

STEPS

PREVALENCE OF
NONCOMMUNICABLE
DISEASE RISK FACTORS IN
THE REPUBLIC OF AZERBAIJAN _ 2017

WHO EUROPEAN OFFICE FOR THE PREVENTION AND CONTROL OF NONCOMMUNICABLE DISEASES



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Abstract

Noncommunicable diseases (NCDs) are the principal cause of morbidity, disability and premature mortality in Azerbaijan. The most effective way to reduce the NCD burden is to prevent NCD development, by addressing the behavioural risk factors underlying NCDs at the population and individual levels: smoking, alcohol use, excessive salt intake, low physical activity, overweight and obesity, and unhealthy diets.

In Azerbaijan, a national survey of the prevalence of major NCD risk factors, aligned with the WHO-endorsed STEPwise approach to surveillance (STEPS) methodology, was conducted in 2017. The survey results will allow an objective view of the current situation regarding the prevalence of NCD risk factors in the adult population of the country to be formed and will determine approaches to NCD prevention and control over the coming years.

Keywords

Noncommunicable diseases

Physical activity

Risk factors

Obesity

Azerbaijan

Blood pressure

Tobacco

Cholesterol

Alcohol drinking

Cardiovascular disease

Diet

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> Preface

Noncommunicable diseases (NCDs) are the leading cause of mortality worldwide and Azerbaijan is no exception. The main social and economic burden of NCDs is caused by four diseases: cardiovascular disease (CVD), diabetes, cancer and chronic obstructive pulmonary disease. All of these lead to long-term incapacity, reduced family well-being and lower productivity, and they also impose a major burden on a country's health-care system and society in general. Addressing the NCD burden constitutes an integral part of achieving United Nations Sustainable Development Goal 3 (SDG 3) – “Good Health and Well-Being”. The target set in SDG 3 is to reduce premature mortality from NCDs, through prevention and treatment, by one third by 2030.

NCDs in Azerbaijan are the cause of 89% of all deaths, over 60% of which are attributable to CVDs. NCDs are the cause of 80% of years lived with disability. Major NCD risk factors in Azerbaijan are tobacco, high blood pressure and dietary issues, with a particularly high burden of disease due to tobacco and raised blood pressure among males. The country is off track in reducing raised blood pressure in both males and females, with levels remaining significantly higher than the average for the WHO European Region. Overweight and obesity in both sexes are increasing steeply and significantly off target, having now reached the average level for the Region. The situation with respect to NCD risk factors affects average life expectancy in Azerbaijan, which is 73 years (70.5 for men, 75.5 for women) –lower than the WHO European Region average.

Relatively high mortality in the working-age population is a major reason for the decreased level of life expectancy. The life expectancy of men of working age is significantly lower than in western and central Europe. In particular, the risk of premature death between 30 and 70 years in Azerbaijan is about 30%, while in neighbouring Turkey it is 22% and in western European countries it does not exceed 15%.

Azerbaijan, like most other European countries, is characterized by a significant prevalence of NCD risk factors, which are responsible for the critical health indicators seen among the Azerbaijani population. While Azerbaijan recently (in 2011 and 2016) conducted two nationally representative surveys of the main NCD risk factors, which contained elements of the standardized methodology for measuring prevalence of these risk factors, they still did not allow full comparisons to be made between Azerbaijan and other countries. Absence of a fully standardized approach to surveillance of NCD risk factors has hindered the adoption of evidence-informed decisions that could potentially improve the health situation in the country. Fragmentary studies of individual risk factors have revealed only the tip of the iceberg that the NCD burden represents.

The Azerbaijan National Strategy for the Prevention and Control of Non-Communicable Diseases 2015–2020, signed by the president of Azerbaijan

in December 2015 and developed on the basis of the European Strategy for the Prevention and Control of Noncommunicable Diseases and the Global Action Plan for the Prevention and Control of NCDs, has finally brought the issue to a head, emphasizing the necessity of conducting high-quality surveillance of NCD risk factors at the national level among different age and gender groups. The availability of such data from standardized surveillance surveys of NCD risk factors will allow the current situation to be assessed and measures to enhance the health of the population, including improved access to prevention services, to be proposed. It will also facilitate monitoring of progress towards the defined goals, including achieving universal health coverage as one of the core priorities set by the WHO Regional Office for Europe in its European Programme of Work.

As the STEPS survey was fully conducted in Azerbaijan for the first time, it was mainly aimed at obtaining baseline information on the main NCD risk factors, both behavioural and biological. The country included some additional questions related to mental health, violence and injury. In this way, the information obtained can serve as a starting point for monitoring NCD risk factors in Azerbaijan over the years ahead, allowing the effectiveness of the National Strategy implementation to be monitored. At the same time, the study results make it possible to compare the prevalence of NCD risk factors in Azerbaijan with those of other countries and thus to choose the most effective preventive interventions for Azerbaijan on the basis of the best international practices.

As the prevalence of NCD risk factors has now been determined through the STEPS survey, evidence-based data are available to help set priorities and plan necessary interventions and actions to ingrain healthy attitudes among the Azerbaijani people over the coming years. At the same time, this initiative highlights once again the necessity of raising public awareness of healthy lifestyles; developing and implementing integrated policies of urban planning and nutrition; expanding international cooperation to learn best practices for tackling NCDs; promoting training and education for health-care workers at all levels (with a focus on primary health care); and distributing sectoral funding efficiently to assist NCD prevention and control.

By implementing its STEPS survey, Azerbaijan has fulfilled one of the most important commitments made in 2018 by heads of state and governments at the United Nations General Assembly's Third High-level Meeting on the Prevention and Control of Non-communicable Diseases.

We would like to take this opportunity to invite all of you to read through the results of this important survey and to think deeply how all of us – as individuals, as a team, as an organization, as a community – can lead the way in conducting the research and advancing the work needed to protect and promote population health.

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> Abbreviations

BMI	body mass index
BP	blood pressure
bpm	beats per minute
CI	confidence interval
CVD	cardiovascular disease
DBP	diastolic blood pressure
DHS	Demographic and Health Survey
GYTS	Global Youth Tobacco Survey
HDL	high-density lipoprotein
IFG	impaired fasting glycaemia (glucose)
mmol/L	millimoles per litre
NCD	noncommunicable disease
SBP	systolic blood pressure
SSC	State Statistical Committee

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Executive summary



48.8%
of men were estimated
to be current smokers

The Ministry of Health of the Republic of Azerbaijan, with the technical and financial support of WHO and other partners, conducted a STEPS (Stepwise approach to surveillance) survey in 2017. The WHO STEPS approach focuses on obtaining core data on the established risk factors that determine the major noncommunicable disease (NCD) burden. This approach to chronic disease risk factor surveillance provides an entry point for the country to get started on activities related to such surveillance.

The STEPS approach consists of three sequential steps that lead to collection of data on NCD risk factors.

Step 1 uses a questionnaire to gather data on demographic information and behavioural measurements. The questions focus on tobacco use, alcohol consumption, diet, physical activity, history of raised blood pressure (BP), history of diabetes, history of raised total cholesterol, history of cardiovascular disease (CVD), lifestyle advice, and cervical cancer screening for women.

Step 2 comprises physical measurements of BP, height, weight, waist circumference and heart rate.

Step 3 comprises biochemical measurements focusing mainly on blood glucose and blood lipids.

The main findings of STEPS 2017, the second NCD risk factor survey in the Republic of Azerbaijan, were as follows.

- The prevalence of tobacco use, both smoked and smokeless products combined, was 24.0%. Overall, 48.8% of men were estimated to be current smokers – 47.2% daily smokers, 1.6% non-daily smokers. Only 0.2% of women reported smoking at the time of the interview. The percentage of current male smokers was higher in the younger age group (49.3%) than the older age group (47.8%). There was a slight difference in the percentage of current male smokers in urban and rural areas (49.2% versus 48.3%). Men started smoking, on average, at 18.7 years, with almost no difference between age groups. The mean duration of smoking among male daily smokers was 20.4 years; it was higher for older respondents than younger ones (33.9 years versus 13.1 years). 95.1% of daily smokers reported using manufactured cigarettes; the mean number of manufactured cigarettes smoked per day by daily smokers was 18.9 for all age groups. Of currently smoking male respondents, 49.5% had tried to give up in the last year. Nearly a quarter of respondents at home (24.9%) and about one in five in the workplace (18.3%) had been exposed to second-hand smoke in the 30 days preceding the survey.

- Of all survey respondents, 29.7% reported that they had consumed an alcoholic drink at some time in their lives; the remaining 70.3% were lifetime abstainers. Current drinkers (those who had consumed alcohol over the past 30 days) were almost exclusively male – 27.6% (as opposed to 0.8% of females). 11.0% of men reported that they had consumed six or more drinks (“heavy episodic drinking”) at least once in the previous 30 days. Male current drinkers had consumed, on average, 3.6 drinks per drinking occasion over the past 30 days.
- Consumption of fruits and vegetables was generally low: respondents consumed, on average, fruits on 5.1 days in a typical week and vegetables on 5.9 days. Consumption of both fruits and vegetables was more frequent among older respondents. Only 24.1% of respondents consumed five servings of fruits and/or vegetables a day (the daily minimum for an adult recommended by WHO). Female respondents consumed fruits and vegetables more frequently than men, and urban residents more frequently than their rural counterparts. About 26% of respondents reported that they always or often added salt before or while eating. On average, Azerbaijani people consumed 10 g of salt per day, almost double the WHO-recommended level of 5 g per day; there was a significant gender difference in mean salt intake – 11.4 g per day for men and 8.6 g per day for women.
- Almost one in five individuals (19%) did not meet the level of physical activity for health recommended by WHO. There was no noticeable difference between age groups and genders, but there was a visible difference between rural and urban populations, with a higher proportion of the latter failing to meet WHO recommendations. The median duration of all physical activity carried out daily by all respondents was 128.6 minutes – 145.7 minutes for men and 120 minutes for women. 91.4% of women did not engage in any vigorous physical activity (as opposed to 71.9% of men).
- Only about one in 10 women (11.3%) aged 30–49 years had ever had a screening test for cervical cancer.
- More than half the respondents reported that they had received healthy lifestyle advice from a doctor or health worker over the past three years related to physical activity and diet (intake of salt, fat, fruits and vegetables). A third of the population was advised to quit smoking and reduce consumption of sugary beverages, and almost half were advised to maintain a healthy body weight or to lose weight.



29.7%

reported that they had consumed an alcoholic drink at some time in their lives



The percentage of respondents aged 40–69 years with a 10-year cardiovascular risk



53.0%
of drivers or passengers of a motor vehicle had not always used a seat belt over the preceding 30 days

- Mean BMI of the study population was 26.0 kg/m² and was higher for women (26.4 kg/m²) than for men (25.5 kg/m²). It was also higher in the older age group of respondents and among rural residents. In terms of BMI classification, over half the population (55.4%) were overweight (BMI ≥25.0 kg/m²) and 20.6% were obese (BMI ≥30.0 kg/m²). The prevalence of overweight and obesity tended to increase with age. In both age groups, the proportion of overweight or obese respondents was higher for women than for men. Mean waist circumference was greater in men than in women (excluding pregnant women) – 92.3 cm versus 88.2 cm.
- Mean systolic blood pressure (SBP) in the survey population was 125.9 mmHg, with higher values found in men (127.0 mmHg). Mean diastolic blood pressure (DBP) was 81.2 mmHg, with slight differences between the sexes. 33.1% of respondents reported that their BP had never been measured. The prevalence of arterial hypertension (SBP >140 mmHg and/or DBP >90 mmHg or currently on medication for raised BP) in the entire sample was 29.7%. 65.4% of respondents with raised BP were not taking any medication, with the proportion of men (72.0%) higher than that of women (59.2%).
- Of the survey population, 71.8% had never had their blood glucose measured. The prevalence of diabetes diagnosed within the preceding 12 months was 4.2% (men 3.1%, women 5.3%), while 0.5% of respondents had been diagnosed but not within the past 12 months. Mean fasting plasma glucose was 4.6 mmol/L, with no differences between men and women. The prevalence of impaired fasting glycaemia (IFG) (≥6.1 mmol/L and <7.0 mmol/L) was 5.0% (men 5.0%, women 4.9%); for all respondents, it was almost twice as high in urban areas as in rural areas. The prevalence of diabetes mellitus (fasting plasma glucose ≥ 7.0 mmol/L or taking antidiabetic medication), for all respondents, was 6.5% (women significantly higher than men – 7.9% versus 5.2%).
- About one in four individuals (26.9%) had a raised total cholesterol level (≥ 5 mmol/L or taking medication for hypercholesterolemia), with the proportion of women (31.3%) higher than that of men (22.3%).
- The percentage of respondents aged 40–69 years with a 10-year cardiovascular risk ≥30% or with existing CVD was 12.6% – 13.3% for men and 12.0% for women.
- The survey showed that every third person (32.5%) had three or more risk factors for NCDs; the prevalence increased with age and was higher in men (40.0%) than women (24.9%). A total of 61.7% of respondents had 1–2 risk factors, and only 5.8% had none of the five NCD risk factors.
- The percentage of drivers or passengers of a motor vehicle who had not always used a seat belt over the preceding 30 days was 53.0%. This indicator was higher for women (67.1%) than for men (40.8%).

