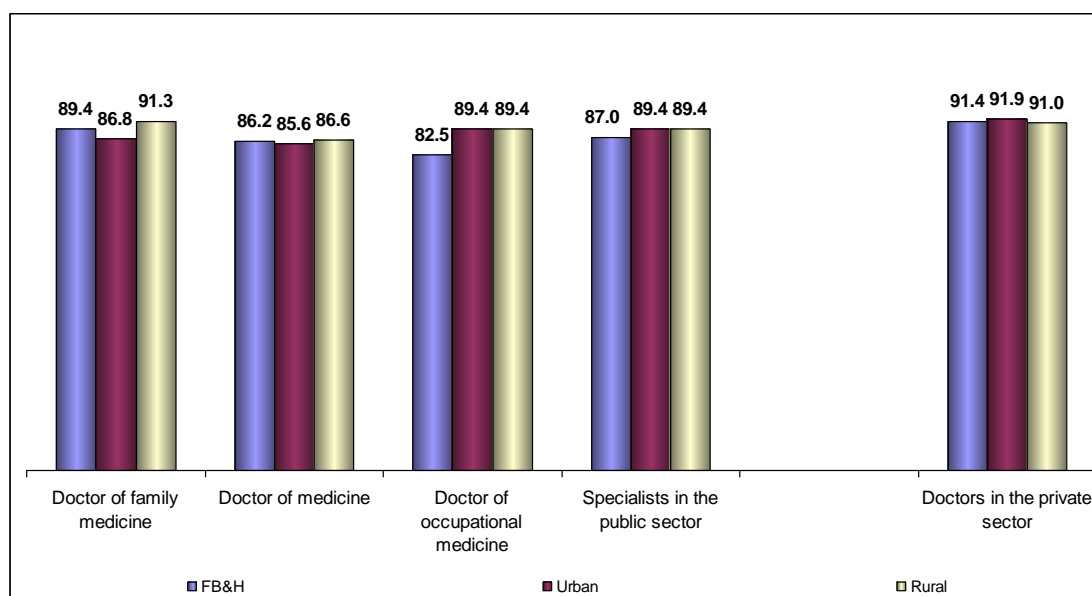
4.2.3.15 Satisfaction with health care services

4.2.3.15.1 Satisfaction with services provided by a doctor of medicine in the public and private sectors

Respondents that have visited a doctor of medicine in the public sector, have mostly been satisfied with the services provided by a family doctor (89,4%), more so respondents in rural (91,3%) than those in urban areas (86,8%).

More than four-fifths of respondents have been very satisfied or satisfied with the services provided by a doctor of general medicine (86,2%), a doctor of occupational medicine (82,5%) and a medical specialist (87,0%) in the public sector, without significant difference between respondents living in different settlement types.

91,4% of respondents have been satisfied or very satisfied with the services provided by a medical specialist in the private sector.

Graph 108 - *Respondents satisfied with the services provided by a doctor of medicine in the public and private sectors during the past 12 months in the FB&H, %*

4.2.3.15.2 Satisfaction with services provided by a dentist in the public and private sectors

Respondents in the FB&H that have in the past 12 months used services provided by a dentist have mostly been satisfied or very satisfied with these services, more so by those provided in the private (93,5%) than in the public sector (79,2%).

Significantly more respondents in urban (76,6%) than those in rural areas (50,0%) have been satisfied or very satisfied with dental services provided in the public sector.
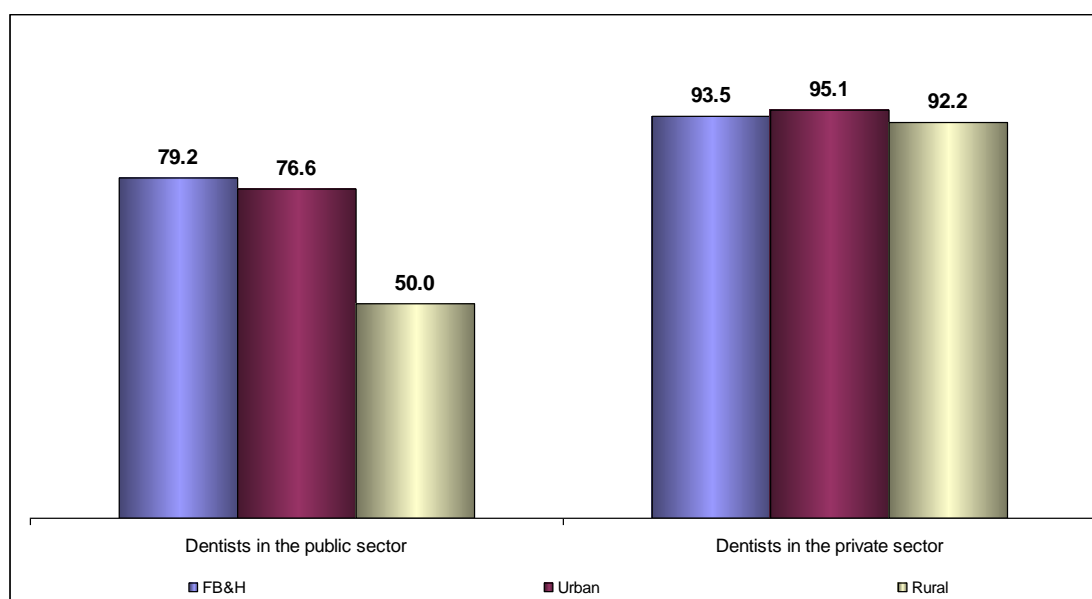
Graph 109 - *Respondents that were satisfied or very satisfied with dental services provided in the public and private sectors, by settlement type in the FB&H, %*

4.2.3.15.3 Satisfaction with hospital treatment and services

Respondents that have used hospital health care in the FB&H have mostly been satisfied (60,5%) or very satisfied (11,5%) with the hospital treatment. 6,7% of respondents were very unsatisfied with the treatment, while 5,0% were unsatisfied. There were no significant differences between user satisfaction among respondents of different sexes and living in different settlement types, while youngest respondents were most satisfied with the hospital treatment (82,6%)
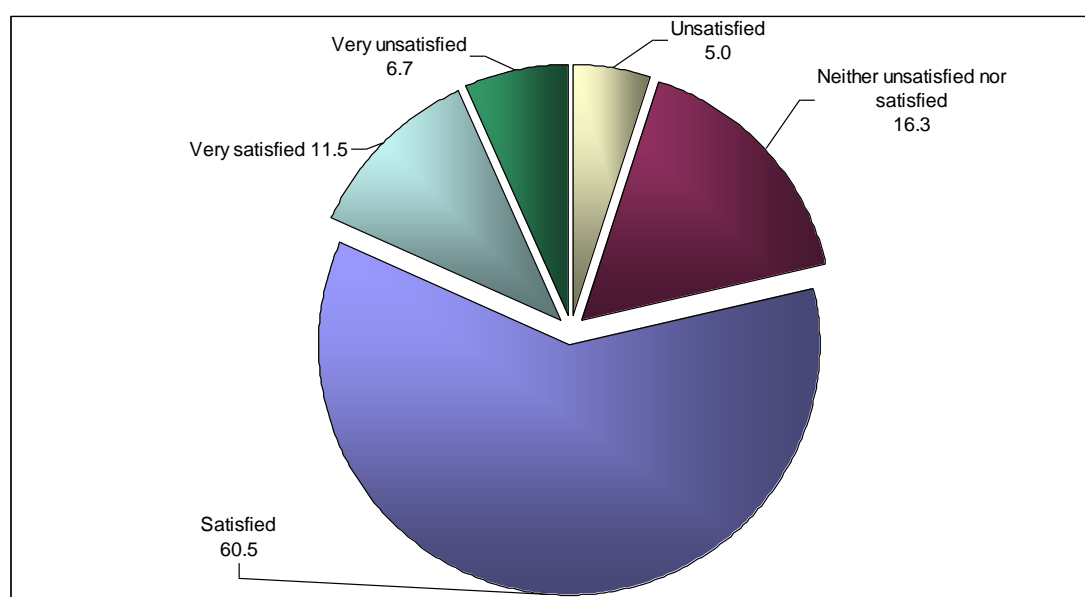
Graph 110 - *Satisfaction with hospital treatment in the FB&H, %*

4.2.4 Objective analysis results

4.2.4.1 Values of anthropometric measurements

4.2.4.1.1 Body mass index (BMI)

The Body mass index (BMI) was analyzed in accordance with WHO categories: underweight (less then 18,5 kg/m^2), normal weight (18,5-25 kg/m^2), overweight (25-29 kg/m^2) and obese (equal to or more than 30 kg/m^2).

Body height and weight was measured in 97,8% of respondents in the FB&H.

A Body mass index lower than 18,5 kg/m^2 (underweight) was measured in 1,6% of respondents in the Federation of BiH, the percentage of which was highest in the 18-24 age group (6,5%), had a statistically significant decrease in line with age and was lowest in the 65 and over age group (0,6%)

A Body mass index lower than 18,5 kg/m^2 was present among 0,8% of male and 2,5% of female, most so among respondents in the 18-24 age group of both sexes, being such in 3,3% of male and 10,2% of this age group (*p=0,000*).

Two-fifths of respondents in the Federation of BiH (39,7%) had a body mass index value in the 18,5-25 kg/m^2 range (normal weight) of which the statistically highest percentage of respondents was in the 18-24 age group (69,6%), while the lowest percentage of respondents with this BMI value range was in the 55-65 age group (20,8%) (*p=0,000*). A body mass index in the 18,5-25 kg/m^2 range was measured in 34,9% of male and 44,7% of female, whereby respondents of both sexes with this BMI value range were present in highest percentages in the 18-24 age group (63,9% of male and 75,9% of female), and in lowest percentages in the 55-64 age group (19,8% of male and 21,9% of female) (*p=0,000*).

More than a third of respondents in the FB&H (37,5%) have a Body mass index in the 25-29 kg/m^2 range (overweight), least so respondents in the 18-24 age group (20,2%) (*p=0,000*). A BMI in the 25-29 kg/m^2 range was measured in 45,2% of male and 29,6% of female, whereby the highest percentage of male with BMI values in this range was present in the 35-44 age group (50,7%), while the highest percentage of female with such BMI values was present in the 65 and over age group (37,4%) with statistically significant differences (*p=0,000*).

More than a fifth of respondents in the FB&H (21,2%) have a BMI equal to or more than 30 kg/m^2, (obese), of which the highest percentage of respondents was in the 55-65 age group (36,7%) and the lowest in the 18-24 age group (3,7%) (*p=0,000*). A BMI equal to or more than 30 kg/m^2 was measured in 19,1% of male and 23,3% of female, whereby respondents of both sexes with this BMI value were present in lowest percentages in the 18-24 age group (4,0% of male and 3,5% of female), and in highest percentages in the 55-64 age group (31,6% of male and 42,0% of female) (*p=0,000*).
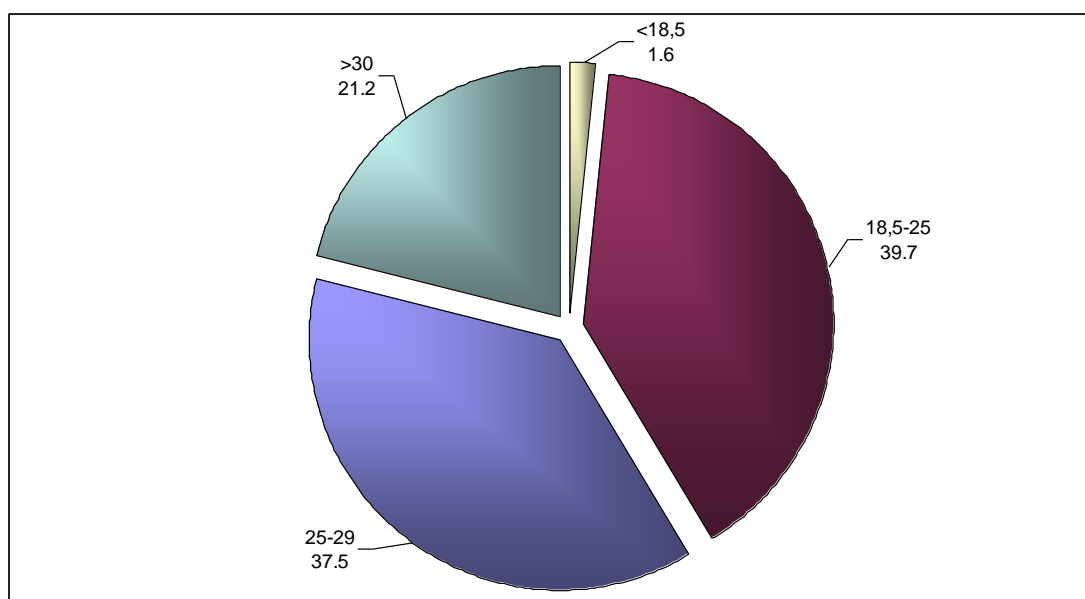
Graph 111 - *Body mass index values in the FB&H, %*

The highest percentage of respondents in FB&H, almost half of female (44,7%) and a third of male (34,9%), fall within the normal weight value range. 45,2% of male and 29,6% of female are overweight, 19,1% of male and 23,3% of female are obese and 0,8% of male and 2,5% of female are underweight.
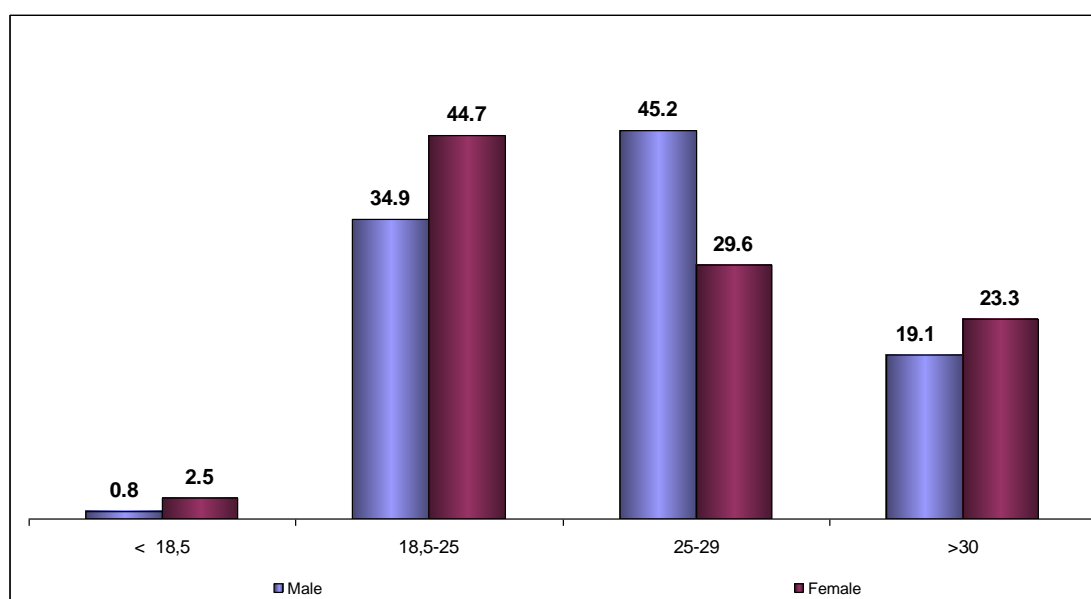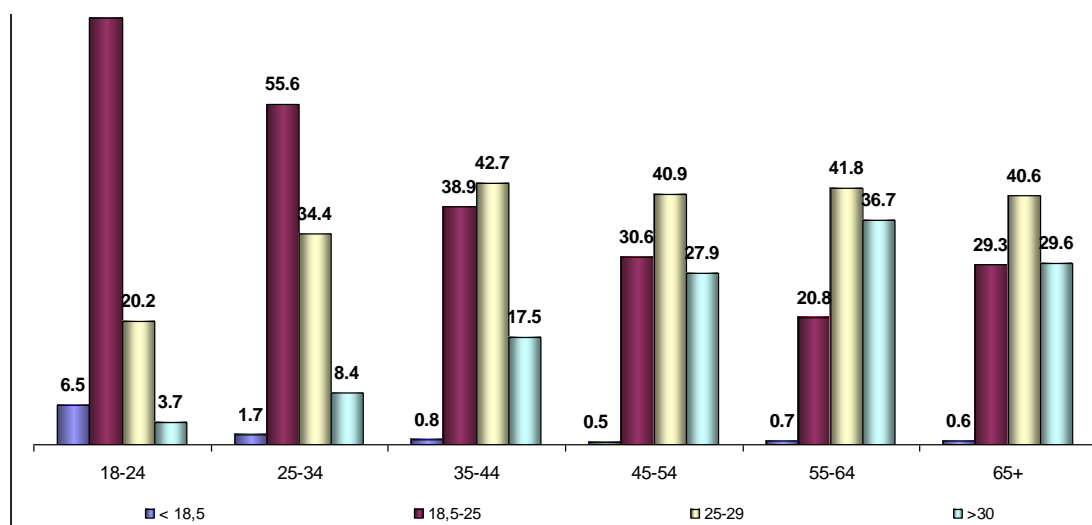

Graph 112 - *Body mass index values by sex and age in the FB&H, %*

The highest percentage of respondents with a normal weight BMI value was in the 18-24 age group (69,6%). The percentage of such respondents decreased in line with age and was lowest in the 55-64 age group (20,8%).

The highest percentage of respondents with a BMI in the overweight value range was present in the 35-44 age group (42,7%), while the lowest was in the 18-24 age group (20,2%).

Respondents with a BMI value range in the obese category were present in highest percentage in the 55-64 age group (36,7%) and in lowest in the 18-24 age group (3,7%).

Graph 113 - *Body mass index values by age in the FB&H, %*

Legend: ■ < 18,5   ■ 18,5-25   □ 25-29   □ >30

18-24: 6.5, 20.2, 3.7
25-34: 1.7, 55.6, 34.4, 8.4
35-44: 0.8, 38.9, 42.7, 17.5
45-54: 0.5, 30.6, 40.9, 27.9
55-64: 0.7, 20.8, 41.8, 36.7
65+: 0.6, 29.3, 40.6, 29.6

4.2.4.2 Blood test results – cholesterol, triglycerides, blood sugar

Blood tests were performed on 96% (3.688) of respondents, and included measuring of cholesterol, triglyceride, and blood sugar levels. Values of cholesterol =or> than 5 mmol/l were used as reference values for an increased level of cholesterol in the blood, (European Society of Cardiology and European Association for the Study of Diabetes). Blood cholesterol levels equal to or higher than the reference value (5 mmol/l) were measured in 44,4% of respondents, more so among respondents in rural (46,4%) than those in urban areas (41,1%). Blood cholesterol levels higher than 5 mmol/l were measured in slightly less than half of the female respondents (45,3%). The percentage of respondents with cholesterol levels higher than 5 mmol/l is lowest among youngest female respondents (16,2%) and has a statistically significant increase in line with age, being highest (63,2%) among female aged 65 and over (*p=0,000*). Blood cholesterol levels higher than 5 mmol/l were measured in 43,5% of male, whereby the percentage of male respondents with such levels of cholesterol is lowest among youngest respondents (14,3%) and has a statistically significant increase in line with age, being highest (60,9%) among male in the 55-64 age group (*p=0,000*).
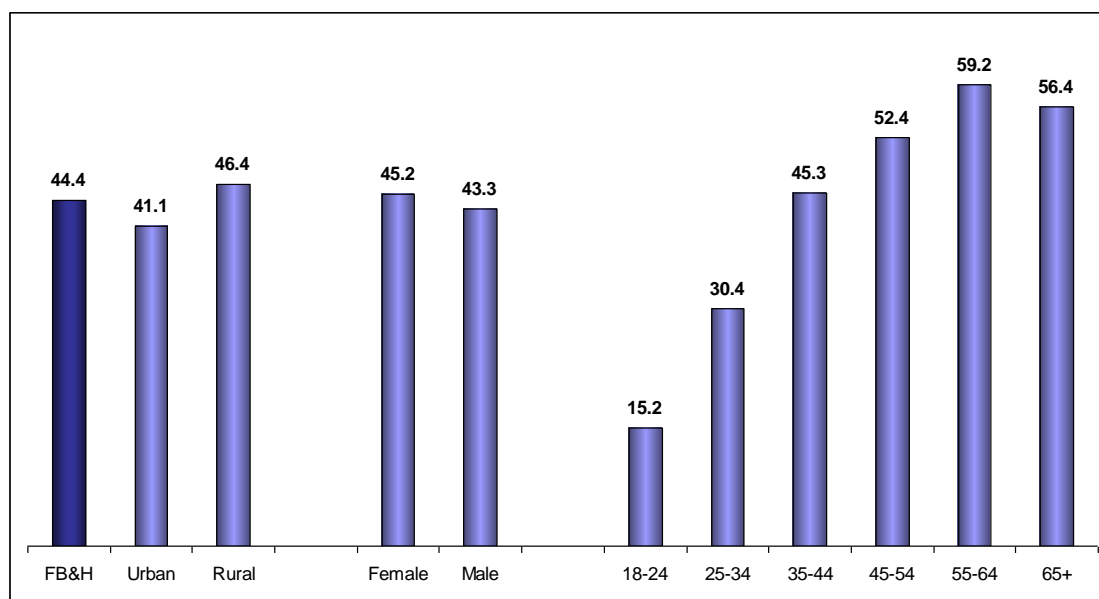
Graph 114 - *Respondents with cholesterol levels =or >5 mmol/l, by settlement type, sex and age in the FB&H, %*

The percentage of respondents with higher cholesterol values increases in line with age , and is highest among respondents in the 55-64 age group (5,3 mmol/l).
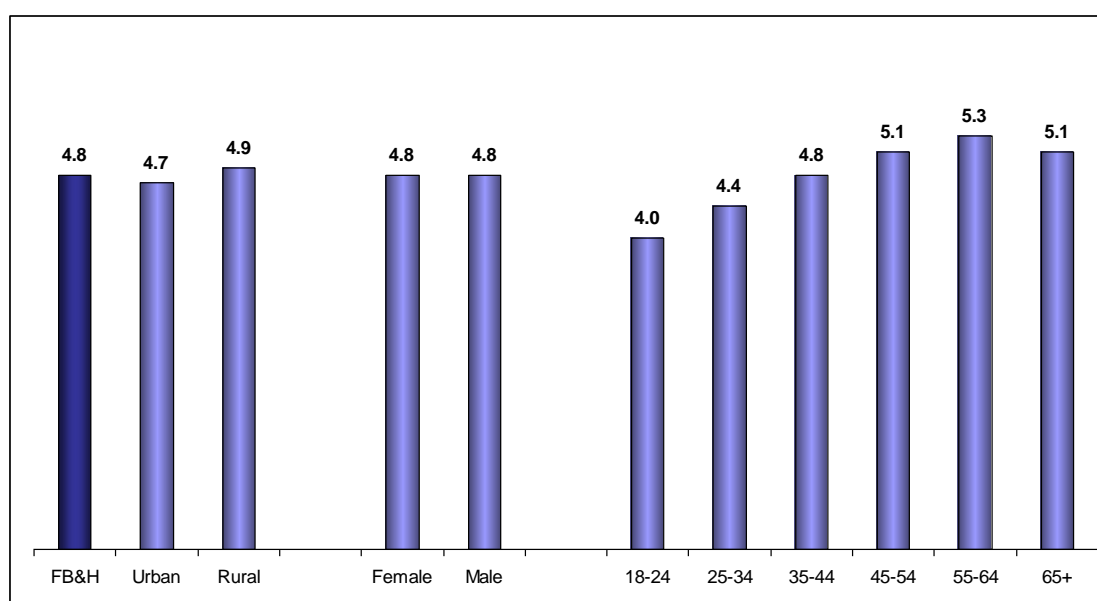

Graph 115 - *Average cholesterol values by settlement type, sex and age in the FB&H*

Blood triglyceride levels of respondents were analyzed in relation to the reference value = or> 1,8 mmol/l (European Health Risk Monitoring-EHRM). About one fifth of respondents (21,2%) had blood triglyceride levels higher than the reference value of 1,8 mmol/l, slightly more so respondents in rural (22%) than those in urban (20%) areas.

The percentage of male who had triglyceride levels = or> 1,8 mmol/l is 22,5%, the percentage of such respondents is lowest among youngest male respondents (9,5%), with a statistically significant increase in line with age, being highest (31,6%) among male aged 65 and over *(p=0,000).*

The percentage of female who had blood triglyceride levels = or> 1,8 mmol/l is 19,8%, the percentage of such respondents is lowest among youngest female respondents (6,8%), with a statistically significant increase in line with age, being highest (29,2%) among female aged 65 and over *(p=0,000).*
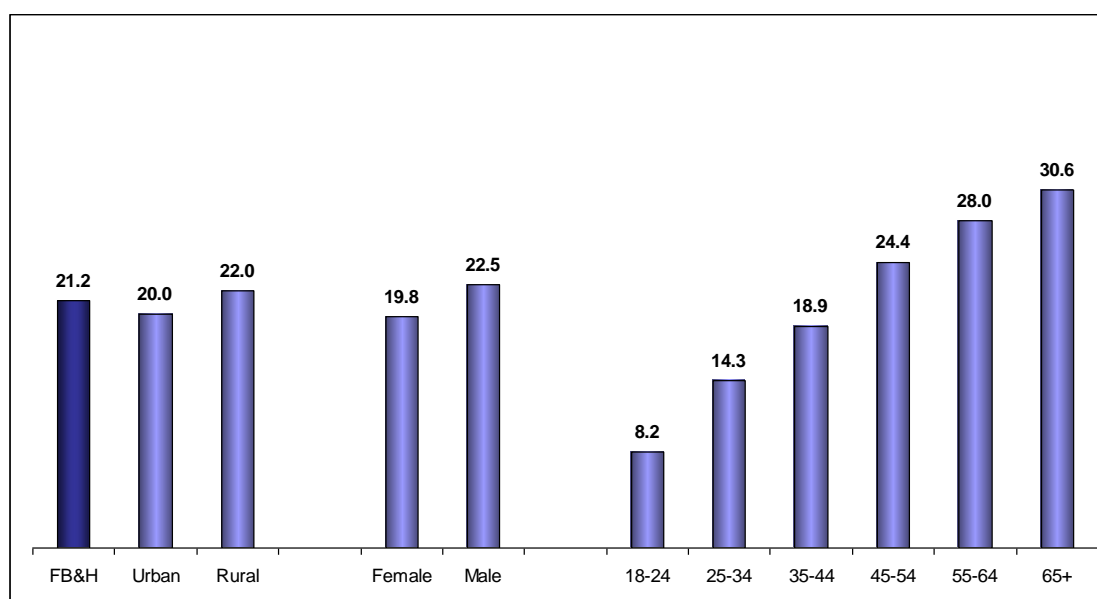
Graph 116 - *Respondents with triglyceride levels higher than 1,8 mmol/l, by settlement type, sex and age in the FB&H, %*

The average level of triglycerides among respondents in the Federation of BiH is 1,3 mmol/l, with no significant difference between respondents living in different types of settlements or of different sexes. The average level of triglycerides increases in line with age and is highest among respondents in the 55-64 age group (1,5 mmol/l).

Graph 117: Average triglyceride values by settlement type, sex and age in the FB&H
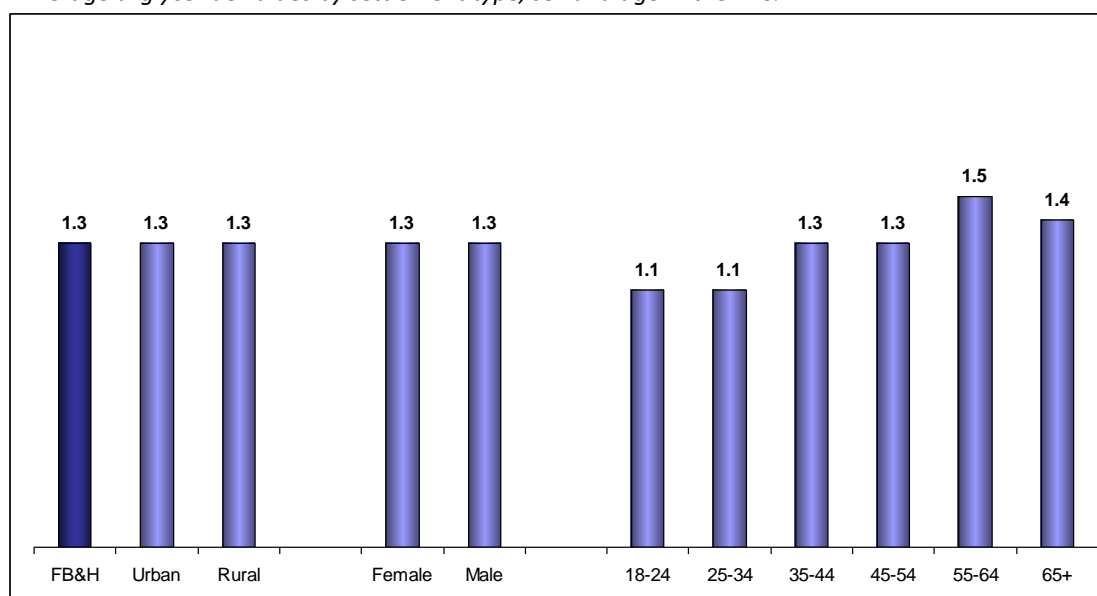
Graph 117 - *Average triglyceride values by settlement type, sex and age in the FB&H*

The reference values of =or> 5,6 mmol/l =or> (IDF) and =or> 6,1 mmol/l and =or> 7,0 mmol/l (European Health Risk Monitoring- EHRMl) were used for establishing blood sugar level thresholds

Around one third of respondents (34,4%) had blood sugar levels = or > 5,6 mmol/l, with no significant difference between respondents living in different settlement types or of different sexes.

Around one fifth of respondents (21,7%) had blood sugar levels equal = or > 6,1 mmol/l, with no significant difference between respondents living in different settlement types or of different sexes. This value was measured in around a fifth of female (22,1%).