> 1. Background

1.1 Noncommunicable diseases worldwide

Noncommunicable diseases (NCDs) tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behavioural factors. NCDs are a group of conditions that comprise cardiovascular diseases (CVDs), cancers, mental health problems, diabetes mellitus, and chronic respiratory diseases.

These diseases are driven by forces that include rapid unplanned urbanization, globalization of unhealthy lifestyles and population ageing. Unhealthy diets and a lack of physical activity may show up in people as raised blood pressure (BP), increased blood glucose, elevated blood lipids and obesity. These are called metabolic risk factors and can lead to CVDs, which are the leading NCDs in terms of premature deaths. For the first time in history, more people are dying of NCDs, such as heart disease and diabetes, than of infectious diseases. Globally, seven in 10 deaths every year are due to NCDs, and according to WHO reports, the main contributors are tobacco use, harmful use of alcohol, unhealthy diets, and physical inactivity.¹

In 2016, an estimated 41 million deaths occurred globally as a result of NCDs, accounting for 71% of the 56 million total deaths. The majority of these deaths were caused by the four main NCDs: CVD, 17.9 million deaths (accounting for 44% of all NCD deaths); cancer, 9 million deaths (22%); chronic respiratory disease, 3.9 million deaths (10%); and diabetes, 1.6 million deaths (4%).¹

NCDs represent a leading threat to human health and economic development.² The burden of NCDs is rapidly increasing, especially in developing countries, and their social, economic and health consequences are becoming more and more significant. Over 80% of deaths resulting from CVDs and diabetes, almost 90% of deaths from chronic obstructive pulmonary disease, and more than two thirds of deaths from cancer occur in low- and middle-income countries.³

Many lives that would otherwise be lost to NCDs can be saved through early diagnosis and improved access to high-quality and affordable treatment, as well as through a whole-of-government approach to reduce the main risk factors. Investigations have shown that – when NCD risk factors are recognized, understood and prevented – the stroke rate can be reduced by 80%,⁴ the cancer rate by 30–50%,⁵ and type 2 diabetes can be delayed or totally prevented.⁶ An estimated 2.5 million deaths could be prevented each year if global salt consumption were reduced to the recommended level.⁷

Tobacco is a leading cause of morbidity and mortality globally.⁸ Both smoked directly and breathed in second-hand, tobacco is responsible

for more than 8 million deaths annually. Smoking is estimated to cause about 90% of lung cancers,⁹ 80% of chronic respiratory disease,¹⁰ and 10% of CVDs.¹¹ In 2015, more than 1.1 billion people smoked tobacco, with far more males than females currently engaging in this behaviour. The WHO Framework Convention on Tobacco Control has now been ratified by 180 parties, representing 90% of the global population.¹²

About 5.1% of the global burden of disease and injury is attributable to alcohol.¹³ Alcohol contributes to traumatic outcomes that kill or disable people at a relatively young age, resulting in the loss of many years of life, as well as disability and death. Harmful use of alcohol causes about 3.8% of all deaths each year; more than half of these are due to NCDs, including liver cirrhosis, cancer and CVD. Harmful use of alcohol is the leading risk factor for death in men aged 15–59 years. The worldwide level of alcohol consumption in 2016 was 6.4 litres of pure alcohol per person aged 15 years and older, with considerable variation between WHO regions.¹⁴

Low consumption of fruits and vegetables is associated with higher risk of CVDs and stomach and colorectal cancers. High salt consumption is an important determinant of high BP and CVD risk. High consumption of saturated fat and trans-fat is associated with increased risk of heart disease and stroke.

Physically inactive people have a 20–30% increased risk of all-cause mortality.¹⁵ Raised body mass index (BMI) increases the risk of heart disease, stroke, diabetes and certain cancers.^{16,17}

Raised BP is the leading risk factor for the global disease burden. It is estimated to cause 9.4 million deaths every year – more than half of the estimated 18 million annual deaths from all CVDs. Raised blood cholesterol is estimated to cause 2.6 million deaths annually. Both are major risk factors for CVD and stroke.^{18,19}

1.2 NCDs in the Republic of Azerbaijan

There have been several recent studies on NCDs conducted by the Ministry of Health of the Republic of Azerbaijan: *Situational analysis of NCDs in Azerbaijan* (2008); *Economic impact of NCDs in Azerbaijan* (2009); the 2011 Global Youth Tobacco Survey (GYTS-2011);²⁰ the 2016 Global Youth Tobacco Survey (GYTS-2016);²¹ the National Survey on Risk Factors for Chronic Noncommunicable Diseases 2011;¹⁷ *Research into NCD risk factors in Azerbaijan* (2016);²² and a comparative analysis to evaluate the relevance of Azerbaijani legislation on tobacco control to the requirements set out in the WHO Framework Convention on Tobacco Control (conducted in 2015, updated in 2016). In addition to these studies and surveys, various data related to NCDs were obtained during the Azerbaijan Demographic and Health Surveys (DHS), which took place in 2006 and 2011.^{23,24}

The information collected shows that NCDs are – as in most other countries – a major cause of deaths and morbidity in Azerbaijan. Moreover, there is a high prevalence of risk factors such as smoking, overweight and

unhealthy diet, which are responsible for the great majority of NCD cases. According to the National Survey on NCD Risk Factors (2011), 62.7% of the adult population had at least 1–2 risk factors for developing an NCD, while 32.4% had three or more such factors. According to the State Statistical Committee of Azerbaijan, as of the end of 2016, the following six types of disease or injury were the leading causes of death in Azerbaijan:^{17,23,24}

- (1) diseases of the cardiovascular system – 34 093 (60%)
- (2) neoplasms/cancers – 8252 (15%)
- (3) diseases of the digestive system – 2794 (5%)
- (4) injury, poisoning and certain other external causes of death – 2731 (5%)
- (5) diseases of the respiratory system – 1815 (3.2%)
- (6) diseases of the endocrine system, including diabetes, and malnutrition – 1433 (2.5%).

Most of these diseases are attributable to common preventable risk factors such as tobacco use, excessive alcohol consumption, unhealthy diet, and physical inactivity.

The Azerbaijan National Strategy for the Prevention and Control of Non-Communicable Diseases 2015–2020, signed by the president of Azerbaijan in December 2015, is currently being implemented.²⁵ The strategy is based on the European Strategy for the Prevention and Control of Noncommunicable Diseases and the Global Action Plan for the Prevention and Control of NCDs.^{26,27} Its main goal is to prevent premature deaths and reduce the burden of NCDs in order to improve the quality of life and prolong the life expectancy of the population, and to strengthen labour resources and the economic potential of the country. Implementation of the NCD strategy is one of the tasks prioritized in *“Azerbaijan 2020: Look into the future” concept of development*, which was approved by the president of Azerbaijan in 2015.²⁸

As a continuation of efforts to reduce risk factors, the new Law of the Republic of Azerbaijan “On restriction of tobacco use” was approved by the president of Azerbaijan in December 2017.²⁹ The new law is comprehensive, covering a broad range of issues related to tobacco control, such as introducing measures to protect people from exposure to second-hand tobacco smoke (for instance, by creating smoke-free public places) and imposing bans on tobacco advertising, promotion and sponsorship. Furthermore, it is expected that adoption of the new law will have a positive effect on all laws in Azerbaijan that relate to tobacco control.

1.3 Prevalence of NCD risk factors in the Republic of Azerbaijan

Smoking is still a problem for Azerbaijani society. In Azerbaijan, men smoke extensively, while women and children are mostly exposed to second-hand smoke. WHO data (2017) reported 35.3% prevalence of smoking among men (15+).³⁰

Azerbaijan has conducted several national surveys to monitor progress on tobacco control. Findings from the 2011 NCD survey (18 years and above) showed that the total prevalence of smoking overall was 22.9%.¹⁷ This prevalence was much higher for men (48.7%) than for women (0.5%); the possibility of underreporting among female respondents cannot be excluded. The greatest exposure to smoke was found at workplaces for men (55.0%) and at home for women (40.2%).

Data from GYTS-2016 (13–15 years) indicated that over 10% of students had smoked cigarettes, with significantly higher rates among boys. Current tobacco use rates were lower, at 7.3%. Nearly three in 10 students lived in homes where others smoked, and 40.8% of students were exposed to smoke in enclosed public places (27.3% in 2011).^{20,21}

According to the 2011 NCD survey, 14.3% of adults were regular alcohol users in Azerbaijan.¹⁷ Results in DHS-2006 show that 40% of men age 15–59 had consumed at least one alcoholic beverage in the month prior to the interview.²³

Although Azerbaijan is known for its rich vegetables and fruits, in 2010 more than half the population did not consume these products daily. The majority of the population consumed fewer vegetables and fruits than the WHO-recommended daily intake, with no significant differences between age and gender groups.³¹

According to results of the 2011 National Survey on NCD Risk Factors, the mean BMI was 27.0, with women having higher BMI than men (27.6 versus 26.5, respectively). The proportion of respondents classified as overweight and obese was 35.8% (women) and 21.9% (men). Obesity was substantially more prevalent among women (27.2%) than men (16.4%).¹⁷

According to the 2011 National Survey,¹⁷ another widespread risk factor in Azerbaijan was high BP. This is one of the most important modifiable risk factors for CVDs such as heart attack, myocardial infarction, acute coronary syndrome, congestive heart failure, stroke and peripheral vascular disease. Overall, 872 out of 2000 respondents had raised BP or were taking medicines for hypertension; of these, 7.5% were on medication and had their BP under control, 34.6% were taking drugs for raised BP but did not have it under control, and 57.9% were not taking any antihypertensive medicines and did not have their BP under control. Around half of women were on medication, whereas only about a third of men were on treatment.

Taking into account the rising prevalence of these risk factors and their contribution to the burden of disease in the country, it is important to analyse the changing trends, both nationally and regionally.

> 2. Survey goal and objectives

2.1 Survey goal

The goal of the first official STEPS survey in Azerbaijan (following the 2011 national survey, which largely followed the STEPS methodology¹⁷) was to provide up-to-date information using WHO-approved methods by assessing the prevalence, current situation and future tendencies of NCD causes and risk factors among the Azerbaijani population.

2.2 Survey objectives

The objectives of the survey were:

- to obtain the current levels of risk factors and the prevalence of behavioural risk factors for NCDs in the population aged 18–69 years in Azerbaijan;
- to determine the difference in the prevalence of risk factors between sexes and areas of residence and across age groups;
- to assess the progress in implementation of the national and global action plans;
- to track the direction and magnitude of trends in NCD risk factors; and
- to support the planning and evaluation of NCD strategy, policy and programme interventions.

2.3 Rationale for the survey

In the Republic of Azerbaijan there is no permanent monitoring system to monitor risk factors, and existing statistical data from the country's State Statistical Committee (SSC) are fragmentary and unsystematic. In order to obtain relevant data, a nationwide survey (using the STEPS methodology) was conducted in Azerbaijan in 2011.¹⁷ The findings of this national survey provided the evidence for developing the National Strategy on the Prevention and Control of Noncommunicable Diseases 2015–2020 and the NCD surveillance system in the country.²⁵ In 2016 the Ministry of Health conducted *Research into NCD risk factors in Azerbaijan*, in line with the implementation plan of the national NCD strategy.²² This survey partially used STEPS methodology.

The first official WHO STEPS survey in Azerbaijan was conducted in 2017. This survey provided the opportunity to compare results with the earlier 2011 survey (which also used the STEPS methodology)¹⁷ and to identify shifts, if any, in the prevalence of behavioural risk factors for NCDs and any changes needed in the policies associated with them.

The survey was conducted in accordance with the WHO methodology, thereby providing comparable information on the prevalence of risk factors for NCDs in different countries across the world.