The percentage of female with blood sugar levels = or > 6,1 mmol/l has a statically significant increase in line with age, being lowest among female respondents in the 18-24 age group (6,2%) and highest among female respondents in the 65 and over age group (49,8%), *(p=0,000).*

Blood sugar levels = or > 6,1 mmol/l have been measured in 21,3% of male, the highest percentage of which (36,7%) are in the 65 and over age group, and the lowest (3,6%) in the 18-24 age group, *(p=0,000).*
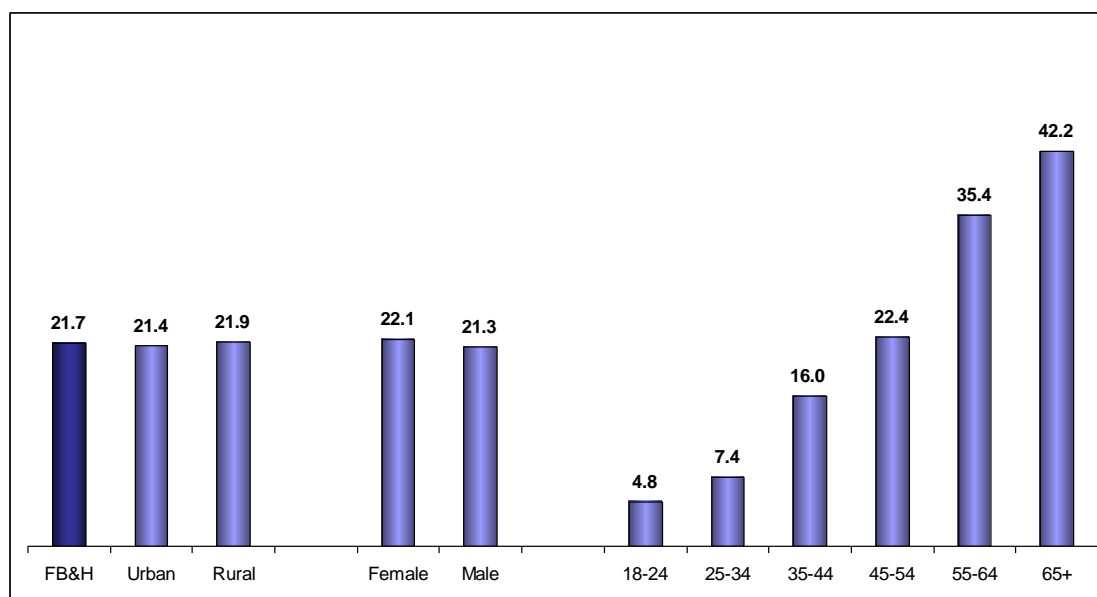
Graph 118 - *Respondents with blood sugar levels =or>6,1 mmol/, by settlement type, age and sex in FB&H, %*

The average measured blood sugar level among respondents is 5,4 mmol/l, with no significant difference between respondents living in different settlement types or of different sexes (5,4 mmol/l for female and 5,3 mmol/l for male). However, differences related to the education level and age of respondents are present. The highest blood sugar levels were recorded among respondents with primary education (5,9 mmol/l), and among respondents aged 65 and over (6,3 mmol/l).
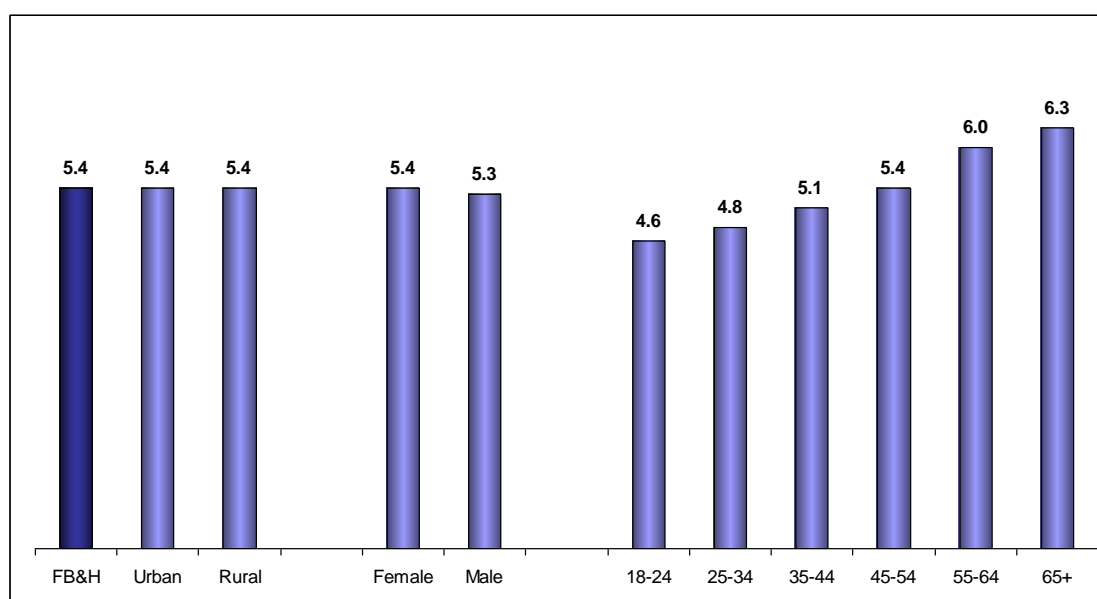
Graph 119 - *Average blood sugar values, by settlement type, sex and age in the FB&H*

Blood sugar level =or>7,0 mmol/l (European Health Risk Monitoring-EHRM) was measured in 9,8% of respondents. This blood sugar level was equally present among female and male, while the highest percentage of respondents with this blood sugar level is in the 65 and over age group.

4.2.4.3 Blood pressure

4.2.4.3.1 Blood pressure values according to WHO and ESH/ESC Guidelines for the management of arterial hypertension 2013

According to the definition and guidelines of the WHO and the International Society of Hypertension ESH/ESC Guidelines for the management of arterial hypertension 2013 having values of systolic blood pressure >140 mmHg, and diastolic >90 mmHg is considered as having high blood pressure (hypertension)

Measurements of blood pressure were conducted in 97,5% of respondents in FB&H. The blood pressure (systolic and diastolic) was measured three times repeatedly, and the final value is expressed as an arithmetic mean of the three measurements.

4.2.4.3.2 Systolic blood pressure values

The average systolic blood pressure of respondents in the FB&H is 132,7 mmHg, and it is slightly higher among male (134,7 mmHg) than among female (130,6 mmHg).
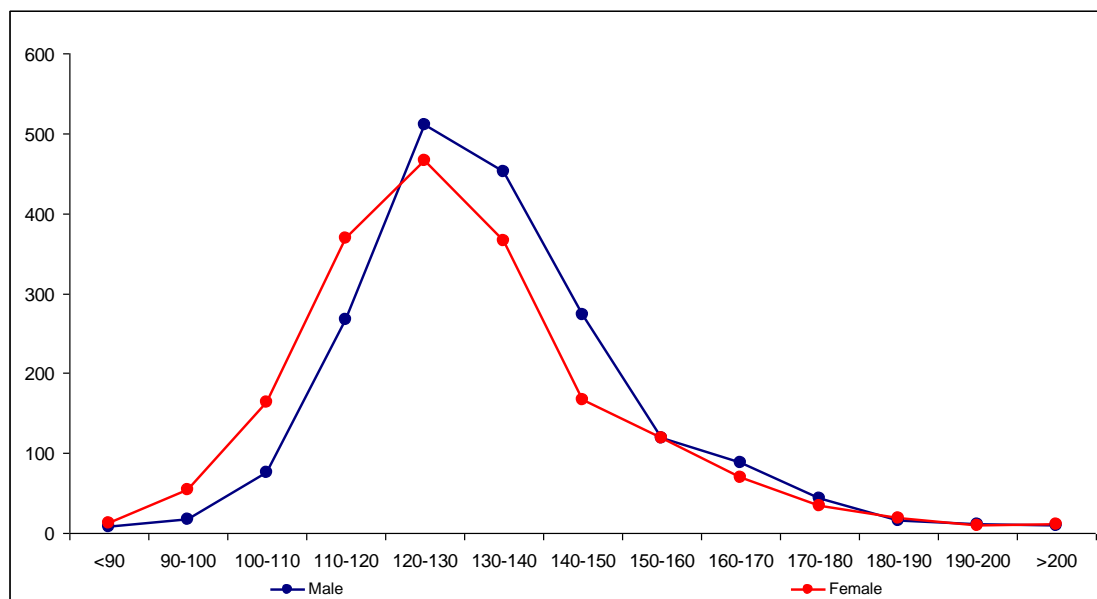
Graph 120 - *Systolic blood pressure distribution, by sex (all age groups)*

|	Female	Male	Total
Number of respondents	1857	1888	3745
Mean	130,59	134,67	132,65
Standard deviation	19,48	18,06	18,88
Standard error	0,45	0,42	0,31

Table 10 - *Average values of systolic blood pressure*

The average measured systolic blood pressure value of respondents aged 18-54 is within the reference range. The average measured systolic blood pressure among respondents aged 55 and over is slightly above the reference range.

Graph 107 - *Average values of systolic blood pressure (all three measurements) by age, mmHg*
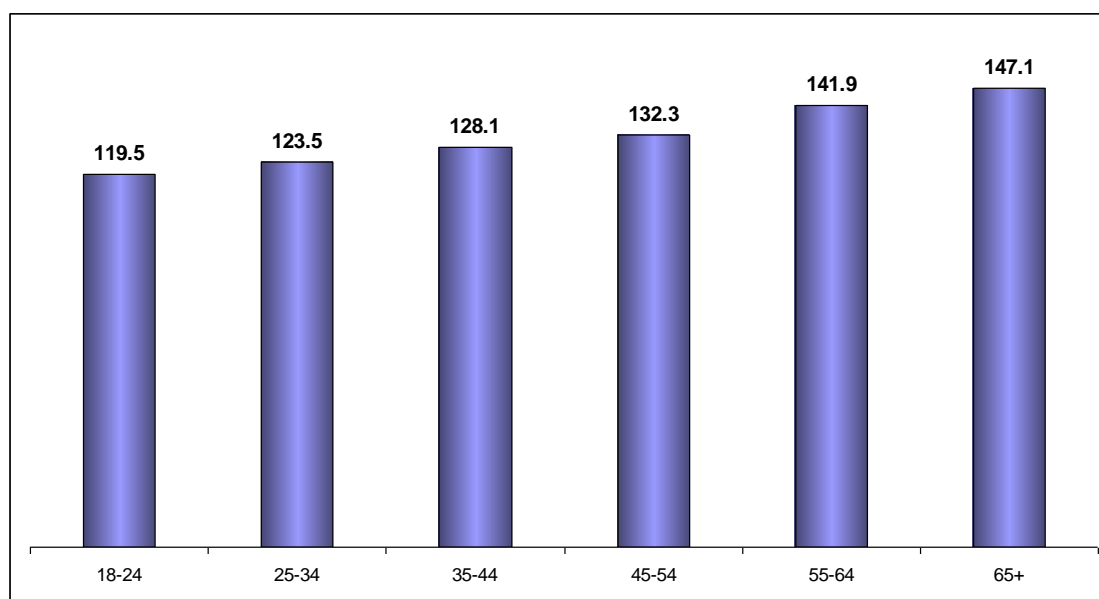
Systolic blood pressure values of over two-thirds (70,3%) of respondents are within the reference range (less than 140 mmHg).

One fifth of respondents (20%) have systolic blood pressure values in the 140 - 159 mmHg range, a significantly smaller percentage of respondents (7,4%) have systolic blood pressure in the 160 - 179 range mmHg, while values of 180 mmHg and above were measured in 2,3% of respondents .

The higher values of systolic blood pressure in the 140 - 159 mmHg and 160 - 179 mmHg ranges were more commonly measured among male than female.
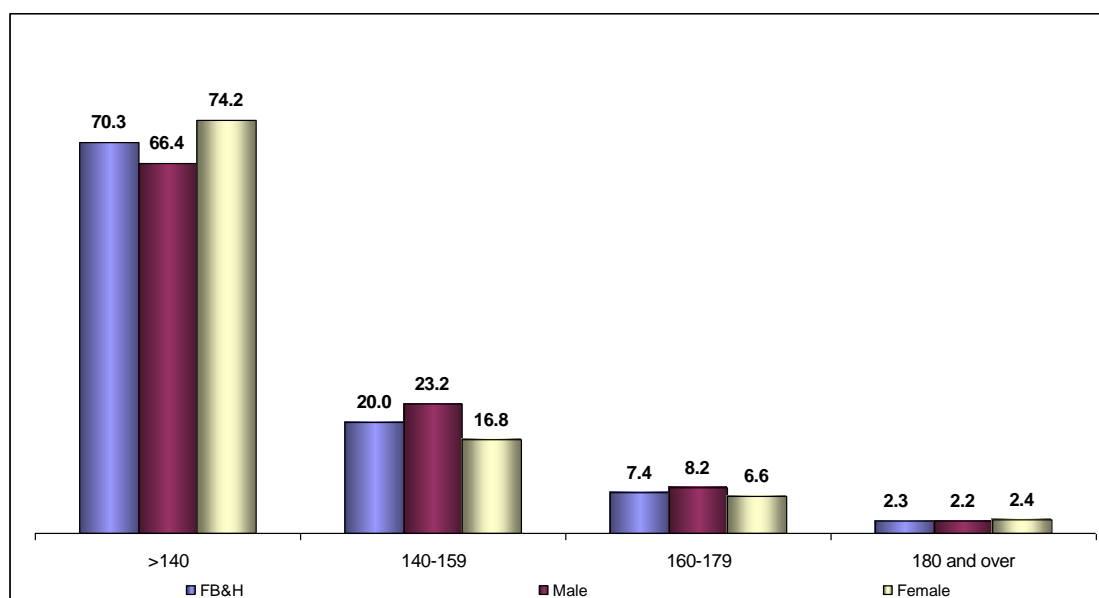
Graph 122 - *Average values of systolic blood pressure (all three measurements) by sex, mmHg, %*

4.2.4.3.3 Diastolic blood pressure values

The average diastolic blood pressure of respondents in the FB&H is 83 mmHg, and is slightly higher among male (84,4 mmHg) than female (81,5 mmHg).
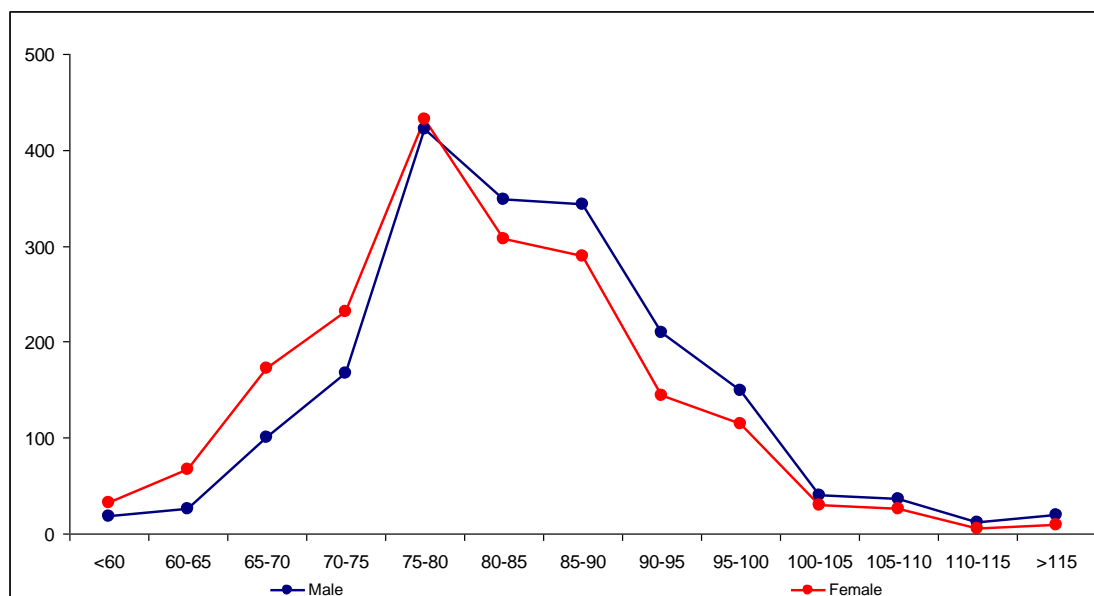
Graph 123 - *Diastolic blood pressure distribution, by sex (all age groups)*

	Female	Male	Total
Number of respondents	1857	1888	3745
Mean	81,52	84,45	83,00
Standard deviation	10,64	10,46	10,65
Standard error	0,25	0,24	0,17

Table 11 - *Average values of diastolic blood pressure*

Over a quarter of respondents in the FB&H have blood pressure values higher than 90 mmHg (26,5%).
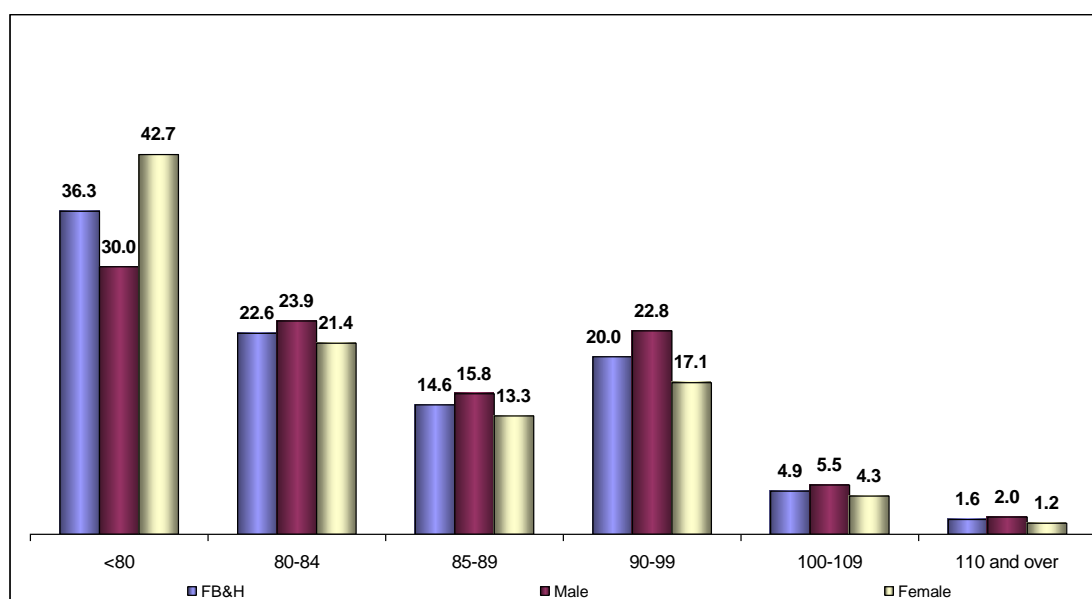
Graph 124 - *Average values of diastolic blood pressure (all three measurements) by sex, mmHg, %*

The percentage of respondents with diastolic blood pressure above 90 mmHg increases in line with age and is highest among respondents in the 65 and over age group (46,5%).
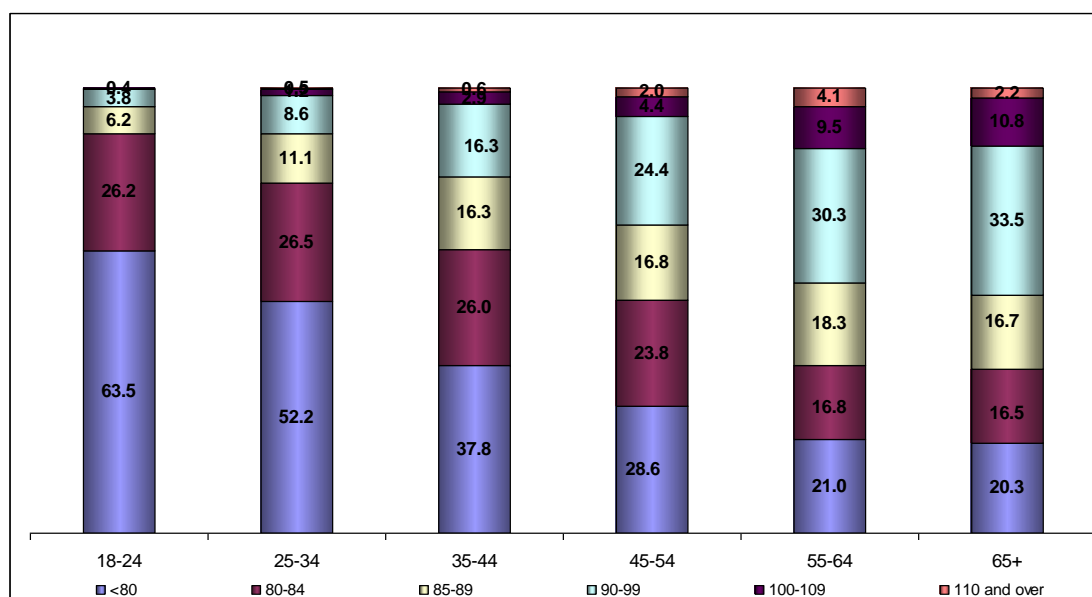
Graph 125 - *Average values of diastolic blood pressure (all three measurements) by age, mmHg, %*

The percentage of respondents in the FB&H with potential hypertension and/or undergoing anti-hypertensive treatment (systolic pressure higher than 140 mmHg and diastolic pressure higher than 90 mmHg) is 42,1%. The percentage of respondents with potential hypertension and/or undergoing an anti-hypertension treatment was the lowest (5,5%) among respondents in the 18-24 age group. The percentage of such respondents has a statistically significant increase in line with age, and is the highest (80,9%) among respondents aged 65 and over *(p=0,000)*. The percentage of male with potential hypertension and/or undergoing anti-hypertensive treatment is 45,3%. This percentage is the lowest (7,5%) among respondents in the 18-24 age

group, has a statistically significant increase in line with age, being highest (77,1%) among male respondents aged 65 and over *(p=0,000)*.

The percentage of female with potential hypertension and/or undergoing an anti-hypertensive treatment is 38,9%. This percentage is the lowest (3,4%) among respondents in the 18-24 age group, has a statistically significant increase in line with age, and is the highest (86,0%) among female respondents aged 65 and over *(p=0,000)*.
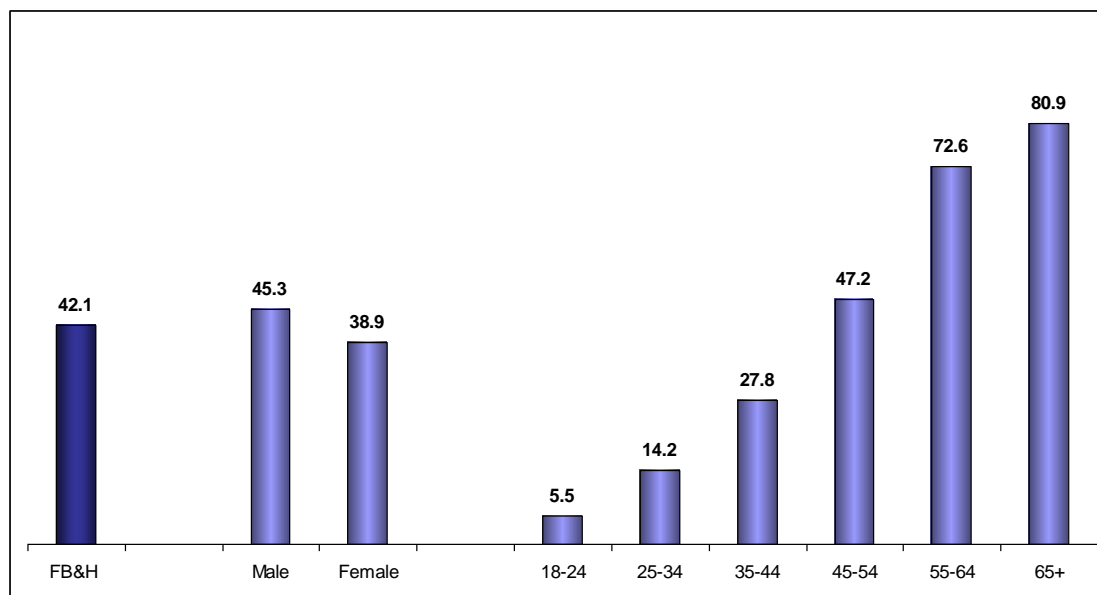
Graph 126 - *Respondents with potential hypertension and/or undergoing an anti-hypertensive treatment, by sex and age in the FB&H, %*

4.2.5 Comparison of selected indicators in FB&H for 2002 and 2012

Indicator		Respondents aged 25-64	
		2002.*	2012.**
Chronic diseases			
Respondents that have been diagnosed with a myocardial infarction at least once in their lifetime	**Total**	**2,1%**	**1,6%**
	Female	1,9%	0,9%
	Male	2,3%	2,4%
Respondents that have been diagnosed with a stroke at least once in their lifetime	**Total**	**1,7%**	**1,5%**
	Female	1,5%	1,5%
	Male	2,0%	1,5%
Respondents that have been diagnosed with diabetes at any time during their life	**Total**	**5,4%**	**5,7%**
	Female	5,8%	5,4%
	Male	4,8%	6,0%
Respondents that are currently undergoing antihypertensive therapy	**Total**	**14,7%**	**17,1%**
	Female	18,0%	18,6%
	Male	10,0%	15,5%
Respondents with a chronic disease that have had their blood pressure measured in the past 12 months	**Total**	**63,4%**	**82,0%**
Respondents with a chronic disease that have had their blood sugar measured in the past 12 months	**Total**	**41,9%**	**69,2%**
Respondents with potential hypertension (systolic pressure> 140, diastolic> 90) and/or are undergoing antihypertensive treatment	**Total**	**41,0%**	**39,8%**
	Female	44,8%	35,8%
	Male	35,5%	44,0%
Physical activity			
Respondents that are physically active for at least 30 minutes, to the extent of sweating and an increased breathing rate, 2-3 times a week	**Total**	**15,1%**	**26,5%**
	Female	12,0%	22,1%
	Male	19,6%	31.0%
Addictive diseases			
Regular smokers	**Total**	**37,6%**	**49,5%**
	Female	29,7%	37,4%
	Male	49,2%	62,1%
Regular smokers that have the desire to quit smoking	**Total**	**49,6%**	**43,1%**
Respondents exposed to second-hand smoke	**Total**	>7 hours a day 30% (including at home, at work and elsewhere)	>5 hours a day -at home: 20,8% -at work>: 5,5% -in the public: 4,8%
Respondents that have consumed any type of alcoholic beverage al least once in the past 12 months	**Total**	**29,5%**	**30,2%**
	Female	12,5%	10,0%
	Male	54,1%	51,4%

Indicator		Respondents aged 25-64	
		2002.*	2012.**
Respondents that consume any type of alcoholic beverage on a daily basis	**Total**	**5,7%**	**2,3%**
Respondents that consumed 70 or more gr of alcohol in the past week (chronic alcoholics)	**Total**	**13,3%**	**7,7%**
HEALTH CARE UTILIZATION			
Respondents that have visited a doctor of medicine in the past 12 months	**Total**	**61,6%**	**54,1%**
	Female	64,5%	60,9%
	Male	57,4%	47,1%
Most common reason for visiting a doctor of medicine in FB&H: Illness	**Total**	**30,5%**	**37,8%**
Respondents that have visited a dentist in the past 12 months	**Total**	**35,6%**	**24,9%**
	Female	35,5%	26,6%
	Male	35,8%	23,1%
MEASURED VALUES			
Respondents with BMI values <25	**Total**	**36,8%**	**37,6%**
	Female	38,2%	44,9%
	Male	34,8%	30,0%
Respondents with BMI values 25-29	**Total**	**41,0%**	**39,9%**
	Female	35,9%	31,3%
	Male	48,4%	48,9%
Respondents with BMI values >30	**Total**	**21,5%**	**22,5%**
	Female	25,0%	23,8%
	Male	16,5%	21,1%

Source:
 *Survey on risk factors of non-contagious diseases in the Federation of BiH in 2002. Institute for Publi Health FB&H.
**Surveys on the health status of the population of the Federation of BiH in 2012.*

The Survey on risk factors of non-contagious diseases in the Federation of BiH in 2002 was conducted on a sample of adult population members aged 25-64 years. For purposes of comparison, the same age group has been observed within the Survey of the Health status of the Population of the Federation of BiH 2012.

4.2.5.1 Chronic Diseases

Non-contagious diseases have a significant impact on the mortality and morbidity rates of the population, therefore keeping track of the trends of these diseases is essential for monitoring the health status of the population

In terms of the contraction of selected chronic diseases, slight differences have been registered between the survey data collected in 2012 and 2002.

1,6% of respondents were diagnosed with a myocardial infarction by a doctor in 2012($x^2=69,853; df=3; p=0,000$), which represents a slight decrease when compared to 2002 (2,1%).

In 2012, 1,5% of respondents were diagnosed with a stroke by a doctor ($x^2=4,523; df=3; p=0,000$), which again represent a slight decrease compared to 2002 (1,7%).

In 2012, 5,7% of respondents ($x^2=132,314; df=3; p=0,000$) confirmed being diagnosed with diabetes by a doctor, which is a slightly higher percentage of respondents than in 2002 (5,4%)

In 2012, there were 17,1% of respondents ($x^2=458,462; df=3; p=0,000$) taking anti-hypertensives, which is a slight increase when compared to 2002 (14.7%). This increase was more prominent in the male population (15,5%).

The percentage of respondents with a chronic disease who had their blood pressure measured in the past 12 months has significantly increased in 2012. Blood pressure was measured in 82,0%, and blood sugar in 69,2% of respondents in 2012, while in 2002 blood pressure was measured in 63,4%, and blood sugar in 41,9% of respondents.

The percentage of respondents with potential hypertension (systolic pressure > 140, diastolic > 90 mmHg and/or undergoing anti-hypertensive treatment) in 2012 was 39,8% ($x^2=525,675; df=3; p=0,000$) compared to 41,0% in 2002. In 2012 a decline of potential hypertension cases is present among female (39,8%), while the percentage of potential hypertension cases has increased among male (44,0%) when compared to 2002.

4.2.5.2 Physical Activity

There has been a significant increase in physical activity in 2012, whereby 26,5% of respondents stated that they are physically active at least 30 minutes 2-3 times a week to the extent of sweating and having an increased breathing rate ($x^2=59,875; df=6; p=0,000$) compared to 2012 in which the percentage of respondents physically active in this manner was 15,1%. When comparing 2012 to 2002, an increase in physical activity among both male (31,0%) and female (22,1%) can be observed (male: 19,6%; female: 12,0%).

4.2.5.3 Addictive Diseases

The number of regular smokers has increased significantly in 2012, in which almost a half or 49,5% of respondents reported smoking cigarettes on a daily basis ($x^2=33,159; df=6; p=0,000$) compared to 2002 when the percentage of regular smokers was comparably lower, amounting to a third or 37,6% of respondents. A significant increase of regular smokers is recorded among respondents of both genders. More males (62,1%) reported smoking cigarettes on a daily basis in 2012 than in 2002 (49,2%). This is also the case among female respondents, more of whom reported smoking cigarettes on a daily basis in 2012 (37,4%) than in 2002 (29,7%).

Two thirds or 43,1% of regular smokers in 2012 have the desire to quit smoking, while in 2002 this percentage was higher, amounting to less than half or 49,6% of respondents ($x^2=7,485; df=9; p=0,000$).

In 2012, one fifth or 20,5% of respondents said they are exposed to second hand tobacco smoke at home for 5 or more hours a day, 5,5% of respondents stated they are exposed to second hand tobacco smoke at the workplace, and 4,8% of respondents reported the same when being in the public, while in 2002 almost a third of

respondents or 30,0% reported being exposed to second hand tobacco smoke for 7 or more hours a day at home, in the workplace and in the public.

In 2012, less than a third of respondents or 30,2% stated they consumed any type of alcoholic beverage at least once during the past 12 months, with no statistically significant differences in terms of the age of respondents ($x^2=7,077; df=3; p=0,069$). In 2002 the percentage of respondents reporting this was 29,5%.

2,3% of respondents reported consuming an alcoholic beverage/s on a daily basis in 2012., which represents a decrease when compared to 2002 in which 5,7% of respondents consumed alcoholic beverages on a daily basis.