> 3. Survey methodology

3.1 The STEPS approach

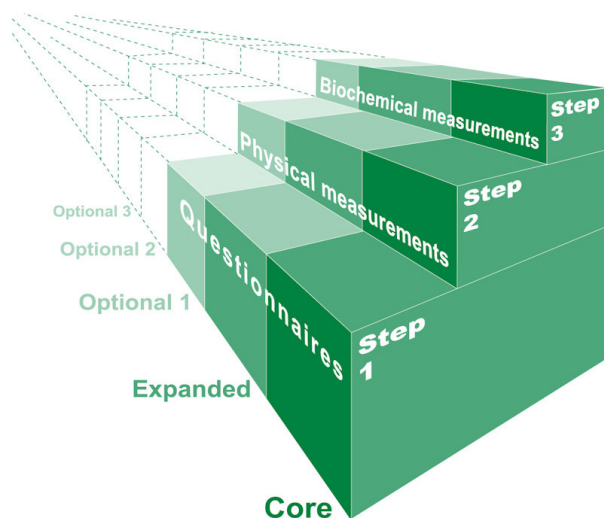
The survey used the WHO-endorsed STEPwise approach to surveillance (STEPS) for surveillance of NCDs and their associated risk factors (Fig. 1). The approach is based on following three sequential steps in collecting data on NCD risk factors. Each step focuses on a particular set of data which is subdivided into three main categories: core items, expanded items and optional items. Data on core items should be collected in any country setting. Expanded items and optional items are dependent on human resources, logistics and financial limitations.

Step 1 core items include information on basic demographic data; tobacco use; alcohol consumption; fruit and vegetable consumption; consumption of salt; physical activity; history of raised BP, diabetes, raised total cholesterol and CVDs; lifestyle advice; and cervical cancer screening.

Step 2 core items include the following physical measurements: BP, height, weight and waist circumference.

Step 3 core items include the following biochemical measurements: fasting blood sugar, total cholesterol, and urinary sodium and creatinine.

Fig. 1. Concept of the WHO STEPwise approach



WHO STEPS also contain eSTEPS, a software package and set of specific tools to enter data in electronic format. This method brings several important advantages: no paper forms needed, built-in range checks and determined flow of data collection, and simpler preparation of dataset for analyses.

It is recommended that STEPS surveys are conducted once every five years (taking into account resource limitations), thus establishing a surveillance system on determined risk factors.



**TO DETERMINE
THE PREVALENCE**
OF BEHAVIOURAL AND
BIOLOGICAL RISK
FACTORS FOR NCDs

3.2 Sampling procedure

Overall, 2880 individuals participated in the STEPS survey. The age groups used in the study were based on the Global Burden of Disease age groups; there were two age groups, 18–44 and 45–69 years, per gender.³²

The sample size was calculated using the formula:

$$n = Z^2 \frac{P(1-P)}{e^2}$$

where:

Z = probability value for 95% confidence interval (CI) (1.96)

P = estimated prevalence of the risk factors (0.5)

e = margin of error (0.05).

The calculation resulted in a sample size $n = 384$.

The sample size was then adjusted for the design effect with a recommended value of 1.5 for the majority of complex STEPS studies:

$$n = 384 * 1.5 = 576$$

In addition, the sample size was adjusted for the four age/sex groups used in the STEPS survey simply by multiplying the sample size by their number:

$$n = 576 * 4 = 2304$$

Also, the sample size was adjusted for the anticipated non-response by dividing the sample size by the recommended anticipated response rate of 80%, thus obtaining the final sample size:

$$n = 2304/0.8 = 2880$$

The study used a stratified three-stage cluster design. The primary sampling units (clusters) were proportionally selected among all economic regions of Azerbaijan, excluding the Nakhchivan Autonomous Republic and occupied territories (Table 1). The STEPS survey used the database of the Central Election Commission.

Table 1. STEPS sample by economic region

	Economic region	Households (n)	Clusters (n)	Households in sample (n)
1	Baku	517 400	64	768
2	Absheron	120 900	17	204
3	Ganja-Qazakh	261 700	35	420
4	Shaki-Zaqatala	132 300	16	192
5	Lankaran	164 000	24	288
6	Quba-Khachmaz	110 500	14	168
7	Aran	389 700	55	660
8	Yukhari-Karabakh	95 100	7	84
9	Daglig-Shirvan	60 100	8	96
	Total	1 851 700	240	2880

STEPS SURVEYS
PROVIDE RELIABLE
AND INTERNATIONALLY
COMPARABLE
INFORMATION
ON THE PREVALENCE
OF RISK FACTORS



In the first stage, based on resource availability, 240 clusters were selected from the database with a probability proportional to cluster size; 135 clusters represented urban areas, 105 clusters rural areas.

In the second stage, secondary sampling units (households) were selected from each cluster using a simple random sampling approach. The number of households selected from each cluster was 12.

In the third stage, tertiary sampling units (individuals) were selected from each household using a simple random sampling approach. Just one individual was selected from each household.

The sample allocation structure is presented below:

240 clusters x 12 households x 1 individual = 2880 individuals

To increase the quality of survey results, data were weighted to adjust for the probability of selection (sample weight) and differences between the sample population and target population (population weight).

The survey was conducted between May 2017 and March 2018. The data were collected over two months, from 24 August 2017 to 24 October 2017. The response rate was 97.3% (2801 respondents).

3.3 WHO STEPS Instrument and data collection

The WHO STEPS Instrument for NCD risk factor surveillance was used for data collection.³³ Step 1 included all core and expanded items. Step 2 also included all core and expanded items. Step 3 included all core measurements only. In addition, three optional modules – “Tobacco policy”, “Violence and injury” and “Mental health/suicide” – were added to the survey. Translation was made into the Azerbaijani language.

In Step 1, demographic information and behavioural measurements were collected. The corresponding questionnaire included data on tobacco use, alcohol consumption, diet, dietary salt, physical activity, history of raised BP, history of diabetes, history of raised total cholesterol, history of CVDs, lifestyle advice and cervical cancer screening (for women only).

In Step 2, physical measurements were collected. These included BP, height and weight, waist and hip circumference, and heart rate.

In Step 3, biochemical measurements were collected. These included blood glucose, blood lipids, urinary sodium and creatinine.

Interviewers used show cards adapted to the local context when asking questions about tobacco use, alcohol consumption and diet. Six show cards were developed that illustrated typical local tobacco products; three show cards illustrated common servings/measures of alcohol; and six show cards illustrated examples of fruits, vegetables and juices.

Information for Step 1 and Step 2 was collected within the household setting. Regional executive power authorities allocated personnel who assisted the survey teams in locating households and establishing initial contact. During visits, interviewers gave survey participants instructions on taking urine samples, together with a urine container. Step 3 biochemical measurements



7700
households were
included in the survey

(except urinary sodium and creatinine) were made in specially allocated medical facilities, which survey participants visited on the following morning. In the case of distant villages, the survey team visited participants again on the following morning to take biochemical measurements (except urinary sodium and creatinine) within the household setting.

The results of biochemical analyses (except urinary sodium and creatinine) were recorded on a tablet computer. Urine samples were analysed centrally by the company EuroLab. As per the signed contract, the company was responsible for delivery of urine samples and their analysis. EuroLab recorded the results of analyses of urine samples in a separate database. This database was merged with the survey database after all urine analyses had been completed. The merging was carried out using QR (Quick Response) codes that were unique to each participant.

Every survey team had a tablet (Samsung Galaxy Tab 4 8.0) which was equipped with the STEPS software package provided by WHO. The software had built-in range checks as well as skip patterns and was used for recording survey data. QR codes were assigned to all participants in order to uniquely identify them within the database. The survey data were accumulated on a distant server provided by WHO.

Four supervisors were assigned to monitor the field work and facilitate the data collection process, which was monitored on a constant basis. Geolocation software allowed monitoring to be conducted at the level of individual household. Information on the course of the fieldwork was shared with all interested organizations.

3.4 Data downloading and analysis

A WHO expert conducted training on data analysis for the team of the Public Health and Reforms **Centre** responsible for data analysis and reporting. The training took place on 12–16 December 2017.

Data cleaning was conducted in accordance with WHO recommendations. It was mainly focused on exclusion of duplicate records, which were caused by unstable internet conditions in rural areas.

After the database had been approved by the WHO expert, it was exported in Excel format. There were three Excel files, each holding separate data for Steps 1, 2 and 3. All three files were merged to constitute the final database for analysis. Results were calculated as means or percentages with corresponding 95% CIs.

The analyses were carried out using Epi Info version 3.5.3 software.

3.5 Ethical considerations

Interviewers had to obtain informed consent from survey participants before data collection. There were two consent forms to be signed by participants – one for Step 1 and 2, the other for Step 3. All signed forms are stored in the archive of the Public Health and Reforms Centre. Access to the archive is restricted to authorized personnel only.

> 4. Survey results

4.1 Demographic indicators

This section of the report presents the findings and data analysis results of the information gathered on demographic indicators such as age, gender, education, marital status, ethnicity, occupation, and household income of survey respondents.

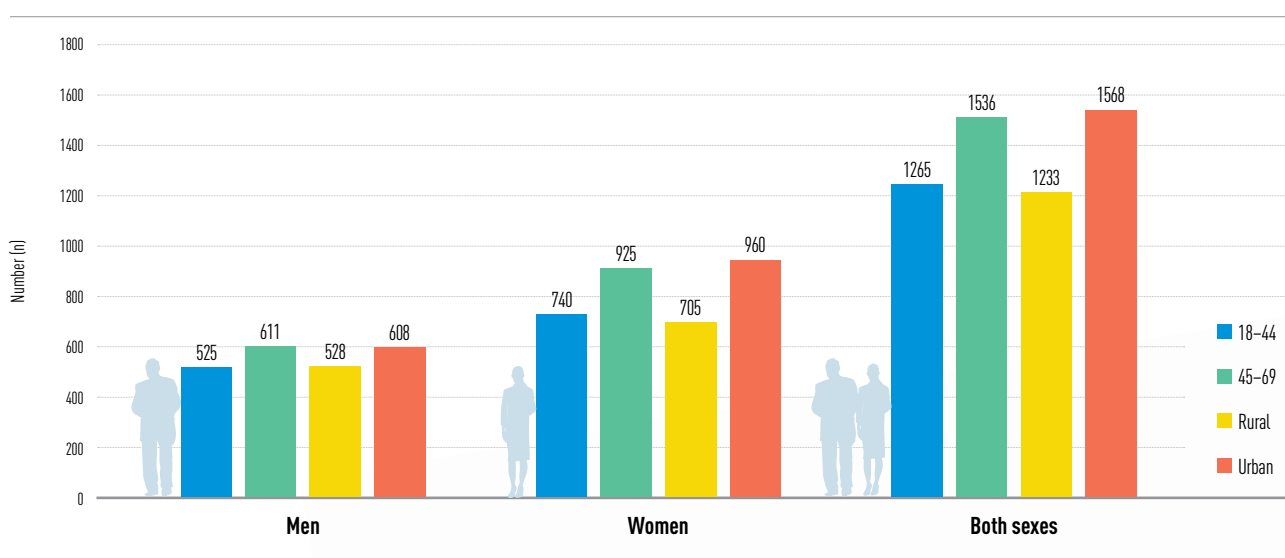
Table 2 presents the distribution of study participants by gender and age groups. The survey population consisted of 2801 respondents aged 18–69 years, representing all administrative units in the Republic of Azerbaijan (excluding the Nakhchivan Autonomous Republic and occupied territories, which did not participate in the survey). Of the 2801 respondents, a greater proportion were female than male: 1665 women (59.4%) compared to 1136 men (40.6%). Of the respondents, 45.2% were in the 18–44 age group (1265 individuals), 54.8% in the 45–69 age group (1536 individuals).

Age group (years)	Men (%)	Women (%)	Both sexes (%)
18–44	41.5	58.5	100
45–69	39.8	60.2	100
18–69	40.6	59.4	100

Table 2. Distribution of respondents, by age and sex

In terms of residential setting, 1568 people were from urban areas (56.0%) and 1233 from rural areas (44.0%) (Fig. 2).

Fig. 2. Distribution of respondents, by age, sex and setting



Of all survey respondents, 92.8% were Azerbaijani, 3.1% Talish, 2.1% Lezgi, and 2.0% from other ethnic groups.

A total of 73.5% of the study population were married, 13.3% had never been married, 9.4% were widowed, 2.0% were divorced, 0.3% were cohabitating and 1.5% were separated (Table 3). The proportion of respondents who had never been married was higher among men (16.2%) than women (11.3%). The proportion of people divorced was 3.6 times higher among women (2.9%) than among men (0.8%), while the proportion of people widowed was four times higher among women (13.5%) than among men (3.4%).