Respondents who in the past 7 days consumed 70 and more grams of spirits (estimated grams of pure alcohol) are classified as chronic alcoholics. In 2012, 7,7% of respondents reported that in the past 7 days they consumed 70 and more grams of spirits, which represents a decrease when compared to 2002, in which this percentage was 13,3%.

4.2.5.4 Health care utilization

In 2012, more than a half of the respondents (54,1%) in the FB&H visited a doctor of medicine, whereby a significantly higher number of visits were made by older respondents ($x^2=95,572; df=3; p=0,000$). The main reason for the last visit to a family doctor among more than a third of respondents (37,8%) in 2012 was an illness.

In 2002, less than two thirds of respondents (61,6%) visited a doctor of medicine in the past 12 months, while the main reason for the last visit to a doctor for almost a third of respondents was illness (30,5%).

A quarter of respondents (24,9%) visited a dentist in 2012, whereby a significantly higher number of visits were made by younger respondents ($x^2=110,986; df=3; p=0,000$). In 2002 more than a third of respondents visited a dentist (35,6%).

4.2.5.5 Body Mass Index Values

There were no major differences in the body mass index values between respondents in the 2002 and 2012 surveys.

Thus, the survey conducted in 2012 showed that over a third of respondents (37,6%) have a normal body mass index or are underweight (ITM > 25), which is almost equal to the percentage of respondents with normal body mass index values (36,8%) in 2002.

Two fifths of respondents (39,9%) in 2012 fall into the overweight category (BMI 25-29), which is close to the numbers obtained in 2002, in which the percentage of respondents in the overweight category was 41,0%.

Almost a quarter of respondents (22,5%) in 2012 fall into the obese category (BMI> 30), which is close to the percentage of respondents in the obese category in 2002, which was 21,5%.

5 CONCLUSIONS

The Health Status Survey of the Population of FB&H was conducted as a cross-sectional survey on a representative sample of 1752 households on the territory of FB&H in 2012.

The response rate of the households is 80,0%, and was higher in rural areas (81,8%), when compared to the response rate in urban areas (77,5%). Differences in response rates between different cantons have been registered. The highest response rate was in the Una – Sana Canton (88,9%), and the lowest in Canton 10 (60,6%)

The target population of the survey were adult persons aged 18 and over. 3843 individual respondents aged 18 and over took part in the study, generating a high response rate of 96,9%.

Important data related to leading diseases, health risk factors and health care utilization has been obtained through the survey. The results of anthropometric measurements and biochemical tests have enabled a more complete assessment of the health status of the population of the Federation of BiH.

The results of this survey have also enabled a comparison of selected indicators with results of the survey conducted in 2002 (25-64 age group).

Data needed for internationally recommended indicators, that can not be obtained through regular health statistics, have been obtained through this survey and represent a solid foundation for future research.

5.1 Demographic and socio-economic characteristics

50,4% of the respondents were male, while the remaining 49,6% were female.

The highest percentage of respondents in the FB&H had secondary education (59,1%), while the lowest percentages of respondents were without any (5,6%) and with tertiary education (5,6%).

Only a third of the respondents (31,8%) were employed at the time of the survey, more so respondents in urban (37,7%) than those in rural areas (27,8%). Significantly more male (41,3%) than female (22,0%) were employed. Around two fifths of respondents were retirees (22,2%) or housewives (19,3%), while students and pupils accounted for 6,4% of the respondents.

The highest percentage of the households (31,2%) had a total monthly income in the 501 – 1000 KM range, while 5,4% oh the households reported having total monthly incomes lower than 250 KM. More than half of the households in the Federation of BiH (56,8%) reported allocating 30-50% of their monthly expenses for food.

5.2 Health Status

The self-assessment of health status shows that almost three quarters (72,9%) of respondents in the Federation of BiH asses their health as very good or good, without significant differences between respondents in different settlement types of settlements or of different sexes.

Survey results also showed that more than a third of respondents (37,7%) in the Federation of BiH suffer from one or more chronic diseases.

Of the individual chronic diseases diagnosed by a doctor, the highest percentage of respondents suffered from hypertension (21,3%), followed by increased blood fats (12,8%) and rheumatic joint disease and arthritis (9,8%).

Results of blood pressure measurements show that 42,1% of respondents in the Federation of BiH have potential hypertension and/or are undergoing anti-hypertensive treatment (systolic pressure > 140, diastolic > 90 mmHg), whereby 38,9% of female and 45,3% of male had potential hypertension.

One fifth of the respondents in the Federation of BiH (21,4%) reported that they were undergoing anti-hypertensive treatment.

The percentage of respondents aged 25-64 undergoing anti-hypertensive treatment (17,1%) has increased in 2012 when compared to 2002 (14,7%).

12,8% of respondents reported being diagnosed with increased blood fats by their doctor, 13,8% of female and 11,8% of male, and a quarter (25,0%) of respondents in the 55-64 age group. Results obtained by measuring cholesterol levels in the blood showed that 44,4% of respondents had increased cholesterol levels (= or > 5,0 mmol/l), while 21,2% of respondents had increased triglyceride levels in the blood (= or > 1,7 mmol/l). The average cholesterol levels and triglyceride levels of 4,8 mmol/l and 1,3 mmol/l respectively are within normal physiological boundaries.

9,8% of respondents suffer from rheumatic joint disease, 12,1% of female, and 7,7% of male.

9,6% of respondents reported being diagnosed with diabetes by their doctor, which was the case for 9,5% of female and 9,8% of male. Results obtained by measuring blood sugar on an empty stomach showed that a third of the respondents (34,4%) had blood sugar = or > 5,6 mmol/l, a fifth (21,7%) had blood sugar = or > 6,1 mmol/l, while 9,8% of respondents had blood sugar = or > 7,0 mmol/l, which represents an equivalent of a laboratory diagnosis of diabetes. The average level of blood sugar of 5,4 mmol/l was within normal physiological boundaries.

There are no significant differences between the percentages of respondents aged 25-64 diagnosed with diabetes in 2012 (5,7%) and 2002 (5,4%).

4,4% of respondents reported being diagnosed with depression. 44,8% of respondents confirmed exposure to stress in the month preceding the survey, while 28,4% of respondents confirmed emotional problems in the same period.

4,6% of respondents reported being diagnosed with any form of liver or gallbladder disease by their doctor, while 3,3% of respondents reported being diagnosed with an ulcer in the duodenum or the stomach.

2,8% of respondents reported being diagnosed with a heart attack at least once in their lifetime, while 2,6% of respondents confirmed the same for a stroke.

Results showed that the percentages of respondents aged 25-64 that have ever been diagnosed with a stroke (1,5%) and heart attack (1,6%) has decreased in 2012 when compared to 2002 (1,7% for stroke and 2,1% for heart attack).

2,1% of respondents reported being diagnosed with asthma, while 1,5% of respondents reported being diagnosed with cancer.

The results of the survey point to a negative status of oral health in the Federation of BiH, whereby only 17,3% of respondents have all their teeth, while the average number of missing teeth is 12,3.

1,2% of respondents reported exposure to any form of physical violence in the 12 months preceding the survey, while 2,1 of respondents confirmed the same for any type of psychological violence.

5.3 Nutrition

Although almost three quarters of respondents (72,1%) consider nutrition to have a significant impact on their health, inadequate nutrition habits are still present among a significant percentage of the population and can be associated with chronic diseases among population members.

Only 8,4% of respondents always take into account the health impact of food when selecting and purchasing food for consumption, while more than half of the respondents in the Federation of BIH do not pay any attention to the fat content of milk (35%).

7,2% of respondents always add salt to their food before tasting it. Only a third of respondents (35,5%) eat fruit on a daily basis, a lower percentage eats vegetables on a daily basis (27,9%), more than half of the respondents do not consume fish (53,2%), almost half of the respondents consume fast food (47,9%), and more than a third of respondents confirm consuming potato chips and other snacks (38,1%)

5.4 Physical activity

Although more than two thirds of respondents (66,7%) consider physical activity to have a significant impact on their health, only a quarter of respondents (24,6%) fall into the category of physically active persons (physically active for at least 30 minutes 2-3 times a week, to the extent of sweating and an increased breathing rate), which is true for 28,7% of male and 20,03% of female.

The percentage of physically active respondents aged 25-64 has increased in 2012 (24,6%) when compared to 202 (15,1%).

5.5 Addictive diseases

Although more than two thirds of respondents (66,7%) consider smoking to have a significcant impact on their health, two fifths of respondents (44,1%) smoke on a daily basis, which is true for more than half of male (56,3%) and slightly less then a third of female (31,6%). Less then half of the regular smokers (41,7%) have a desire to quit smoking. Significant exposure to second-hand smoke has been registered, whereby exposure to second hand smoke at home for 5 hours or more has been reported by a quarter of respondents (19,2%) in the Federation of BiH.

The percentage of regular smokers (49,5%) aged 25-64 has increased in 2012 when compared to 2002 (37,6%), while the percentage of smokers with the desire to quit smoking has decreased in 2012 (2012: 43,1%; 2002: 49,6%;).

Even though two thirds of respondents (62,2%) consider alcohol consumption to have significant impact on their health, almost a third of respondents (28,8%) has consumed alcohol in the past 12 months, while daily consumption of alcohol has been confirmed by 11,4% of respondents. The percentage of respondents consuming 70 or more grams of spirits a week and thus falling into the category of chronic alcoholics is 7,1%.

The percentage of respondents aged 25-64 consuming any type of alcoholic beverage on a daily basis has decreases significantly in 2012 (2,3%) when compared to 2002 (5,7%).

5.6 Health care utilization

Relevant data on accessibility and utilization of health care in the public and private sectors has been obtained through this survey.

Survey results show that over half of the respondents in the Federation of BiH (55,2%) have visited a doctor of medicine in the past 12 months, which is true for more female (60,4%) than male (50,1%).

The percentage of respondents aged 25-64 that have visited a doctor of medicine in the past 12 months has decreased in 2012 (54,1%) when compared to 2002 (61,6%).

More than two thirds of respondents in the Federation of BiH have an assigned family doctor (68,9%), more so respondents in urban (72,6%) than respondents in rural areas (66,4%)

When faced with a health concern or problem, the highest percentage of respondents in the Federation of BiH first turns to their family doctor (68,4%).

Survey results pointed to differences in the territorial availability of family medicine in the Federation of BiH. Almost half of the respondents in the Federation of BIH (48,4%) live less than 1500 m away from the nearest family medicine ambulance, which is significantly more common among respondents in urban than those in rural areas. 13,2% of respondents live 5000m or further away from the nearest family medicine ambulance, which is significantly more the case among respondents in rural (20,3%) than those in urban areas (2,6%).

The average number of visits to the family doctor during the past 12 months was 2,9. The average number of visits was higher among female (3,2) then male (2,6) and was highest among respondents in the 65 and over age group.

More than a third of respondents (36,9%) indicate illness as the main reason for their last visit to a family doctor. Similar percentages of respondents indicated a check-up (22,5%) and medicine prescription (22,1%) as the main reasons for their last visit to a family doctor.

Illness was the main reason for the last visit to a family doctor for a higher percentage of respondents in 2012 (37,8%) when compared to 2002 (30,5%).

More than two thirds of respondents (79,9%) were seen on the same day when they last visited a family doctor, more so respondents in rural (84,7%) than respondents in urban areas (73,5%). 3,1% waited longer than 5 days to be seen by their family doctor.

Less than a third of female (27,7%) have visited a gynecologist, 6,1% of respondents have used ambulance services, a third of respondents (32,4%) have visited a medical specialist in the public or private sector, and 5,2% of respondents were on hospital treatment during the past 12 months.

A quarter of respondents (25,0%) have visited a dentist during the past 12 months.

The percentage of respondents aged 25-64 that have visited a dentist during the preceding 12 months has decreased in 2012 (24,9%) when compared to the survey results of 2002 (35,6%)

Survey results show that the population coverage with preventive care health services is still low. Only slightly more than half of the female respondents (51,0%) have done a test for the early detection of cervical cancer (Papanicolau test) in the past three years, more so female in urban (57,7%) than those in rural areas (46,3%), and most commonly female in the 25-34 (63,7%) and 35-44 (57,5%) age groups.

Every fifth female (20,3%) aged 50-69 had a radiographic breast scan done (mammography) during the past three years, more so female in urban (23,6%) than those in rural areas (17,8%).

1,0% of respondents in the Federation of BiH had a fecal occult blood test done.

Only 5,6% of respondents in the Federation of BiH indicated a check up or advice as the main reason for their last visit to a dentist, more so respondents in urban (8,4%) than respondents in rural areas (3,7%), and most so respondents in the 18-24 age group (12,9%).

Less than a quarter of respondents (22,9%) confirmed being vaccinated against the flu in the past 12 months, which is mostly true for respondents in the 65 and over age group (38,0%)

More than a quarter of respondents were very satisfied or satisfied with the services provided by a doctor of medicine in the public health care sector, of which the highest percentage of respondents was satisfied with the services provided by a family doctor (89,4%). A higher percentage of respondents was satisfied with the services provided by a medical specialist in the private (91,4%), than with one in the public sector (87,0%)

Respondents who used dental health care services have also been satisfied in higher percentages with the services provided in the private (93,5%) than with the services in the public sector (79,2%).

5.7 Body mass index (BMI) values

Body weight and height were measured in 97,8% of respondents in the FB&H

BMI values show that more than half of the respondents have excess body weight. More than a third of respondents (37,5%) fall into the overweight category, more so male (45,7%) than female (29,6%), while a fifth of respondents fall into the obese category (21,2%), which is true for 23,3% of female and 19,1% of male. Two fifths of respondents fall into the normal weight category (39,7%), more so female (44,7%) than male (34,9%). 1,6% of respondents fall into the underweight category, 2,5% of female and 0,8% of male.

There are no significant differences between the Body Mass Index values of respondents aged 25-64 in the 2012 and 2002 surveys. Two fifths of respondents in the 2012 survey (39,9%) fall into the overweight category. The percentage of such respondents was 41,1% in 2002. 37,6% of respondents in 2012 and 36,8% in 2002 had a Body Mass Index within normal boundary lines. The percentage of overweight respondents increased slightly in 2012 (22,5%) when compared to the data from 2002 (21,5%).

6 RECOMMENDATIONS

The results of this survey point to priorities and activities necessary for the advancement of the health of the population of the Federation of BiH.

It is necessary to increase the availability of preventive care and promotional health care services through the implementation of the existing strategic commitments:

- Risk factor monitoring in family medicine teams needs to be strengthened (anthropometric measurements, blood fat and sugar elves, blood pressure control, addictive diseases)

- The scope of advising done by health workers needs to be increased (health impact of nutrition, promotion of physical activity prevention of obesity, prevention of addictive diseases, prevention of heart and blood vessel diseases, mental health and oral health)

- Addictive disease rehabilitation services have to become more prominent in the public sphere (with a focus on family medicine teams and mental health centers)

- Physical and regular check up and risk group immunization coverage has to be increased

- Risk group screening coverage has to be increased: early detection of breast, cervical and colon cancer.

- Stimulative mechanisms for providing preventive care and promotional services have to be enabled (financing, education, resource organization)

The active participation of all the relevant sectors in the promotion of a healthy lifestyle is very important:

- Education and information activities have to be carried out with the aim of changing habits (proper nutrition, physical activity, addictive disease prevention, mental health)

- Inter-sector programs have to be implemented(healthy schools, healthy workplaces, healthy communities)

- Thematic campaigns of health promotion in the community have to be organized

7   SURVEY PARTICIPANTS AND CONTRIBUTORS

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8 ANNEX

Questionnaire code: |__|__|/|__|__|__|/|__|__|__|__|__|

Good morning/ day/ evening, my name is _____. We are coming on behalf of the Institute for Public Health of the FBIH, which is conducting a survey of the health status of the population of FBiH. We would be very grateful if you could take part in our survey. All the information received will be strictly confidential, and its source will never be revealed.

HOUSEHOLD QUESTIONNAIRE

DM SECTION – GENERAL INFORMATION ON THE HOUSEHOLD	
DM 1. Canton code |__|__|__|	**DM2. Urban** 1 **Other** 2
DM3. Enumeration district number in sample: |__|__|	**DM4. Household code (from sample):** |__|__|__|__|
DM5. Surveyor code: |__|__|	**DM6. Controller code:** |__|__|
DM7. Day / month / year of surveying:	|__|__| / |__|__| / 2 0 |__|__|
DM8. Household address: _____	**DM9. Phone number:** _____ [ANK] Be sure to enter the phone number of the household
ANK] To be filled after completing the questionnaire: **DM10. Results of the Household questionnaire:** The Household questionnaire has been filled out completely 1 No one was present at home .... 2 Participation was refused .... 3 Household not found 4 Other (state) ...._____ 5	**DM11. Name of main respondent:** Name: _____ [ANK] Be sure to enter the name of the main respondent **DM12. Total number of household members:** |__|__|
DM13. Number of adult persons – aged 18 and over: |__|__|__|	**DM14. Number of filled questionnaires for persons aged 18+** |__|__|__|
Notes ANK] Write down notes related to surveying household members, such as incomplete individual forms, number of repeated visit attempts and similar.	

DM15. Data entry agent code:		

SD SECTION – HOUSEHOLD MEMBERS LIST

Household members ordinal number	SD1. Name	SD2. Sex:		SD3. Date of birth:	SD4. Surveying results
		Female	Male	Day/Month/Year	1. Consented 2. Refused 3.Person not found
01		1	2	/ /	
02		1	2	/ /	
03		1	2	/ /	
04		1	2	/ /	
05		1	2	/ /	
06		1	2	/ /	
07		1	2	/ /	
08		1	2	/ /	
09		1	2	/ /	
Total					

CD SECTION – HOUSEHOLD CHARACTERISTICS

CD1	**What type of building do you live in?** [ANK) One answer	1. A private House 2. An apartment in a house 3. A residential building 4. Other, (state)_____
CD2	**How many rooms does your house/ apartment have?** [ANK] Count in all rooms including the living room.	_____ rooms
CD2A	**How many rooms in your house/ apartment are used for sleeping?** [ANK] All rooms and the kitchen can be taken into account	_____ sleeping quarters
CD3	**What type of energy source do you <u>most often</u> use for heating in your house/apartment** [ANK] One answer	1. Electrical energy 2. Gas 3. Wood 4. Coal 5. Heating oil/ oil fuel/ crude oil 6. Other, (state)_____

CD4	**Are you satisfied with your housing conditions?** *[ANK]* *One answer*	1. Very satisfied 2. satisfied 3. Neither satisfied nor unsatisfied 4. Unsatisfied 5. Very unsatisfied

	VO SECTION – FRESH WATER SUPPLY AND WASTE REMOVAL	
VO1	**Do you have a fresh water source/ water connection in you house/ apartment**	1. Yes ———————— VO3 2. No
VO2	**How far away is the fresh water source from your household?** *[ANK]* *One answer*	1. In the yard 2. Less than 100 m 3. From 100 to 199 m 4. From 200 to 499 m 5. From 500 m to 1 km 6. More than 1 km 7. Do not know
V03	**What is the <u>main</u> source of fresh water for the members of your household?** *[ANK]* *One answer*	1. City waterworks 2. Rural (local) waterworks 3. Public fountain 4. Drilled well 5. Covered dug well or enclosed source 6. Uncovered dug well or unenclosed water source 7. Lake, river, stream 8. Rainwater 9. Cistern 10. Other (state) _____ 11. Bottled water
VO3A	**What is the <u>main</u> source of water your household uses for other needs, such as cooking or washing hands?** *[ANK]* *One answer*	1. City waterworks 2. Rural (local) waterworks 3. Public fountain 4. Drilled well 5. Covered dug well or enclosed source 6. Uncovered dug well or unenclosed water source 7. Lake, river, stream 8. Rainwater 9. Cistern 10. Other (state) _____ 11. Bottled water
VO4	**Do you experience interruptions in the water supply?** *[ANK]* *One answer*	1. No 2. Yes, occasionally (at least once a month throughout the year) 3. Yes, every day 4. Yes, during summer
VO5	**What type of toilet is used by your household?** *[ANK]* *One answer*	1. Flushing toilet with a connection to the sewage 2. Flushing toilet with a connection to a septic tank 3. Non-flushing toilet with a watertight tank 4. Non-flushing toilet with a watertight tank (field toilet) 5. The household does not have a toilet

VO6	How do you remove solid waste (trash) from your household? *[ANK] One answer*	1 . By disposing of it on a location reserved for the purposes in your area 2.By disposing of it on illegal dumping sites 3. By burning it 4. By burying it 5. By placing it on a pile near your house 6. By throwing it in the river 7. By disposing of it directly to the environment 8. Other, (state)

SE SECTION – SOCIO – ECONOMIC STATUS OF THE HOUSEHOLD		

SE1	How many sources of income does your household have (salary, pension, sale of agricultural goods)?	1. Number _____ 2. Refused to answer
SE2	What is the <u>main</u> source of income for your household? *[ANK] One answer*	1. Civil service salary 2. Salary from employment in privately owned company 3. Pension 4. Self-employment 5. Agriculture 6. Real-estate renting 7. Social welfare 8. No income 9. Other, (state) 10. Refused to answer

SE3	How do you procure food for your household *ANSWER FOR EVERY option offered*		No	Yes
		1. Through purchase	1	2
		2. Though own production	1	2
		3. By receiving help from family/ friends / neighbors	1	2
		4. From meal centers	1	2
		5. Other (state) _____	1	2

SE4	Estimate your household's expenditures on food during the past month (as a percentage of income): *[ANK] One answer.*	1. Less than 30% 2. From 30 to 50% 3. From 51 to 70% 4. Over 70% 5. Do not know

SE5	Has the income of your household been sufficient for covering the following expenses during the past month: *PROVIDE AN ANSWER FOR EVERY option given* *[ANK] Number 3 can be encircled only for options 6, 7 and 8.*		No	Yes	Not used
		1. Food	1	2	
		2. Personal hygiene	1	2	
		3. Household hygiene	1	2	
		4. Clothing and footwear	1	2	
		5. Utility bills	1	2	
		6. Health care (check-ups, medication)	1	2	3
		7. Recreation	1	2	3
		8. Outings (theater, cinema, cafes…)	1	2	3
		9. Other (state)	1	2	3

SE6	How do you asses the material status of your household? *[ANK] One answer*	1. Very bad 2. Bad 3. Average 4. Good 5. Very good 6. Do not know

SE7	What is the total monthly income of your household (all household members and all income sources)? *[ANK] One answer*	1. up to 150 KM 2. from 151to 250 KM 3. from 251to 500 KM 4. from 501 to 1000 KM 5. from 1001 to 2500 KM 6. from 2501 to 5000KM 7. over 5000 KM 8. Refused to answer

SUPERVISOR CODE: __ __   CONTROLLER CODE: __ __

Annex II

Questionnaire code: |__|__|/|__|__|__|/|__|__|__|__|__|/|__|

This conversation will take approximately 45 minutes. All the information received will be treated as strictly confidential and its source will not be revealed.

QUESTIONNAIRE FOR ADULT PERSONS AGED 18 AND OVER

DM SECTION– GENERAL INFORMATION
Fill out a separate questionnaire for each member of the household aged 18 and over, living in the household.

DM1. Enumeration district number in sample: ⬚⬚⬚	**DM2. Household code:** ⬚⬚⬚⬚⬚
DM3. Name of household member: _____	**DM4. Ordinal number of household:** ⬚
DM5. Sex: 1. Female 2. Male ⬚	**DM6. Day / month / year of birth:** ⬚⬚ / ⬚⬚ / ⬚⬚⬚⬚
DM7. **Surveyor code:** ⬚⬚⬚	**DM8. Day / month / year of surveying:** ⬚⬚ / ⬚⬚ / 2 0 ⬚⬚
DM9. Results of the questionnaire for persons aged 18 and over	1. The questionnaire has been filled out completely 2. The questionnaire has been filled out partially 3. Participation was refused 4. The respondent is not able to answer the questions 5. Other, state:

DK SECTION – DEMOGRAPHIC CHARACTERISTICS AND SOCIO-ECONOMIC STATUS		
DK1	**Which is the highest level of education you have attained so for?** *[ANK]* Encircle one answer	1. No education 2. Elementary school 3. High school (3 or 4 years) 4. Post-secondary education 5. University education
DK2	**What is your marital status?**	1. Married 2. Cohabitation 3. Single 4. Divorced 5. Widowed
DK3	**What is your employment status?** *[ANK]* One answer	1. Employed 2. Retired 3. Housewife 4. Student, pupil 5. Unemployed 6. Unable to work

PZ SECTION – HEALTH ASSESSMENT AND LIFE SATISFACTION		
PZ1	**How would you asses your health in general?** *[ANK]* One answer	A Very bad B Bad C Neither good nor bad D Good E Very good
PZ2	**How satisfied are you with your current life?** *[ANK]* Encircle one answer	1. Very bad 2. Bad 3. Neither good nor bad 4. Good 5. Very good

RZ SECTION – HEALTH RELATED RISKS

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RZ1	Do you believe that there are risks from the following in your place of residence: *PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS*			
		No	**Yes**	**Do not know**
	1. Noise	1	2	3
	2. Air pollution	1	2	3
	3. Water pollution	1	2	3
	4. Waste materials	1	2	3
	5. Radioactive radiation	1	2	3
	6. Ultra-violet (UV) / sun radiation	1	2	3
	7. Violence, criminal	1	2	3
	8. Other, state: _____	1	2	3

RZ2	Do you feel that your habits/behavior increase your risk of contracting the following diseases? *PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS*				
		No	**Yes**	**Already contracted**	**Do not know**
	1. Obesity	1	2	3	4
	2. High blood pressure	1	2	3	4
	3. Diabetes	1	2	3	4
	4. Hear and blood vessel diseases (heart attack, stroke, angina pectoris)	1	2	3	4
	5. Lung diseases (chronic bronchitis)	1	2	3	4
	6. Cancer	1	2	3	4
	7. Liver cirrhosis	1	2	3	4
	8. Sexually transmitted diseases, (AIDS)	1	2	3	4
	9. Diseases as consequences of an injury	1	2	3	4
	10. Other, state: _____	1	2	3	4

[ANK] PROVIDE ANSWERS TO ALL OPTIONS	RZ3 **Have you ever or are you currently suffering from any of the following diseases or conditions?** *[ANK]* *Those that answer "No" to all the questions continue from question RZ6*		RZ4 **Has this been diagnosed by a doctor?** *[ANK]* *This question is for Yes answers from RZ3*		RZ5 **Have you suffered from this disease or condition in the past 12 months?** *[ANK]* *This question is for Yes answers from RZ3*	
	No	**Yes**	**No**	**Yes**	**No**	**Yes**
1. Asthma	1	2	1	2	1	2
2. Hear attach (myocardial infraction)	1	2	1	2	1	2
3. Stroke or cerebral hemorrhage	1	2	1	2	1	2
4. Cancer	1	2	1	2	1	2
5. High blood lipids	1	2	1	2	1	2
6. Depression	1	2	1	2	1	2
7. Duodenum, stomach ulcer	1	2	1	2	1	2
8. Liver and gallbladder diseases	1	2	1	2	1	2

	9. Rheumatic joint disease and arthrosis	1	2	1	2	1	2

RZ6	When was the last time your blood pressure was measured by a health care professional?	1. In the past 12 months 2. 1 – 5 years ago → RZ8 3. More than 5 years ago → RZ8 4. Never → RZ10
RZ7	Have you been informed by a health care professional in the past 12 months that you have high blood pressure, hypertension?	1. Yes 2. No 3. Not sure
RZ8	Do you currently take medication intended for blood pressure lowering?	1. Yes 2. No 3. Not sure
RZ9	Has a doctor in the past 12 months suggested you to change your lifestyle in order to reduce your blood pressure?	1. Yes 2. No 3. Not sure
RZ10	When is the last time that you had your blood sugar measured?	1. In the past 12 months 2. 1 – 5 years ago 3. More than 5 years ago 4. Never → RZ15
RZ11	Has a doctor ever informed you that you have diabetes?	1. Yes 2. No → RZ15 3. Not sure → RZ15
RZ12	When have you been diagnosed with diabetes?	1. In the past 12 months 2. 1 – 5 years ago 3. More than 5 years ago
RZ13	What type of treatment for increased blood sugar has been prescribed to you by your doctor (multiple answers possible)	1. Nutrition advice 2. Pills for lowering blood sugar 3. Insulin 4. Nothing

RZ14	Did you undergo an eye fundus examination because of diabetes in the past 12 months	No	Yes	Do not know	

RZ15	Did you experience any of the following symptoms during the past 4 weeks? [ANK] Read symptoms one by one to the respondent. PROVIDE ANSWERS TO ALL THE GIVEN OPTIONS.		No	Yes
		1. Chest pains when straining	1	2
		2. Joint pains and movement difficulties	1	2
		3. Back paints	1	2
		4. Neck/ shoulder pains	1	2
		5. Varicose veins	1	2
		6. Changes on the skin	1	2
		7. Headache	1	2
		8. Sleeplessness	1	2
		9. Despondency	1	2
		10. Unconsciousness	1	2
		11. Frequent urination	1	2
		12. Bloody stool	1	2

RZ16	How many of your teeth are missing? [ANK] One answer	1. I am missing: _____ teeth(tooth) 2. I have all my teeth (28 teeth) → RZ18
RZ17	Do you have a denture? ANK] One answer	1. Yes, I have a full denture 2. Yes, I have a partial denture 3. I don't have a denture
RZ18	Have you, and if yes, how many days have you been absent from work because of health related problems in the past 12 months?	1. Yes, _____days 2. No 3. Unemployed

RZ19	According to your opinion, how much of an impact on health does each of the following have: PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS				
		Major	Moderate	Small	Don't know/ No opinion

	1. Nutrition	1	2	3	4
	2. Physical activity	1	2	3	4
	3. Smoking	1	2	3	4
	4. Alcohol consumption	1	2	3	4
	5. Social activity (spending time with friends, outings, excursions...)	1	2	3	4

	In the past 12 months, have you: *PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS*			
		No	Yes	Was not necessary
	F Reduced your fat intake	1	2	3
	G Changed the type of fats in your nutrition	1	2	3
	H Reduced your salt intake	1	2	3
	I Reduced your sugar intake	1	2	3
RZ20	J Increased the consumption of fruit and vegetables	1	2	3
	K Lost weight	1	2	3
	L Increased your physical activity	1	2	3
	M Quit smoking	1	2	3
	N Reduced alcohol consumption	1	2	3
	O Increased the intake of vitamins and minerals	1	2	3

RZ21	**If you have changed your behavior in the past 12 months, what was the main reason for doing so?** *ANK]* One answer	1. Health (because of a disease/illness) 2. Looks 3. Healthier lifestyle 4. I have not changed my behavior 5. Other, state: _____

HR SECTION – NUTRITION				
HR1	**How many times a week do you:** *PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS*			
		Never	Occasionally	Every day
	1. Have breakfast	1	2	3
	2. Have a snack in the morning	1	2	3
	3. Have lunch	1	2	3
	4. Have a snack in the afternoon	1	2	3
	5. Have dinner	1	2	3