Table 3. Marital status of respondents, by sex

Sex	Never married (%)	Currently married (%)	Separated (%)	Divorced (%)	Widowed (%)	Cohabiting (%)
Men	16.2	78.7	0.7	0.8	3.4	0.3
Women	11.3	69.9	2.0	2.9	13.5	0.3
Both sexes	13.3	73.5	1.5	2.0	9.4	0.3

The mean number of years spent in education was 11.6, with men spending longer in education than women (12.1 and 11.2 years, respectively) (Table 4). The younger age group (18–44) tended to have slightly more years of schooling than the older age group (45–69) (11.7 and 11.4 years, respectively).

Table 4. Mean number of years spent in education, by age and sex

Age group (years)	Men (years)	Women (years)	Both sexes (years)
18–44	12.0	11.5	11.7
45–69	12.1	11.0	11.4
18–69	12.1	11.2	11.6

42.8% of respondents reported that they had completed college/university (Table 5). The proportion of female respondents who did not have any formal schooling was greater than that of male respondents (0.8% versus 0.4%). Comparison of education level by sex showed that men were more likely to have completed a university or postgraduate degree, while women were more likely to have completed high school or secondary school. Interestingly, the highest proportion of college/university-educated people was observed in the 45–69 age group, and this finding was the same for both sexes.

Table 5. Level of education attained, by sex

Sex	No formal schooling (%)	Less than primary school (%)	Primary school completed (%)	Secondary school completed (%)	High school completed (%)	College/university completed (%)	Postgraduate degree completed (%)
Men	0.4	0.1	0.8	8.8	38.8	49.2	1.8
Women	0.8	0.8	3.1	12.3	43.4	38.4	1.2
Both sexes	0.7	0.5	2.2	10.9	41.5	42.8	1.5

Less than half of respondents (42.5%) were employed (Table 6). There were more than twice as many working men (60.9%) as working women (29.9%). Only 22.1% of respondents were government employees, 13.9% were non-government employees, and 6.5% were self-employed. Around 42% of female respondents were housewives.

Sex	Government employee (%)	Non-government employee (%)	Self-employed (%)	Unpaid (%) ^a
Men	21.5	25.6	13.8	39.1
Women	22.6	5.8	1.5	70.1
Both sexes	22.1	13.9	6.5	57.5

^a“Unpaid” includes persons who are non-paid, students, homemakers, retired and unemployed.

One in every six respondents was unemployed despite being able to work. The proportion of such people was twice as great among men as among women (23.0% versus 11.4%) and decreased with age.

Of 2801 respondents, 2246 (80.1%) responded to the household income question. The average per capita annual income was 1800 Azerbaijani manat.

4.2 Tobacco use

Tobacco use was measured by asking respondents separate sets of questions to gather information on use of smoked tobacco products and smokeless tobacco use. Respondents were grouped into current smokers and non-smokers.

Current smokers were respondents who had smoked any tobacco products (such as cigarettes, cigars and hand-rolled tobacco) in the past 30 days. Current smokers comprised daily smokers and non-daily smokers. Daily smokers were those who smoked tobacco products every day; non-daily smokers were those who smoked tobacco products but not on a daily basis. Non-smokers comprised those who had never smoked tobacco products and those who had quit smoking – i.e. former smokers. Categorization of smoking status in such groups actually facilitates analysis and understanding of the addictive characteristics of tobacco.

The percentage of current smokers of all tobacco products among all respondents was 24.0% (21.9–26.1). Almost one in every two men was a current smoker, whereas only 0.2% of women (four individuals altogether) reported smoking at the time of the interview. Considering the very low prevalence of smoking among female respondents, more detailed information on smoking is presented below for men than for women. The percentage of current smokers among men was higher in the younger age group (49.3%; 44.3–54.3) than in the older age group (47.8%; 43.3–52.3) (Table 7).

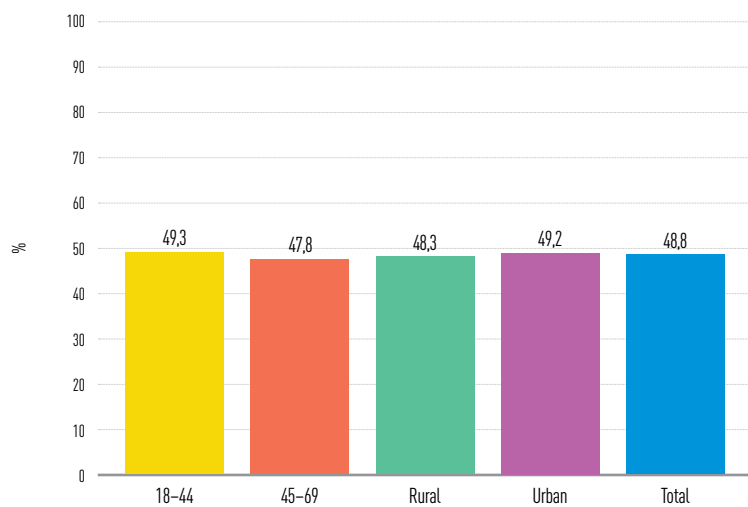
Table 6. Employment status, by sex

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	49.3	44.3–54.3	0.2	0.0–0.4	24.8	22.0–27.6
45–69	47.8	43.3–52.3	0.3	0.0–0.7	22.7	20.1–25.3
18–69	48.8	45.1–52.5	0.2	0.0–0.4	24.0	21.9–26.1

Table 7. Percentage of current smokers, by age and sex

Fig. 3 shows no significant difference in the percentage of current male smokers in urban and rural settings (49.2%; 44.1–54.4 versus 48.3%; 42.8–53.8).

Fig. 3. Percentage of men who were current smokers, by age and setting



Overall, 48.8% [45.1–52.5] of men were current smokers, with 47.2% [43.5–50.9] daily smokers and 1.6% [0.8–2.4] non-daily smokers. It was also reported that 41.4% [37.6–45.2] of men had never smoked and 9.8% [7.9–11.8] were former smokers. The number of former smokers was substantially higher among older respondents (Table 8).

Table 8. Smoking status of men, by age (%)

Age group (years)	Current smokers				Non-smokers			
	Daily (%)	95% CI	Non-daily (%)	95% CI	Former smoker (%)	95% CI	Never smoker (%)	95% CI
18–44	47.6	42.6–52.6	1.7	0.6–2.9	6.4	4.2–8.6	44.3	39.2–49.4
45–69	46.4	41.9–51.0	1.4	0.4–2.3	16.0	12.7–19.3	36.1	31.6–40.7
18–69	47.2	43.5–50.9	1.6	0.8–2.4	9.8	7.9–11.8	41.4	37.6–45.2

The survey showed that men started smoking, on average, at 18.7 years (18.3–19.2). There was almost no difference between male age groups (18–44 and 45–69) with respect to the mean age at which they started smoking (18.3 versus 19.4, respectively) (Table 9).

Age group (years)	Men		Women		Both sexes	
	Mean age (years)	95% CI	Mean age (years)	95% CI	Mean age (years)	95% CI
18–44	18.3	17.8–18.9	21.0	–	18.3	17.8–18.9
45–69	19.4	18.6–20.3	15.6	–	19.4	18.6–20.2
18–69	18.7	18.3–19.2	18.4	–	18.7	18.3–19.2

The mean duration of smoking among male daily smokers was 20.4 years (19.1–21.7). The mean duration was higher for older respondents than for younger ones (33.9 versus 13.1 years) (Table 10).

Table 9. Mean age of smoking initiation, by age and sex

Age group (years)	Men		Women		Both sexes	
	Mean duration (years)	95% CI	Mean duration (years)	95% CI	Mean duration (years)	95% CI
18–44	13.1	12.0–14.2	3.8	–	13.1	12.0–14.1
45–69	33.9	32.8–34.9	34.1	–	33.9	32.8–34.9
18–69	20.4	19.1–21.7	18.3	–	20.4	19.1–21.7

The great majority of male daily smokers (95.1%; 91.3–98.9) reported using manufactured cigarettes.

Table 10. Mean duration of smoking, by age and sex

The percentage of current male smokers using different smoking products was as follows: manufactured cigarettes – 94.9%; cigars – 5.6%; shisha – 4.8%; hand-rolled cigarettes – 1.8%; pipe – 1.8%; and others – 1.3%.

The mean number of manufactured cigarettes smoked per day by daily smokers was 18.9 (17.6–20.2) for all age groups. Men in the 45–69 age group smoked more cigarettes per day than those in the 18–44 age group (21.3 versus 17.9) (Fig. 4).

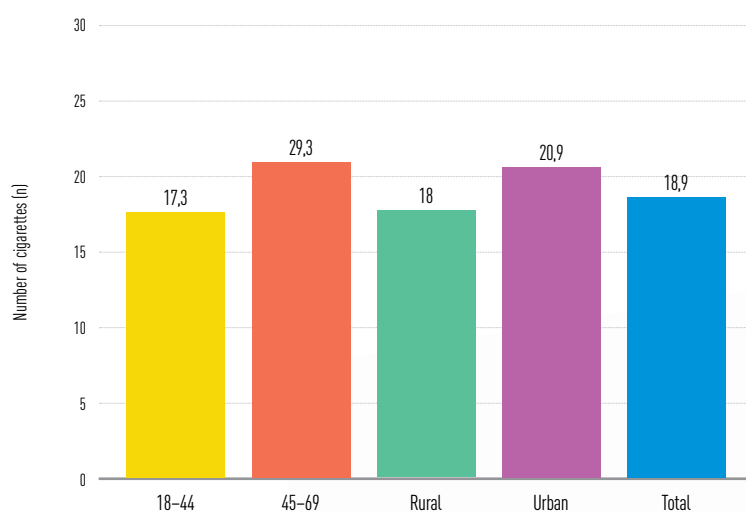
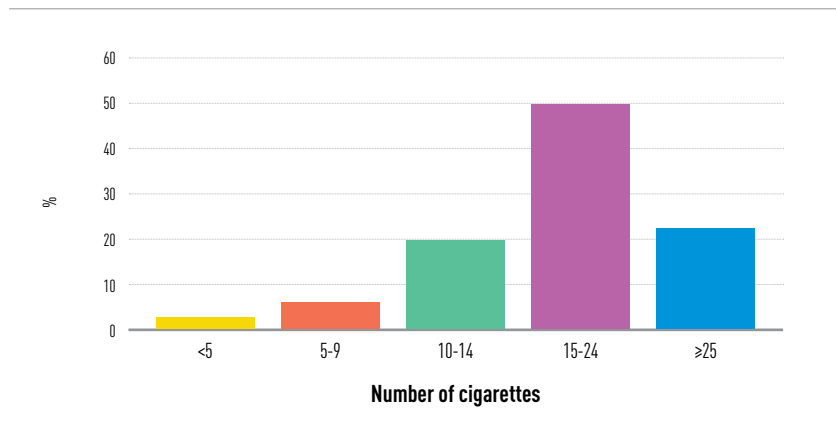


Fig. 4. Mean number of manufactured cigarettes smoked by male daily smokers, by age and setting

Half of male daily smokers (49.8%) smoked 15–24 cigarettes per day (Fig. 5). Almost a third (31.1%) of men in the 45–69 age group smoked 25 or more cigarettes a day.

Fig. 5. Percentage of male daily smokers smoking manufactured or hand-rolled cigarettes per day, by number of cigarettes smoked



About half (49.5%; 43.9–55.1) of currently smoking male respondents had tried to stop smoking during the previous year. Among current male smokers who had visited a doctor or other health worker in the past 12 months, only 31.2% (24.1–38.3) had been advised to stop smoking (Table 11).

Table 11. Percentage of current smokers advised by a doctor to stop smoking, by age and sex^a

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	22.8	14.4–31.1	100.0	100.0–100.0	23.0	14.7–31.4
45–69	46.2	35.0–57.4	72.8	36.5–100.0	46.5	35.3–57.7
18–69	31.2	24.1–38.3	82.8	45.0–100.0	31.5	24.3–38.7

^a The values for women need to be treated with caution as very low levels of current smoking were recorded among women.

Among all male respondents, only 0.2% (0.0–0.5) were current users of smokeless tobacco.

Table 12. Percentage of population exposed to second-hand smoke at home during the past 30 days, by age and sex

Of all respondents, 24.9% had been exposed to second-hand smoke at home over the previous 30 days. Surprisingly, men were more exposed than women (26.5% versus 23.3%). The overall rate of exposure to second-hand smoke at home for both sexes was higher in the younger age group than the older (26.6% versus 22.1%) (Table 12).