HR2	**Do you consume milk and milk-based products (yoghurt, kefir etc.)?** *[ANK]* One answer	1. Occasionally 2. One glass each day 3. 2 or more glasses each day 4. Never ⟶ **HR4**
HR3	**What is the fat content of the milk you usually drink?** *[ANK]* One answer	1. I don't pay attention to the fat content of milk 2. Less than 1% 3. From 1 to 3,2% 4. More than 3,2%

	How often do you: *PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS*						
		Never	Less than once a week	1 to 3 times a week	4 to 6 times a week	Once a day	Two or more times each day
HR4	1. Eat fruit (except juice)	1	2	3	4	5	6
	2. Eat vegetables (except juice and potatoes)	1	2	3	4	5	6
	3. Drink fruit and vegetable juices	1	2	3	4	5	6

HR5	How often have you eaten or drank each of the following during the past week: *PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS*				
		Not once	**1 to 2 times**	**3 to 5 times**	**6 to 7 times**
	1. Cooked potatoes	1	2	3	4
	2. Fried potatoes	1	2	3	4
	3. Rice/ pasta	1	2	3	4
	4. Cereals (boiled wheat, bran, oat, corn and other flakes, cornmeal / polenta)	1	2	3	4
	5. Cheese	1	2	3	4
	6. Fish	1	2	3	4
	7. Chicken and other poultry meats	1	2	3	4
	8. Meat (beef, veal, pork, lamb)	1	2	3	4
	9. Meat based products	1	2	3	4
	10. Eggs	1	2	3	4
	11. Beans, peas, lentils and corn	1	2	3	4
	12. Fresh vegetables, salads (excluding potatoes and juices)	1	2	3	4
	13.Other vegetables (vegetable meals, frozen, preserved)	1	2	3	4
	14.Fresh fruit (excluding juices)	1	2	3	4
	15. Frozen or preserved fruit	1	2	3	4
	16. Nuts (walnuts, hazelnuts, almonds etc.)	1	2	3	4
	17. Dried fruit	1	2	3	4
	18. Cakes, biscuits	1	2	3	4
	19. Sweets (candy, chocolates)	1	2	3	4
	20. Vegetable or fruit juice	1	2	3	4
	21. Sweet non-alcoholic beverages (carbonated/ non-carbonated juices, hot chocolate)	1	2	3	4
	22. Potato chips and other snacks	1	2	3	4
	23. Food purchased from a bakery (pastries, muffins, meat pies, pizza etc.) or a fast-food stand/ restaurant	1	2	3	4
HR6	**What type of bread do you <u>MOST OFTEN</u> use in your diet and how many loaves do you eat per day?** *[ANK] One answer*	1. White bread /__/__/ loaves per day 2. Semi-white bread /__/__/ loaves per day 3. Black bread /__/__/ loaves per day 4. Other types of bread (wheat bread) /__/__/ loaves per day 5. I do not eat bread ⟶ **HR8**			

HR7	**What type of fatty bread spreads do you MOST OFTEN use?** *[ANK] One answer*	1. Low-calorie margarine 2. Margarine 3. Butter 4. Mayonnaise 5. Lard 6. Sour cream 7. Cream cheese/ cream 8. Pate 9. I do not use any type of bread spread
HR8	**What type of fats do you MOST OFTEN use when preparing meals in your household?** *[ANK] One answer*	1. Oil 2. Vegetable fats, margarine 3. Animal fats (butter, lard) 4. I do not use fats 5. I do not know
HR9	**Do you ever add salt to the food you eat?** *[ANK] One answer*	1. Never 2. When it is not salty enough 3. Almost always, even before tasting the food
HR10	**Do you think about your health when choosing food?** *[ANK] One answer*	1. Never 2. Sometimes 3. Often 4. Always

FA SECTION – PHYSICAL ACTIVITIES

*Think about activities that require **great physical effort**, and which you have performed in the past seven days. **Strenuous physical activities** are those during which normal breathing is made more difficult, and include heavy lifting, digging, aerobics or fast cycling. Take into account only those physical activities that lasted continuously for at least 10 minutes.*

FA1	**FA1a. During how many days have you performed strenuous physical activities in the past seven days?** *[ANK] If the answer is "None", write down 0 days.*	1. Enter the number of days: _____ *If the answer is "0" days* ⟶ **FA2** 2. Don't know
	FA1b. How much time have you spent performing strenuous physical activity during a single day?	1. Enter the number of hours _____ and _____minutes

*Think about activities that require **moderate physical effort**, and which you have performed in the past seven days. **Moderate level physical activities** are those during which your breathing rate increases slightly, and include lifting of lighter weights, cycling at moderate speeds, etc. Do not take walking into account. Take into account only those physical activities that lasted continuously for at least 10 minutes.*

FA2	**FA2a. During how many days have you performed moderate level physical activities in the past seven days?** *[ANK] If the answer is "None", write down 0 days.*	1. Enter the number of days: _____ **If the answer is "0" days** **FA3** 2. Don't know
	FA2b. How much time have you spent performing moderate level physical activity during a single day?	1. Enter the number of hours _____ and _____minutes

*Now think about how much time you have spent **walking** during the past seven days. This includes walking to and from work, walking from one place to another, as well as walking for purposes of recreation, sports, exercise and leisure.*

FA3	**FA3a. During how many days have you walked continuously for 10 minutes in the past seven days?** *[ANK] If the answer is "No days", write down 0 days.*	1. Enter the number of days: _____ 2. Don't know
	FA3b. How much time during a single day have you usually spent walking?	1. Enter the number of hours _____ and _____minutes

FA4	**How often do you perform physical activities in your free time for at least 30 minutes to the extent of having at least a slightly increased breathing rate or sweating?** *[ANK] One answer. If the respondent is elderly and answers that they are too old to exercise encircle number 7.*	1. Every day 2. 4 – 6 times a week 3. 2 – 3 times a week 4. Once a week 5. 2 – 3 times a month 6. Several times a year 7. Never 8. I can not exercise because of an illness or disability
FA5	*ANK] **Only employed and persons independently carrying out a type of work (includes farmers)** answer this question* **How physically demanding is the work you do?**	1. I spend most of the time at work sitting. 2. My work is physically undemanding (I sometimes walk during my work time) 3. My work requires a moderate level of physical straining 4. My work is physically very demanding (carrying of heavy loads, other work that requires physical straining)

PU SECTION – SMOKING		

PU1	**How many hours per day during the past month have you been exposed to secondhand smoke:**
	
	1. In your home 1. No 2. Yes If yes, for how long: 1. More than 5 h
	                                                                                      2. 1- 5 h
	                                                                                      3. Less than 1 h
	
	2. At work (enclosed spaces) 1. No 2. Yes If yes, for how long: 1. More than 5 h
	                                                                                      2. 1- 5 h
	                                                                                      3. Less than 1 h
	
	3. In the public (enclosed spaces) 1. No 2. Yes If yes, for how long: 1. More than 5 h
	                                                                                      2. 1- 5 h
	                                                                                      3. Less than 1 h		

PU2	**Have you ever smoked?**	1. No, *continue from next module* 2. Yes
PU3	**Have you smoked at least 100 cigarettes, cigars, pipes, etc. in your lifetime?**	1. No 2. Yes 3. Not sure
PU4	**Have you ever smoked on a daily basis (every day during at least one year), if yes, how many years in total?**	1. Yes, a total of _____ years 2. No
PU5	**Do you smoke presently?**	1. No, **continue from next module** 2. Yes, occasionally 3. Yes, on a daily basis during the past month
PU6	**How much do you smoke on average during one day (looking back at the past month)?** *[ANK] Provide an answer to each of the given options. If any of the provided isn't smoked by the respondent enter zero!*	1. Factory produced cigarettes _____ daily 2. Rolled cigarettes _____ daily 3. Pipes _____ daily 4. Cigars _____ daily 5. Cigarillos _____ daily
PU7	**Do you wish to quit smoking?**	1. No 2. Yes 3. Not sure 4. I already quit

UA SECTION – ALCOHOL CONSUMPTION

UA1	Have you consumed any type of alcoholic beverage in the past 12 months (beer, wine, brandy)?	1. No, *continue from next module* 2. Yes		
UA2	How often have you consumed alcoholic beverages during the past 12 months?	P Daily Q Several times a week R Once a week S Several times a month T Several times during the whole year		
UA3	How many glasses of the following alcoholic beverages have you consumed during the past week? *[ANK] IF the respondent didn't consume any amount of the beverage in question enter zeroes into the boxes*	1. Glasses of beer - 2,5 dl 2. Cannes/ bottles of beer – 3,3 dl 3. Glasses of wine - 1,5 dl 4. Shot glasses of spirits - 0,3 dl 5. Glasses of liqueur - 0,3 dl 6. Glasses of cocktails –2,5 dl		

PS SECTION – USAGE OF PSYCHOACTIVE SUBSTANCES

	HAVE YOU EVER USED DRUGS OR ANY OTHER NARCOTICS?	1. Yes 2. No, *continue from next module*			
PS 1	WHEN DID YOU LAST TIME CONSUME EACH OF THE FOLLOWING NARCOTIC SUBSTANCES? *Encircle only one answer for each of the given substances.*	**Never**	**During the past 12 months**	**More than 12 months ago**	**Don't know / Don't remember**
	1. CANNABIS (MARIJUANA AND / OR HASHISH)	**1**	**2**	**3**	**4**
	2. ECSTASY	**1**	**2**	**3**	**4**
	3. AMPHETAMINES AND/OR METHAMPHETAMINES, ALSO KNOWS AS „SPEED".	**1**	**2**	**3**	**4**
	4. COCAINE AND/OR CRACK	**1**	**2**	**3**	**4**
	5. HEROIN	**1**	**2**	**3**	**4**
	6. LSD	**1**	**2**	**3**	**4**
	7. HALLUCINOGENIC (MAGICAL) MUSHROOMS	**1**	**2**	**3**	**4**
	8. INHALANTS (VOLATILE MATTER), SUCH AS DEODORANT SPRAY, GLUE, LIGHTER GAS / PETROL, AIR FRESHENERS IN SPRAY FORM AND OTHER INDUSTRIAL PRODUCTS THAT ARE INTENTIONALLY INHALED	**1**	**2**	**3**	**4**
PS2	*[ANK]* This question is only for respondents who confirmed consuming any of the above mentioned substances. ***Have you tried or consumed any of the following during the past 12 months***	***1. No***	**2. Yes**		
			I tried it 1 or 2 times	**I use it occasionally**	**I use it everyday**
	U Glue	*1*	2	3	4
	V Pills (bensedine, trodon, amphetamine etc.)	*1*	2	3	4
	W Marihuana	*1*	2	3	4

X	Hashish	1	2	3	4
Y	Ecstasy	1	2	3	4
Z	Cocaine	1	2	3	4
AA	Heroin	1	2	3	4

ZE SECTION – FEMALE HEALTH

Only females answer the following questions

Males continue from the next section (module)

ZE1	**When was the last time you visited a gynecologist?** *[ANK] One answer. If the answer is 1, enter the number of times as well.*	1. During the past 12 months_____ times 2. More than a year ago 3. I have never visited ⟶ **ZE6**
ZE2	**What is the most common reason for your visits to a gynecologist?** *[ANK] One answer*	1. Health check-up (also when without discomforts/ problems) 2. Illness 3. Pregnancy 4. Contraception 5. Abortion 6. Sterility *7. Other, state: _____*
ZE3	**How often do you make preventive visits to a gynecologist?** *[ANK] One answer*	1. Once a year 2. Once every 2 years 3. Rarely 4. I don't go to check-ups
ZE4	**When was the last time you had a cervical smear done (Pap test)?** *[ANK] One answer*	1. During the past 12 months 2. More than 1, less than 2 years ago 3. More than 2 less than 3 years ago 4. More than 3 years ago 5. Don't remember 6. Never 7. I don't know what kind of test that is ⟶ **ZE6**
ZE5	**Did you have the Pap smear done:** *[ANK] One answer*	1. On your own initiative 2. On the advice of your doctor 3. On the advice of your doctor as part of an organized effort for early detection of cervical cancer
ZE6	**When was the last time you underwent a palpatory examination of the breasts (examination with touching/fingers)?** *[ANK] One answer*	1. During the past 12 months 2. More than 1, less than 2 years ago 3. More than 2 less than 3 years ago 4. More than 3 years ago 5. Don't remember 6. Never
ZE7	**Have you been advised by doctor on how to conduct a breast self-examination?**	1. No 2. Yes
ZE8	**When was the last time you underwent a radiographic scanning of the breasts (mammography)?** *[ANK] One answer*	1. During the past 12 months 2. More than 1, less than 2 years ago 3. More than 2 less than 3 years ago 4. More than 3 years ago 5. Don't remember 6. Never 7. I don't know what kind of test that is **Go to next module**
ZE9	**Did you undergo a mammography examination:** *[ANK] One answer*	1. On your own initiative 2. On the advice of your doctor 3. On the advice of your doctor as part of an organized effort for early detection of breast cancer

SP SECTION – SEXUAL BEHAVIOR – ASK PERSONS AGED 18-65

	Only persons having sexual intercourse reply to these questions. *Others continue from the next section (module)*			
SP1	**Do you and your partner use any of the following contraceptive agents or methods for the prevention of unwanted pregnancy during sexual intercourse?** *PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS*			
		Ne	**Yes, occasionally**	**Yes, continuously**
	1. Pills	1	2	3
	2. Intrauterine devices	1	2	3
	3. Local chemical agents (foam, AB film)	1	2	3
	4. Condoms (preservatives)	1	2	3
	5. Diaphragm	1	2	3
	6. Infertile days	1	2	3
	7. Withdrawal	1	2	3
	8. Other, please state_____	1	2	3

MZ SECTION – MENTAL HEALTH

MZ1	**Have You been tense, under stress/ pressure during the past 4 weeks?** [ANK] *One answer*	1. No 2. Yes, occasionally but no more than others 3. Yes, more than others 4. Yes, my life is almost unbearable
MZ2	**Did you experience emotional problems (sadness, moodiness, depression, despondency) during the past 4 weeks?**	1. No 2. Yes

	For how long did you experience each of the following mental states during the past 4 weeks? *PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS*					
MZ3		**Constantly**	**Most of the time**	**Some of the time**	**For short periods of time**	**Not at all**
	BB I was full of enthusiasm	1	2	3	4	5
	CC I was very nervous	1	2	3	4	5
	DD I was sad	1	2	3	4	5
	EE I was happy	1	2	3	4	5
	FF I felt tired	1	2	3	4	5

NA SECTION – VIOLENCE

			No	**Yes**	**Did not want to answer**
NA1	**Have you been exposed to any form of physical violence during the past 12 months?** *PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS*	1. In the family	1	2	3
		2. At school/ work	1	2	3
		3. On the street	1	2	3
		4. Other	1	2	3
NA2	**Have you been exposed to any form of psychological violence (insulting, humiliation, belittling, blackmail, ridicule) during the past 12 months?** *PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS*		**No**	**Yes**	**Did not want to answer**
		1. In the family	1	2	3
		2. At school/ work	1	2	3
		3. On the street	1	2	3
		4. Other	1	2	3

	Question NA3 is answered by those who had at least one positive answer – yes (2) in questions NA1 and/or NA2			N	Yes
NA3	If you have been exposed to any form of physical or psychological violence in the past 12 months to whom did you turn for help? *PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS*	1. Social worker		1	2
		2. health worker		1	2
		3. SOS services		1	2
		4. Police		1	2
		5. Parent, cousin, friend		1	2
		6. teacher, professor		1	2
		7. *Other, state:* _____			