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	29.2	23.6–34.8	24.0	19.3–28.6	26.6	22.4–30.8
45–69	21.8	17.7–25.8	22.4	18.4–26.4	22.1	18.9–25.3
18–69	26.5	22.3–30.7	23.3	19.6–27.1	24.9	21.6–28.2

In contrast, in the workplace only 18.3% (15.0–21.6) of respondents of both sexes had been exposed to second-hand smoke over the previous

30 days. Predictably, men were more exposed than women (28.4% versus 7.7%). Among all respondents, exposure was higher in the younger age group (19.7%) than the older age group (16.0%) (Table 13).

Table 13. Percentage of population exposed to second-hand smoke in the workplace during the past 30 days, by age and sex

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	29.9	22.8–37.0	8.4	5.5–11.2	19.7	15.4–23.9
45–69	25.7	19.9–31.6	6.7	3.8–9.6	16.0	12.3–19.6
18–69	28.4	23.0–33.9	7.7	5.5–9.9	18.3	15.0–21.6

4.2.1 Tobacco policy

Tobacco policy was assessed as optional modules. Participants were asked whether they had seen any information on the dangers of smoking cigarettes or information that encouraged quitting smoking in print (newspapers and magazines) or electronic media (TV and radio).

During the 30 days preceding the survey, 31.9% (27.8–36.0) of respondents had noticed information about the dangers of smoking or that encouraged quitting in newspapers or magazines; 66.6% (61.9–71.3) had noticed such information on television; and 33.6% (29.0–38.1) had noticed such information on the radio. Differences between age groups (18–44 and 45–69) were not noteworthy, but there were slight differences between gender groups with respect to all mass media sources: men noticed these warning messages more often than women.

Among current smokers, 89.4% (85.7–93.1) of respondents had noticed health warnings on cigarette packets during the 30 days preceding the survey. Of this group, 41.4% (35.7–47.1) had been influenced to think about quitting by the health warnings they had seen on cigarette packets.

Fig. 6 shows the percentage of all respondents who had noticed different kinds of cigarette promotion over the past 30 days.

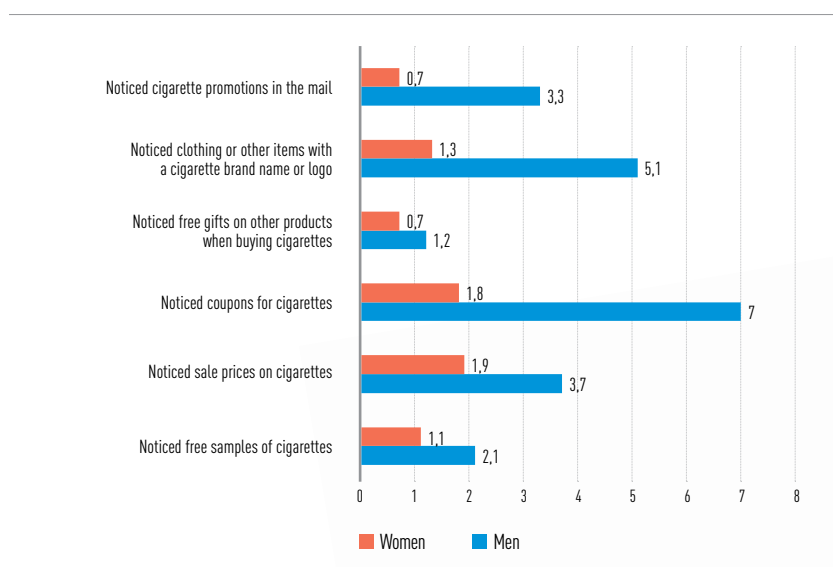


Fig. 6. Percentage of population noticing different types of cigarette promotion, by sex

4.3 Alcohol consumption

Respondents were asked to indicate their alcohol consumption status – that is, if they consumed alcohol, and if so, the frequency and quantity of their alcohol consumption.

Of all respondents, 29.7% reported that they had consumed an alcoholic drink at some time in their lives; the remaining 70.3% were lifetime abstainers. The proportion of lifetime abstainers was twice as great among women as among men – 94.5% (40.3–50.1) versus 45.2% (92.8–96.2).

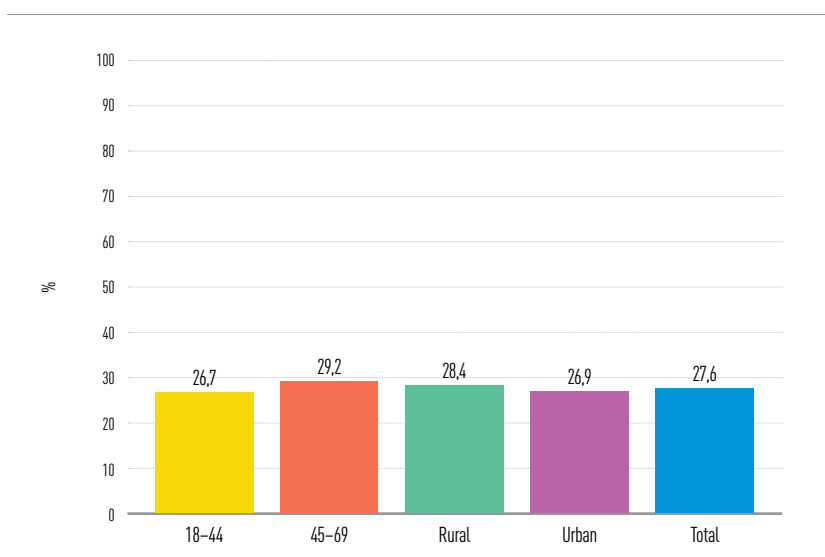
Respondents who reported that they had consumed alcohol within the past 30 days were defined in the survey as current drinkers; they accounted for 13.9% (12.1–15.8) of all respondents. Current drinking occurred almost exclusively among males – 27.6% (23.9–31.3), as opposed to 0.8% (0.4–1.3) among females. Because of the low number of women consuming alcohol within the past year, the results for women are omitted from some of the tables below. There was a higher proportion of current male drinkers in the older age group (29.2%) than in the younger age group (26.7%) (Table 14).

Table 14. Alcohol consumption status among men, by age

Age group (years)	Current drinker (past 30 days) (%)	95% CI	Drank in past 12 months, not current (%)	95% CI	Abstainer over past 12 months (%)	95% CI	Lifetime abstainer (%)	95% CI
18–44	26.7	22.0–31.4	12.8	8.9–16.8	10.3	7.4–13.2	50.2	44.4–56.0
45–69	29.2	25.0–33.5	13.9	10.6–17.2	20.6	16.5–24.7	36.2	31.0–41.5
18–69	27.6	23.9–31.3	13.2	10.4–16.1	14.0	11.4–16.6	45.2	40.3–50.1

A slightly higher percentage of current male drinkers (men who had consumed alcohol in the past 30 days) was observed in rural areas – 28.4% (23.2–33.7), as opposed to 26.9% (21.6–32.0) in urban areas (Fig. 7).

Fig. 7. Percentage of men consuming alcohol, by age and setting



The percentage of male former drinkers (men who had not drunk during the previous 12 months) who had stopped drinking for health reasons,

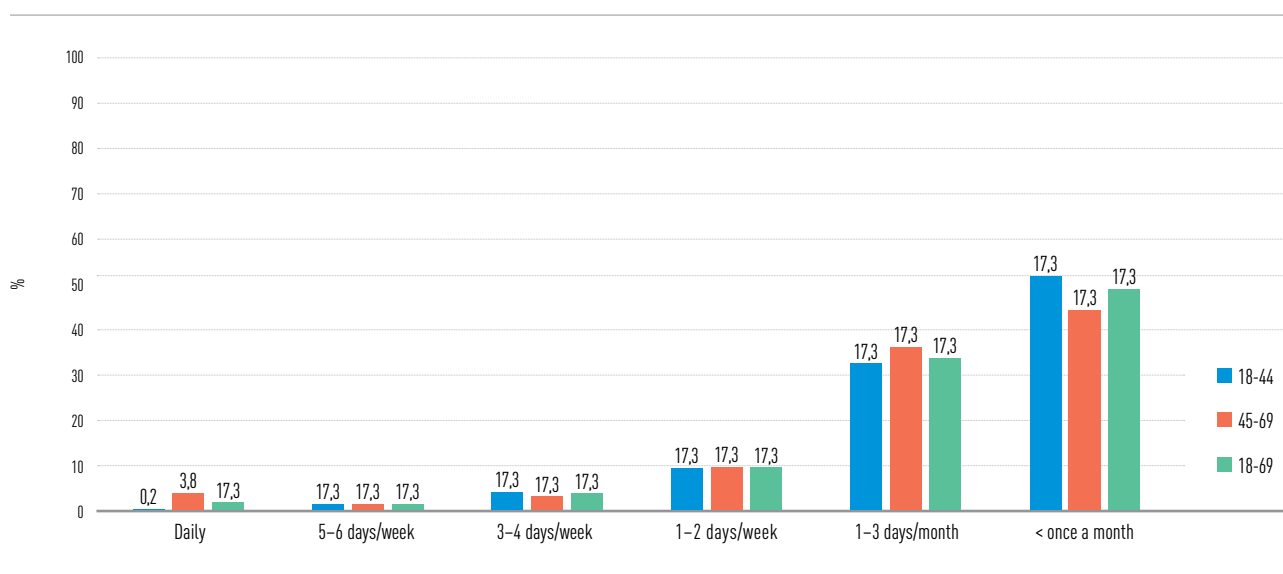
such as negative impact on their health or advice from a doctor, was 41.2% (31.4–50.9); among female former drinkers, the figure was 18.5% (4.1–32.8). The proportion of men who stopped drinking for health reasons increased from 36.8% [22.8–50.8] in the 18–44 age group to 45.1% (34.1–56.1) in those aged 45–69 years (Table 15).

Table 15. Percentage of population who stopped drinking for health reasons, by age and sex

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	36.8	22.8–50.8	20.1	0.7–39.5	32.9	19.8–46.1
45–69	45.1	34.1–56.1	16.1	2.4–29.8	40.7	31.1–50.3
18–69	41.2	31.4–50.9	18.5	4.1–32.8	36.8	27.8–45.9

Among male respondents who had drunk in the previous 12 months, 1.7% (0.5–2.8) drank alcohol every day. Half (49.4%; 43.4–55.4) of respondents of both sexes consumed alcohol less than once a month. Only 37 women answered this question, and of these, 92.8% (86.6–98.9) drank alcohol less than once a month. There were no obvious differences between age groups in the proportion of respondents who drank alcohol on 5–6 days a week or 1–2 days a week (Fig. 8).

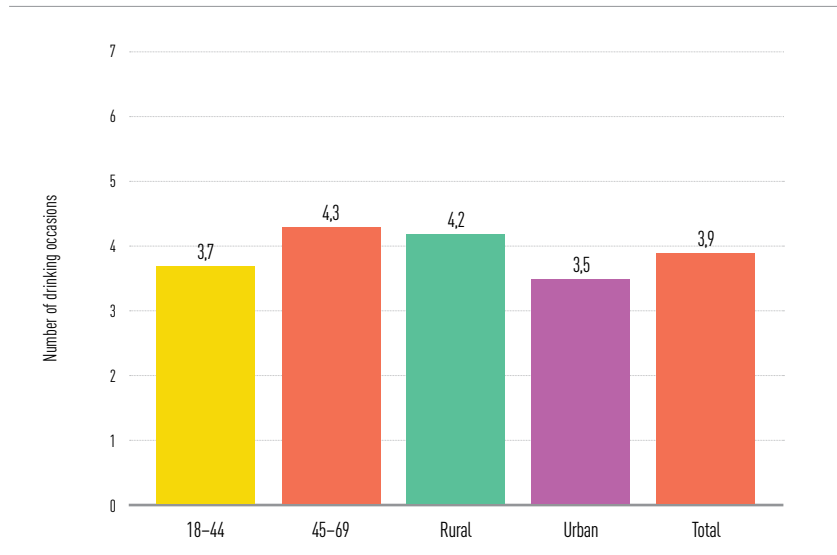
Fig. 8. Frequency of alcohol consumption in the past 12 months (both sexes), by age



In the previous 30 days, current male drinkers had consumed at least one drink on 3.9 occasions (3.3–4.5); among women, the corresponding figure was 1.8 occasions (1.0–2.5). For both sexes, the average number of drinking occasions was higher in the 45–69 age group (4.3) than in the 18–44 age group (3.7).