	IMPORTANT NOTE: ALL RESPONDENTS ANSWER QUESTION NA4				

	Has it ever occurred that you have: **PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS**		**No**	**Yes**	**Did not want to answer**
NA4		1. Psychologically mistreated someone (insult, humiliate…)	1	2	3
		2. Physically mistreated someone (beating)	1	2	3

PO SECTION – INJURIES		
PO1	**Have you been injured during the past 12 months?** *[ANK] This relates only to physical injuries*	1. No, *continue from next module* 2. Yes
PO2	**Where did your last injury occur?**	1. In traffic 2. At home 3. At work 4. In school 5. On the street 6. In the field 7. On the sports field 8. Other, state: _____
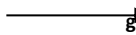
AŽ SECTION – ABILITY TO PERFORM DAILY LIFE ACTIVITIES					
AŽ1	**Have you been limited in performing usual activities (activities that most people usually do) because of a health related problem in the past 6 months?**	1. No, *continue from next module* 2. Yes, occasionally 3. Yes, constantly			
AŽ2	**To what extent have you been limited in performing usual activities because of a health related problem in the past 6 months?**	1. Very limited 2. Moderately limited 3. Not limited at all			
	Can you independently do the following: *[ANK] Read one by one and* PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS				
		Yes, without difficulties	**Yes, with some difficulty**	**Yes, with a lot of difficulty**	**No, only with someone's help**
AŽ3	1. Lie down and get up from a bed, sit down and stand up from a chair	1	2	3	4
	2. Dress and undress , put on and take off shoes	1	2	3	4
	3. Cut and eat food in a plate	1	2	3	4
	4. Use the toilet?	1	2	3	4
	5. Take showers/ baths?	1	2	3	4
AŽ4	**What is your movement capability** *[ANK] One answer*	1. You are bedridden 2. You move using a wheelchair 3. You move with the help of different walking aids (canes, crutches, prosthesis) → *Go to next module* 4. You move on your own			

AŽ5	Can you independently and without any aids cross a distance of 500m *[ANK]* One answer	1. Yes, without difficulties 2. Yes, with some difficulty 3. Yes, with a lot of difficulty 4. No

KZ SECTION – HEALTH CARE UTILIZATION

KZ1	**How far away from your house is the nearest health care institution where you receive family/ general medicine services?**	1. Up to 700 m 2. From 701 to 1500 m 3. From to 1501 to 2000 m 4. From 2001 to 5000 m 5. More than 5 000 m
KZ2	**To whom do you first turn when faced with a health problem?** *[ANK]* One answer	1. Family medicine doctor 2. General medicine doctor 3. Occupational medicine doctor 4. Specialist in the public sector 5. Doctor in the private sector 6. Other, state _____
KZ3	**Do you have your family doctor?**	1. Yes 2. No ⟶ **KZ8**
KZ4	**When was the last time you visited your family doctor?** *[ANK]* One answer. If the answer is 1 or 2, enter the number of times.	1. During the past 4 weeks, how many times ____ 2. During the past 12 months, how many times __ ⟶ **KZ6** 3. More than a year ago 4. I have never visited ⟶ **KZ5**
KZ5	**If the answer is "I have never visited", What is the <u>main reason</u> you never visited your family doctor?** *[ANK] One answer*	1. I am healthy, I don't need the family doctor 2. I did not have time to register 3. I have no confidence in family doctors 4. Crowdedness, long waiting times for services 5. Doctor services have to be paid for – financial reasons 6. It is too far away for me 7. There is no family medicine 8. Other *After this question go to* ⟶ **KZ8**
KZ6	**What was the main reason for your last visit to a family doctor?** *[ANK] One answer*	1. Health check-up (no problems or discomforts) 2. Full physical examination 3. Illness 4. Injury 5. Medicine prescription 6. Referral (to a specialist, a laboratory) 7. Notes, certificates 8. Other, state: _____
KZ7	**When you last visited your family doctor, how long did you wait to be seen by the doctor?** *[ANK] One answer*	1. I was seen on the same day 2. I waited 2-3 days 3. I waited 4-5 days 4. I waited more than 5 days

How long did you wait for the following services at a medical center after being referred by your doctor?
PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS

Examinations	I was admitted immediately	Up to seven days	Up to a month	More than a month	I did not use the service
1. Laboratory examination	1	2	3	4	5
2. X-ray examination	1	2	3	4	5
3. Ultrasound	1	2	3	4	5
4. ECG	1	2	3	4	5

(KZ8)

How long did you wait for the following services after being referred by your doctor?
PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS

	Enter the number of days spent waiting	I did not use the service (X)
1. CT scan		
2. MRI scan		
3. Colonoscopy		
4. Radiation therapy		

(KZ9)

KZ10	**Have you visited a medical specialist (excluding the visits to a family medicine specialist)?** *[ANK] One answer. If the answer is 1, enter the number of times as well. Includes visits to both specialists in the public and private sectors*	1. During the past 4 weeks, how many times ____ 2. During the past 12 months, how many times __ **3.** More than a year ago 4. I have never visited a medical specialist → **KZ12**
KZ11	**If you have been referred to a medical specialist, how long have you waited to be seen during <u>your last visit</u> in the private and public sectors respectively?** *[ANK] For each sector it is possible to encircle only one answer. If the respondent did not visit a medical specialist in one of the sectors, do not encircle anything.*	**KZ11a Public sector** 1. I was seen on the same day 2. I waited 2-5 days 3. I waited 5-7 days 4. I waited more than 7 days **KZ11b Private sector** 1. I was seen on the same day 2. I waited 2-5 days 3. I waited 5-7 days 4. I waited more than 7 days
KZ12	**Have you ever visited a dentist** *[ANK] One answer. If the answer is 1 or 2, enter the number of times as well.*	1. Yes, during the past 4 weeks _____ times 2. Yes, during the past 12 months _____ times 3. More than a year ago 4. I never visited a dentist → **KZ14**
KZ13	**What is the <u>main</u> reason for your last visit to a dentist?** *[ANK] One answer*	1. Preventive care or control check-up, advice 2. Tooth and/or gums treatment/ repair 3. Tooth extraction 4. Prosthetics work (dentures, bridges, caps) 5. Pain 6. Other_____
KZ14	**If you have used emergency medical services in the past 12 months, please state how long have you waited for the arrival of the medical personnel <u>from the moment of placing the call</u>** *ANK] One answer, both for calls from home or from outside.*	1. I waited for_____ minutes 2. I can not remember how long I waited 3. I did not used emergency medical services
KZ15	**Have you used the services of a doctor of medicine in the private sector, to whom you paid for his services, in the past 12 months?**	1. Yes 2. No
KZ16	**Have you used the services of a dentist in the private sector, to whom you paid for his services, in the past 12 months?**	1. Yes 2. No
KZ17	**When was the last time you underwent a fecal occult blood test?** *[ANK] One answer*	1. During the past 12 months 2. More than 1, less than 2 years ago 3. More than 2, less than 3 years ago 4. More than 3 years ago 5. I can not remember 6. Never 7. I don't know what kind of test that is
KZ18	**Have you ever been vaccinated against the flu?**	1. No → **KZ19** 2. Yes
KZ19	**When was the last time you were vaccinated against the flu?** *[ANK] One answer*	1. During the past 12 months 2. 1 year ago 3. I do not know

KZ20

How satisfied where you with the services provided by the following medical professionals during the past 12 months
[ANK] PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS

	Very unsatisfied	Unsatisfied	Neither satisfied nor unsatisfied	Satisfied	Very satisfied	I did not use the services
1. Family medicine doctor	1	2	3	4	5	6
2. General medicine doctor	1	2	3	4	5	6
3. Occupational medicine doctor	1	2	3	4	5	6
4. Medical specialist in the public sector	1	2	3	4	5	6
5. Medical specialist in the private sector	1	2	3	4	5	6
6. Dentist in the public sector	1	2	3	4	5	6
7. Dentist in the private sector	1	2	3	4	5	6

KZ21	When was the last time your received each of the following services. [ANK]] Read SERVICES one by one to the respondent and *PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS*					
		Never	**During the past 12 months**	**1-5 years ago**	**More than 5 years ago**	**I do not know**
	1. Blood pressure measurement	1	2	3	4	5
	2. Blood sugar measurement	1	2	3	4	5
	3. Blood lipids measurement	1	2	3	4	5
	4. Body weight measurement	1	2	3	4	5
	5. Body height measurement	1	2	3	4	5
	6. Digito-rectal examination (colon examination)	1	2	3	4	5

KZ22	Has any of the following persons advised you to undertake any of the following during the past 12 months: *PROVIDE AN ANSWER TO EACH OF THE GIVEN OPTIONS (multiple answers possible)*				
		Doctor, other health care professional	**Family member**	**No one advised me**	**It was not necessary**
	1. Reduce your fat intake	1	2	3	4
	2. Reduce your salt intake	1	2	3	4
	3. Reduce your sugar intake	1	2	3	4
	4. Eat more fruit and vegetables	1	2	3	4
	5. Reduce your body weight	1	2	3	4
	6. Increase your physical activity	1	2	3	4
	7. Quit smoking	1	2	3	4
	8. Drink less alcoholic beverages	1	2	3	4

KZ23	**When was the last time you were on hospital treatment?** **Accompanying a child to hospital and going to hospital for childbirth are excluded.** [ANK] *One answer. If the answer is 1, enter the number of times as well. This is related only to the public sector*	1. During the past 12 months _____ times 2. More than a year ago 3. I have never been on hospital treatment, - continue from next module
KZ24	**How long have you waited to be admitted to the hospital after receiving the referral?** [ANK] *If there were multiple occasion of hospital treatment this question then refers to the last instance.*	Number of days spent waiting: __ __
KZ25	**Are you satisfied with the hospital treatment?** [ANK] *If there were multiple occasions of hospital treatment this question then refers to the last instance.*	1. Very unsatisfied 2. Unsatisfied 3. Neither satisfied nor unsatisfied 4. Satisfied 5. Very satisfied

IK – TO BE ANSWERED ONLY BE RESPONDENTS WHO HAVE USED HEALTH CARE SERVICES		
IK1	While using health care services, have you EVER paid or given gifts to a doctor, another health care professional or other staff in health care institutions in the public sector (this does not include participatory payments).	1. No, go to IK3 2. Yes
IK2	When have you done so? [ANK] *Multiple answers possible*	1. Before receiving the service 2. During treatment 3. After receiving the service / treatment
IK3	Have you been directly asked for a payment by a doctor, another health care professional, or staff in health care institutions while visiting a health institution or scheduling an appointment during the past 12 months?	1. No 2. Yes

LI SECTION – MEDICATION

LI1	**Have you been taking any medication PRESCRIBED TO YOU BY A DOCTOR during the <u>past two weeks</u>**	1. No ⟶ 2. Yes	*LI2*
LI1a	**If the answer is yes, which of the following:** [ANK] *Multiple answers possible*	1. Antibiotics 2. High blood pressure medication 3. Sedatives 4. Other, state: _____	
LI2	**Have you been taking any medication on your <u>own initiative</u>, WITHOUT A DOCTOR'S PRESCRIPTION, during the <u>past two weeks</u>**	1. No 2. Yes	

AM SECTION – ANTHROPOMETRIC MEASUREMENTS

AM1. Body height (BH) while standing (cm): □□□ . □	**AM2. Measurement results** 1. Measurement completed 2. Measurement refused 3. Measurement could not be carried out (state the reason) : _____
AM 3. Body weight (BW) (kg): □□□ . □	**AM 4. Measurement results** 1. Measurement completed 2. Measurement refused 3. Measurement could not be carried out (state the reason:) _____
AM5. Waist circumference (cm): 1. Measurement □□□ . □ 2. Measurement □□□ . □	**AM6. Measurement results** 1. Measurement completed 2. Measurement refused 3. Measurement could not be carried out (state the reason) : _____

SURVEYOR COMMENTS:

Questionnaire code: |__|__|/|__|__|__|/|__|__|__|__|__|/|__|

OBJECTIVE DIAGNOSIS AND MEASUREMENTS FORM

<table>
<tr><td colspan="2" align="center">DM SECTION - GENER INFORMATION</td></tr>
<tr><td colspan="2">This FORM IS TO BE FILLED AND MEASUREMENTS ARE TO BE CONDUCTED for every household member aged 18 and over living in the household and having consented to the measurements.</td></tr>
<tr><td>DM1. Enumeration district number in the sample: |__|__|__|</td><td>DM2. Household code: |__|__|__|__|__|__|</td></tr>
<tr><td>DM3 . Household member name: _____</td><td>DM4. Ordinal number of household member: |__|</td></tr>
<tr><td>DM5. Measurer code: |__|__|</td><td>DM6. Day / month / year of measurement: |__|__| |__|__| |__|__|__|__|</td></tr>
</table>

<table>
<tr><td colspan="3" align="center">KP SECTION - BLOOD PRESSURE</td></tr>
<tr>
<td rowspan="4">KP1. Blood pressure measurement (KP)</td>
<td colspan="2">KP1.a Room temperature (⁰C) |__|__|</td>
</tr>
<tr>
<td>KP1.b Hand used for measurement

1.   Right
2. Left</td>
<td>KP1.c Body position during measurement

1.   Sitting
2.   Recumbent</td>
</tr>
<tr>
<td>KP1.d Reason for measurement in recumbent position (state):</td>
<td>KP2. Pulse frequency (30 seconds) |__|__|__|</td>
</tr>
</table>

<table>
<tr>
<td rowspan="5">KP3. Time of first measurement of BP:

__ _:_ __
(hh/mm)

ANK] The time between the measurements is 1 minute. The person whose BP is being measured must not change their position.</td>
<td colspan="2" align="center">KP4. Measured BLOOD PRESSURE values:</td>
</tr>
<tr>
<td>KP4. 1. Systolic blood pressure (mmHg)</td>
<td>KP4.2 Diastolic blood pressure (mmHg)</td>
</tr>
<tr>
<td>1. First   measurement |__|__|__|</td>
<td>1. First measurement |__|__|__|</td>
</tr>
<tr>
<td>2. Second measurement |__|__|__|</td>
<td>2. Second measurement |__|__|__|</td>
</tr>
<tr>
<td>3. Third measurement |__|__|__|</td>
<td>3. Third measurement |__|__|__|</td>
</tr>
</table>

KP5. **Blood pressure measurement results** *ANK] Encircle*	1. Measured 2. Person absent 3. Person refused measurement 4. It was not possible to carry out the measurement 5. Other, state

KA SECTION - BLOOD ANALYSIS

ANK] Before taking his/her blood, every respondent must be asked about the times passed, in hours, since his/her last meal, consumption of sweetened beverages, and alcohol	**KA1. Time, in hours, since:** a) Last meal ☐☐ b) Last consumption of sweetened beverages ☐☐ c) Last consumption of alcohol ☐☐

KA2. Cholesterol measurement
ANK] Ask every respondent all the questions a - e. If all answers are "No" carry out the analysis.

Did you suffer from (undergo) any of the following during the past two months (encircle):
a Acute myocardial infarction   Yes   No
b Surgical operations   Yes   No
c Traumas (injuries)   Yes   No
d Diseases associated with changes in lipids (fats) metabolism   Yes   No
e Acute bacterial and/or virus infections   Yes   No

KA3. **Time of measurement (capillary blood taking)**	**_ _:_ _ (hh/mm)**	
KA4.Measured CHOLESTEROL value	☐☐ . ☐	**KA7. Results of blood analysis measurements:** 1. Carried out fully
KA5. Measured BLOOD SUGAR value	☐☐ . ☐	2. Carried out partially 3. Person refused measurement 4. It was not possible to carry out the measurement
KA6. Measured TRYGLICERIDE value	☐☐ . ☐	5. Other, state

Remarks / comments:

Supervisor code: __ __   Controller code: __ __

List of graphs

List of tables