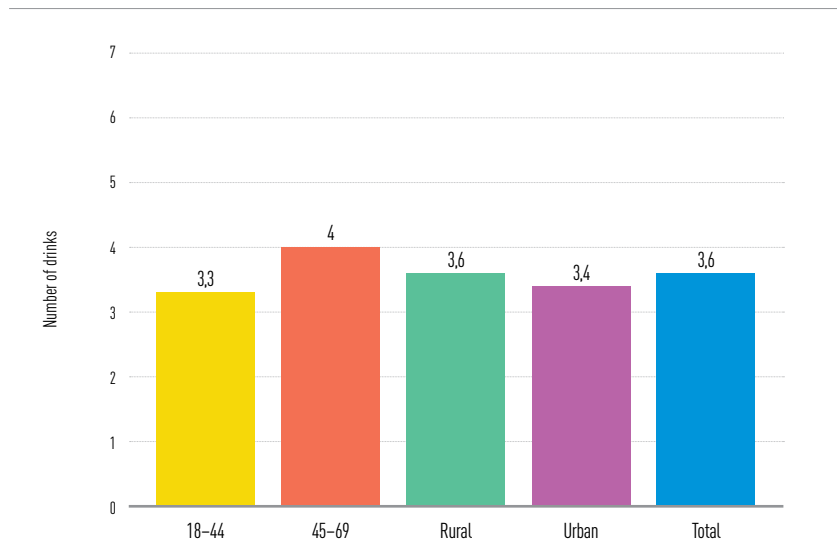
The average number of drinking occasions in the previous 30 days was higher in the rural population (4.2; 3.4–5.0) than in the urban population (3.5; 2.8–4.3) (Fig. 9).

Fig. 9. Mean number of drinking occasions in the past 30 days among current drinkers (both sexes), by age and setting



Current drinkers were asked about the average number of standard drinks consumed on a drinking occasion. Current drinkers of both sexes consumed, on average, 3.6 drinks per occasion (3.2–3.9), with men consuming 3.6 drinks (3.2–3.9). Men in the 45–69 age group consumed, on average, almost three times as many standard drinks per drinking occasion as women. The mean number of standard drinks per drinking occasion was slightly higher in the rural population (3.6; 3.1–4.1) than in the urban population (3.4; 2.9–3.9) (Fig. 10).

Fig. 10. Mean number of standard drinks per drinking occasion among current drinkers (both sexes), by age and setting



As shown in Table 16, 70.5% of all current drinkers (64.0–77.0) were at the low-end level of alcohol consumption; 13.3% of men (8.6–17.9) and 11.4% of women (0.0–29.1) had an intermediate level of alcohol consumption; and 16.3% of men (11.3–21.3) and 15.3% of women (0.0–46.1) had a high-end level of alcohol consumption. The differences between age groups were not significant for either sex.

Sex	High end (%)	95% CI	Intermediate (%)	95% CI	Low end (%)	95% CI
Men	16.3	11.3–21.3	13.3	8.6–17.9	70.4	63.8–77.1
Women	15.3	0.0–46.1	11.4	0.0–29.1	73.4	40.6–100.0
Both sexes	16.3	11.3–21.2	13.2	8.6–17.8	70.5	64.0–77.0

The mean maximum number of standard drinks consumed on one occasion in the past 30 days by male respondents was 4.4 (3.9–4.8); among women, the corresponding figure was 1.4 (1.0–1.7) (Table 17).

Table 16. Percentage of current drinkers with different drinking levels, by sex

Age group (years)	Men		Women		Both sexes	
	No. of drinks	95% CI	No. of drinks	95% CI	No. of drinks	95% CI
18–44	4.0	3.4–4.6	1.4	0.9–1.9	3.9	3.4–4.4
45–69	4.9	4.2–5.6	1.3	0.9–1.8	4.8	4.2–5.5
18–69	4.4	3.9–4.8	1.4	1.0–1.7	4.3	3.8–4.7

11% of men (8.4–13.6) and only 0.2% of women (0.0–0.4) reported that they had consumed six or more drinks (“heavy episodic drinking”) at least once during the previous 30 days.

Table 17. Mean maximum number of standard drinks consumed on one occasion in the past 30 days, by age and sex

Among current drinkers of both sexes, the mean number of times on which six or more drinks were consumed on a single occasion in the past 30 days was 1.3 (0.0–0.2).

Table 18 shows the frequency of alcohol consumption in the past seven days for respondents of both sexes. 24.9% (18.7–31.1) of current drinkers reported that they had consumed no alcohol in the past seven days.

Table 18. Frequency of alcohol consumption in the past seven days, by sex

Sex	Daily (%)	95% CI	5–6 days (%)	95% CI	3–4 days (%)	95% CI	1–2 days (%)	95% CI	0 days (%)	95% CI
	Men	1.9	0.4–3.3	1.4	0.1–2.7	15.8	10.1–21.5	56.9	49.9–64.0	24.1
Women	–	–	–	–	15.3	0.0–46.1	34.0	0.9–67.1	50.7	17.1–84.4
Both sexes	1.8	0.4–3.2	1.3	0.1–2.6	15.8	10.2–21.4	56.2	49.3–63.1	24.9	18.7–31.1

The number of standard drinks consumed per day in the past seven days by current drinkers was, on average, only 0.2 (0.1–0.3).

The percentage of male respondents, among current drinkers, who had consumed unrecorded alcohol (homebrewed alcohol, alcohol brought over the border, alcohol not intended for drinking, or other untaxed alcohol) during the past seven days was 5.3% (2.4–8.3).

The number of standard drinks of unrecorded alcohol consumed per day in the past seven days for both sexes was, on average, only 0.1 (0–0.3).

Among male drinkers who had consumed alcohol in the past 12 months, the percentage who had never needed a first drink in the morning to get going

after a heavy drinking session over the past 12 months was 96.2% (94.2–98.1).

Of all respondents, 95.0% (93.7–96.3) had never had any problems with their family or partner over the past 12 months because of someone else's drinking.

4.4 Diet

The fruit and vegetable consumption of the survey population was assessed using the indicators "frequency of fruit and vegetable consumption per week" and "average daily consumption", stratified by gender, age and location of residency.

The mean number of days per week on which fruits and vegetables were consumed was, respectively, 5.1 (5.0–5.2) and 5.9 (5.8–6.0). Women consumed fruits more frequently than men – 5.2 (5.0–5.3) versus 5.0 (4.8–5.2) days per week. Men consumed vegetables, on average, on 5.8 (5.7–6.0) days per week, women on 5.9 (5.8–6.1) days. Consumption of both fruits and vegetables was a little more frequent in the older age group (Tables 19 and 20).

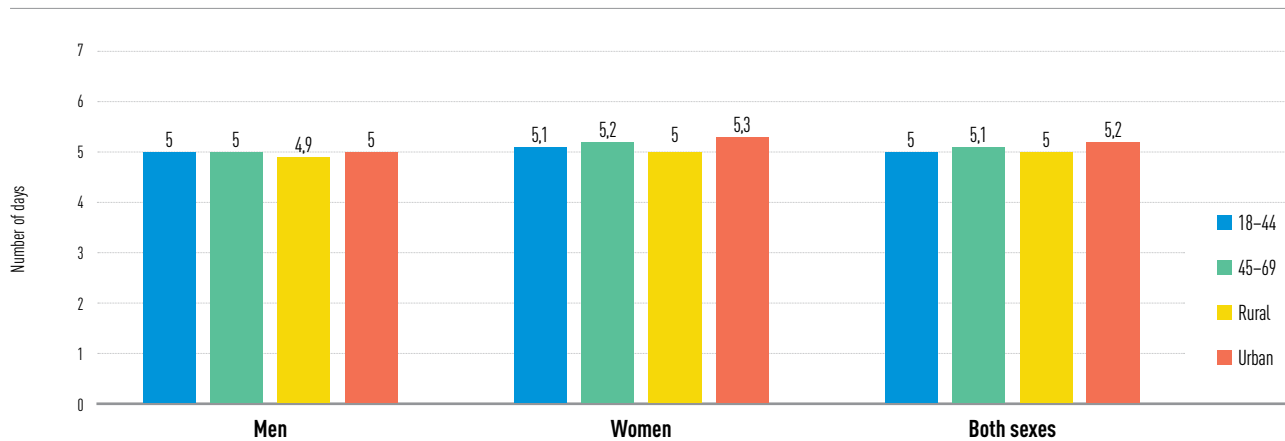
Table 19. Mean number of days on which fruits were consumed in a typical week, by age and sex

Age group (years)	Men		Women		Both sexes	
	No. of days	95% CI	No. of days	95% CI	No. of days	95% CI
18–44	5.0	4.7–5.2	5.1	4.9–5.3	5.0	4.9–5.2
45–69	5.0	4.8–5.2	5.2	5.1–5.4	5.1	5.0–5.3
18–69	5.0	4.8–5.2	5.2	5.0–5.3	5.1	5.0–5.2

Age group (years)	Men		Women		Both sexes	
	No. of days	95% CI	No. of days	95% CI	No. of days	95% CI
18–44	5.7	5.5–5.9	5.9	5.7–6.1	5.8	5.7–6.0
45–69	5.9	5.8–6.1	6.0	5.9–6.1	6.0	5.9–6.1
18–69	5.8	5.7–6.0	5.9	5.8–6.1	5.9	5.8–6.0

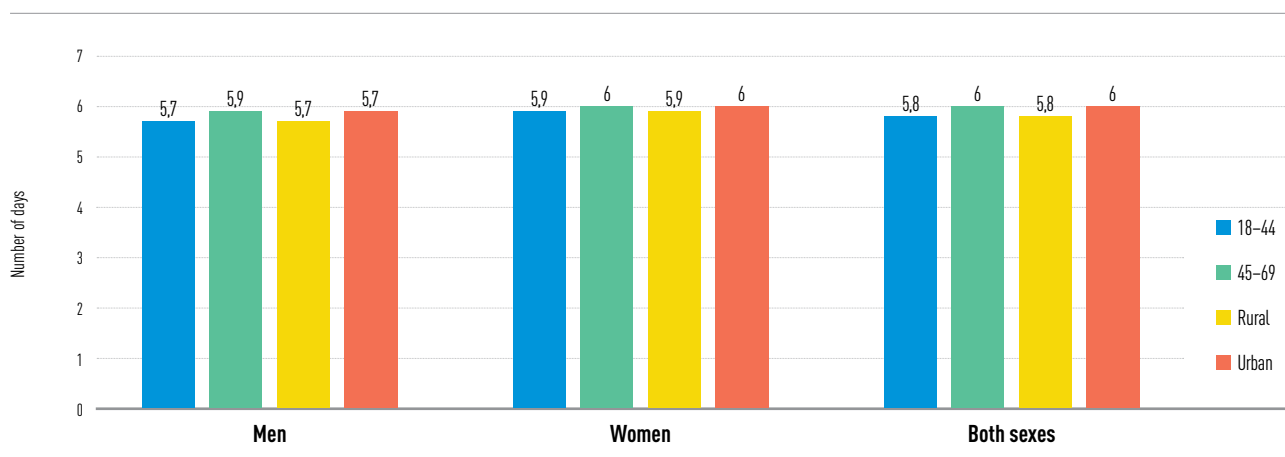
Table 20. Mean number of days on which vegetables were consumed in a typical week, by age and sex

The frequency of fruit consumption was found to be higher in the urban population (5.2 days per week; 5.0–5.3) than in the rural population (5.0 days; 4.8–5.2) (Fig. 11).



In the same way, the urban population consumed vegetables more frequently (6 days per week; 5.8–6.1) than those in rural areas (5.8 days per week; 5.6–6.0) (Fig. 12).

Fig. 11. Mean number of days on which fruits were consumed in a typical week, by age, sex and setting



Women in the 45–69 age group and urban residents consumed more fruits and vegetables than other groups of respondents.

Fig. 12. Mean number of days on which vegetables were consumed in a typical week, by age, sex and setting

The largest proportion of respondents (43.6%; 40.0–47.2) of both sexes consumed 1–2 servings of fruits and/or vegetables per day – 43.7% (39.0–48.3) of men and 43.5% (39.7–47.3) of women. About 6.6% (5.0–8.1) of all respondents reported that they did not consume any fruits or vegetables – 7.5% (5.2–9.8) of men and 5.6% (4.1–7.2) of women. On the other hand, a higher proportion of men than women consumed five or more servings of fruits and/or vegetables per day (25.6% versus 22.7%) (Table 21). Differences between the age groups (18–44 and 45–69 years) were negligible.

Table 21. Percentage of population having various servings of fruits and/or vegetables per day, by sex

Sex	No fruits and/or vegetables (%)	95% CI	1–2 servings (%)	95% CI	3–4 servings (%)	95% CI	≥ 5 servings (%)	95% CI
Men	7.5	5.2–9.8	43.7	39.0–48.3	23.2	20.2–26.3	25.6	21.7–29.5
Women	5.6	4.1–7.2	43.5	39.7–47.3	28.1	25.1–31.1	22.7	19.2–26.2
Both sexes	6.6	5.0–8.1	43.6	40.0–47.2	25.7	23.4–28.1	24.1	21.0–27.2

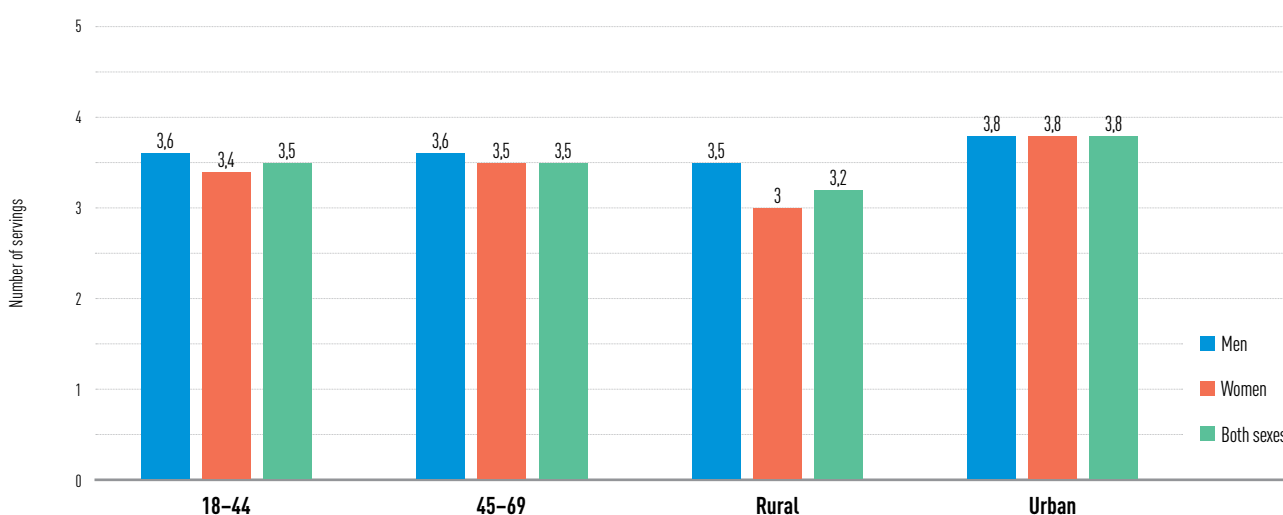
Table 22. Mean number of servings of fruits and/or vegetables on average per day, by age and sex

The number of servings of fruits and/or vegetables consumed on average per day by respondents of both sexes was 3.5 (3.3–3.7) (Table 22).

Age group (years)	Men		Women		Both sexes	
	No. of servings	95% CI	No. of servings	95% CI	No. of servings	95% CI
18–44	3.6	3.3–4.0	3.4	3.2–3.6	3.5	3.3–3.7
45–69	3.6	3.3–3.9	3.5	3.3–3.7	3.5	3.3–3.8
18–69	3.6	3.3–3.9	3.4	3.2–3.6	3.5	3.3–3.7

Fig. 13. Mean number of servings of fruits and/or vegetables on average per day, by age, sex and setting

The number of servings of fruits and vegetables consumed per day was higher among urban residents (3.8 servings; 3.5–4.1) than those living in rural areas (3.2 servings; 3.0–3.5) (Fig. 13).



The percentage of those eating less than five servings of fruits and/or vegetables per day on average for all respondents was 75.9% (72.8–79.0) (Table 23).

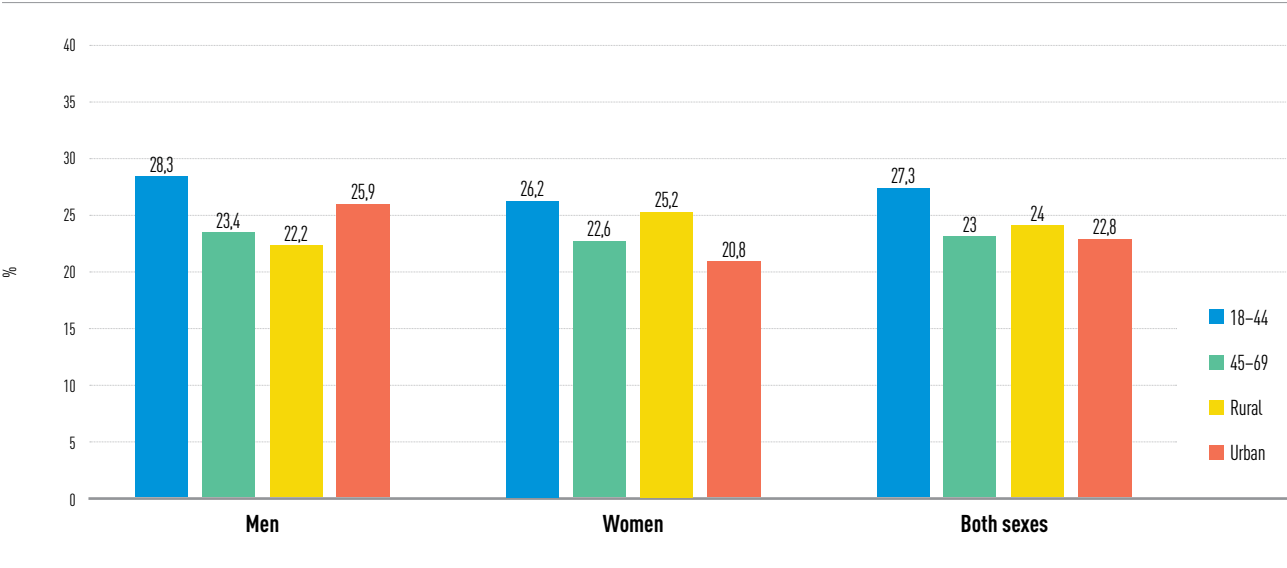
Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	74.1	69.3–79.0	78.5	74.2–82.8	76.3	72.8–79.9
45–69	74.9	70.5–79.3	75.3	71.4–79.3	75.1	71.5–78.7
18–69	74.4	70.5–78.3	77.3	73.8–80.8	75.9	72.8–79.0

Table 23. Percentage of population consuming less than five servings of fruits and/or vegetables on average per day, by age and sex

The knowledge, attitude and behaviour of Azerbaijani adults towards dietary salt consumption were assessed using structured questions. The survey found that the percentage of all respondents who always or often added salt or salty sauce to their food before or while eating for both sexes was 25.7% (22.8–28.6); the figure for men was 26.6% (22.6–30.5), for women 24.8% (21.7–28.0).

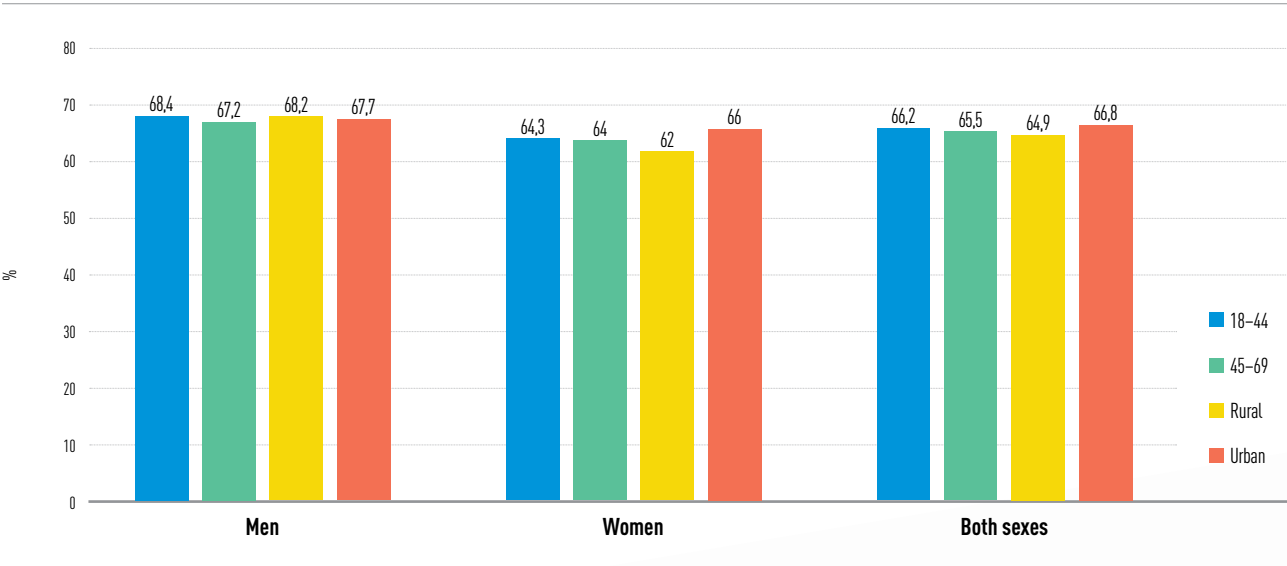
As shown in Fig. 14, there were visible differences between age groups (18–44 and 45–69), sex groups and residential settings.

Fig. 14. Percentage of population adding salt always or often before or while eating, by age, sex and setting



The percentage of all respondents who always or often added salt to their food when cooking or preparing food at home was, for both sexes, 65.9% (61.2–70.6). There were slight differences between age groups, and men added salt to their food more often than women (67.9%; 62.6–73.2 versus 64.2%; 59.1–69.3). Urban residents added salt to their food a little more often than their rural counterparts (Fig. 15).

Fig. 15. Percentage of population adding salt always or often when cooking or preparing food at home, by age, sex and setting



Respondents were asked if they often consumed processed foods high in salt. The prevalence among all survey participants was 26.6% (23.7–29.6). The percentage of men who reported eating processed food high in salt (29.6%; 25.6–33.5) was higher than that of women (23.8%; 20.5–27.1) (Table 24).

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	32.2	26.9–37.5	28.1	23.5–32.8	30.2	26.2–34.1
45–69	24.8	20.5–29.1	16.9	13.9–19.8	20.6	17.7–23.6
18–69	29.6	25.6–33.5	23.8	20.5–27.1	26.6	23.7–29.6

Table 24. Percentage of population always or often consuming processed foods high in salt, by age and sex

There was a significant decrease in the proportion of respondents eating such foods with age. Also, a significant difference was found between rural and urban residents, with a higher prevalence in the latter (21.5%; 17.0–26.0 versus 30.9%; 27.1–34.8).

Table 25. Percentage of population thinking they consume too much or far too much salt, by age and sex

Around one in five (21.9%; CI: 19.6–24.2) of all respondents thought that they consumed too much or far too much salt. The percentage of men with this opinion was a little higher than that of women. No significant differences between age groups were revealed (Table 25).

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	21.8	17.4–26.2	23.0	19.5–26.4	22.4	19.5–25.3
45–69	23.3	19.3–27.2	19.1	15.9–22.3	21.1	18.3–23.9
18–69	22.3	19.0–25.7	21.5	18.8–24.1	21.9	19.6–24.2

Table 26. Percentage of population thinking that consuming too much salt could cause serious health problem, by age and sex

The proportion of men who thought that they consumed too little or far too little salt was higher than that of women (13.5% versus 10.6%). The percentage of all respondents who thought that they were using “just the right amount” of salt was 66.1% (63.4–68.8).

The percentage of all respondents who thought that consuming too much salt could cause serious health problems was 73.1% (68.8–77.5). The prevalence of women with this belief was higher than that of men (75.1%; 70.6–79.6 versus 71.0%; 66.0–76.0). This belief was more common among older respondents (45–69 years) than younger ones (18–44 years) – 78.9% versus 69.7% (Table 26).

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	67.6	61.8–73.3	71.8	66.4–77.1	69.7	64.8–74.5
45–69	77.2	71.4–83.0	80.5	76.0–85.0	78.9	74.3–83.5
18–69	71.0	66.0–76.0	75.1	70.6–79.6	73.1	68.8–77.5

Although a large proportion of respondents were aware that salt can cause serious health problems, 18.7% of them considered that lowering salt in the diet was not at all important. 37.0% thought it was very important, while 44.3% thought it was somewhat important. The proportion of women who considered lowering salt in their diet to be very or somewhat important was higher (84.1%) than that of men (78.4%) (Table 27).

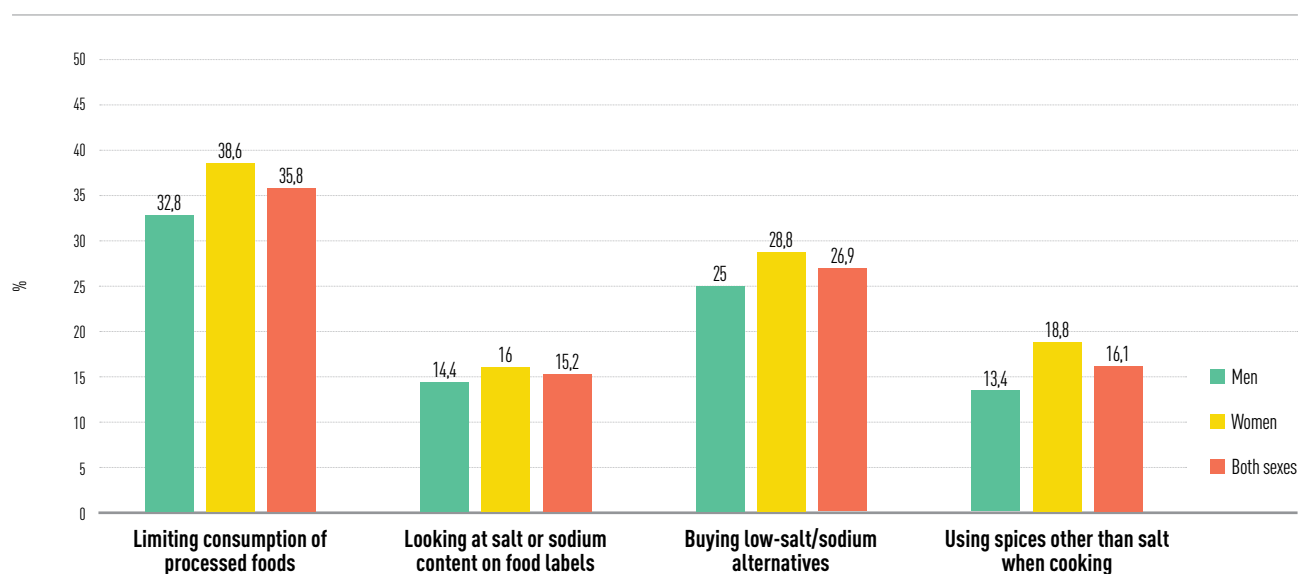
Sex	Very important (%)	95% CI	Somewhat important (%)	95% CI	Not at all important (%)	95% CI
Men	34.5	29.9–39.1	43.9	39.5–48.3	21.6	17.7–25.5
Women	39.3	35.1–43.4	44.8	41.0–48.5	16.0	12.5–19.4
Both sexes	37.0	33.1–40.8	44.3	40.9–47.8	18.7	15.5–21.9

Answers to the question about the importance of lowering salt in the diet were significantly differentiated according to age. Overall, there were no major differences between urban and rural residents of both sexes in their answers to the question, but there were differences in their responses according to gender. For example, 35.7% of male urban residents thought it was very important, in contrast to 33% of rural residents, but more female rural residents believed in the importance of a low-salt diet than their urban counterparts – 40.4% versus 38.4%.

Respondents were asked what actions they took on a regular basis to control salt intake. Just over a third (35.8%; 31.3–40.3) of the study population, male and female, limited consumption of processed foods; 16.1% (12.6–19.6) replaced salt with spices during cooking; 15.2% (12.0–18.4) checked the salt or sodium content on food labels; and 26.9% (23.0–30.8) bought low-salt/sodium alternatives (Fig. 16).

Table 27. Percentage of population thinking that lowering salt in the diet is important, by sex

Fig. 16. Percentage of population regularly taking specific action to control salt intake, by sex



4.5 Physical activity

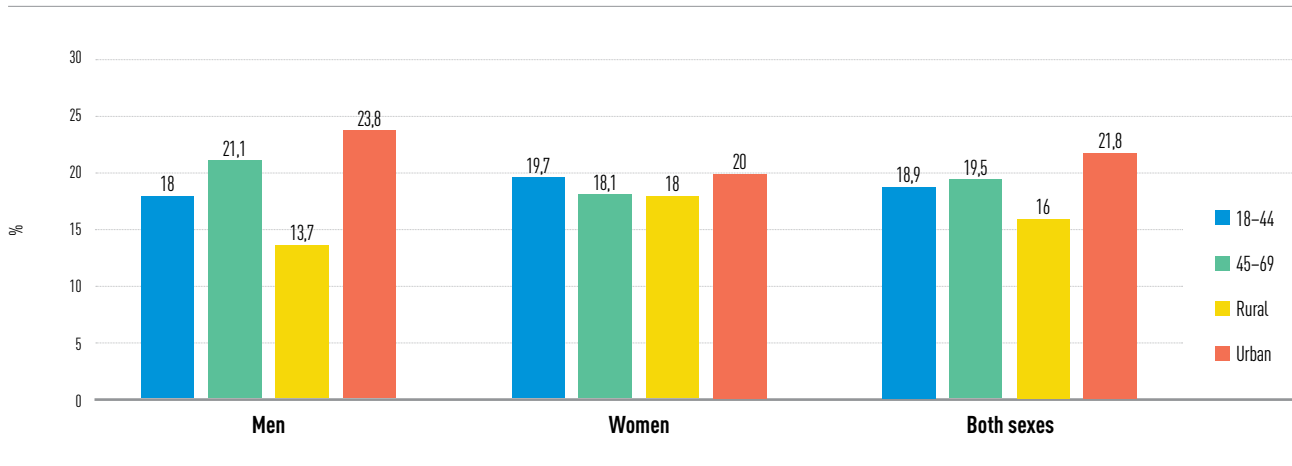
The physical activity of the survey population was assessed by evaluating the intensity and duration of activities undertaken during work, travel and recreation. According to WHO recommendations on physical activity for health, adults should do at least 150 minutes of moderate-intensity physical activity or 75 minutes of vigorous-intensity physical activity per week. Physical activity of respondents was assessed based on the extent to which the WHO recommendations were met.

The survey results showed that only one in five individuals in the study

population (19.1%; 15.9–22.3) failed to meet the WHO recommendations on physical activity for health. This finding (19.1%) was the same for both men (15.3–22.9) and women (15.5–22.6).

Fig. 17. Percentage of population not meeting WHO recommendations on physical activity for health, by sex, age and setting

As shown in Fig. 17, there were slight differences between age groups (18–44 and 45–69) – 18.9% and 19.5%, respectively. However, the differences between the country’s urban and rural populations were more visible, with a higher prevalence in urban areas.

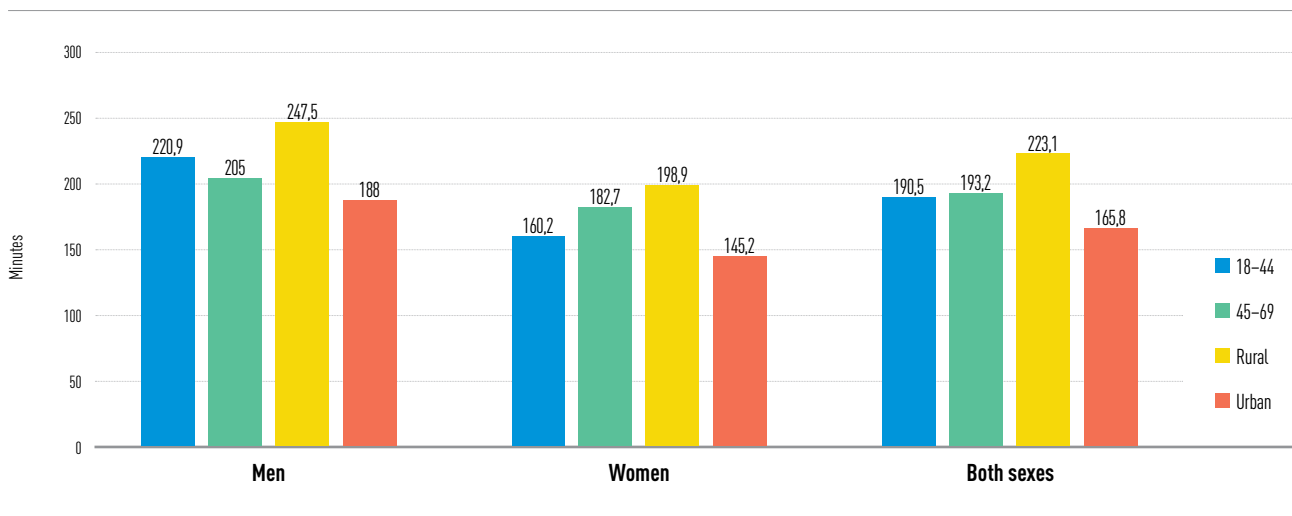


Total physical activity per day included work-related, transport-related and recreation-related activities.

Overall, respondents carried out an average of 191.5 minutes of physical activity per day, with a statistically significant difference between men (215.2 minutes; 192.7–237.7) and women (168.9 minutes; 149.9–187.8).

No significant difference was recorded between age groups of the same sex. The survey showed that individuals in rural areas, both male and female, tended to take more physical activity than their urban counterparts. The highest mean difference was seen in men, with an average of 247.5 minutes (216.0–279.0) of physical activity in the rural population, compared with 188.0 minutes (156.6–220.0) in urban areas (Fig. 18).

Fig. 18. Mean number of minutes of total physical activity per day, by sex, age and setting



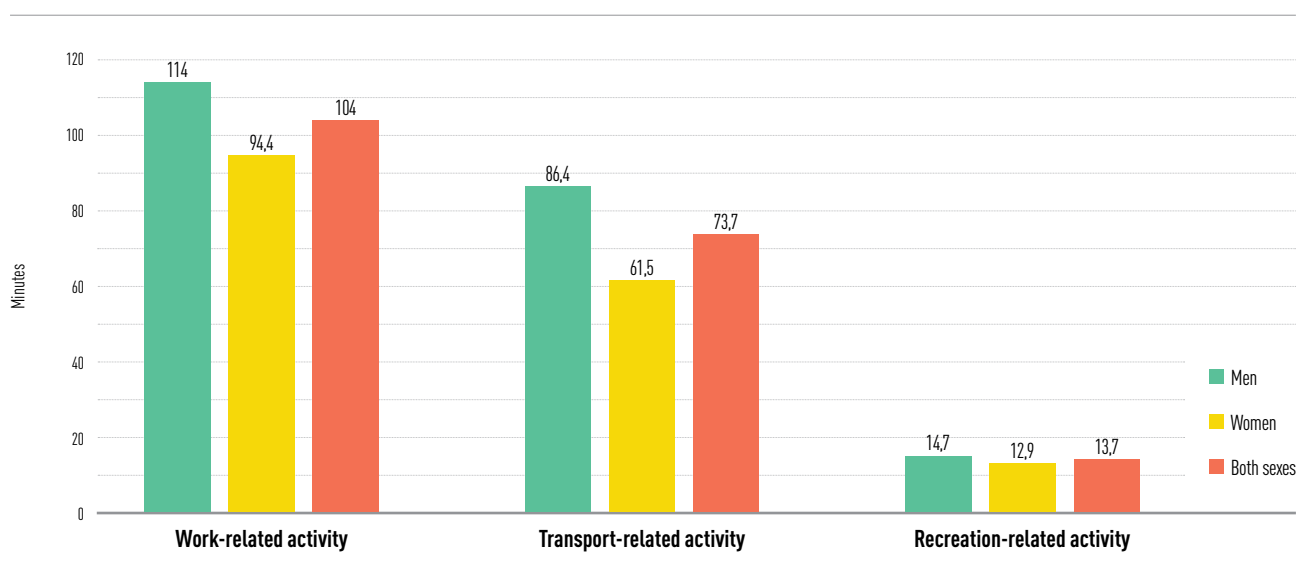
Physical activity levels are possible to measure by considering the median time spent performing physical activity. The median duration of all physical activity carried out daily by all respondents was 128.6 (37.1–300.0) minutes – 145.7 (41.4–145.7) minutes for men and 120 (31.4–250.7) minutes for women. As shown in Table 28, the intensity of physical activity was inversely related to age among males, but this relationship was not observed in females. The median time spent carrying out physical activity was lower than the mean time.

Table 28. Median number of minutes of total physical activity on average per day, by age and sex

Age group (years)	Men		Women		Both sexes	
	Minutes	Inter-quartile range (P25–P75)	Minutes	Inter-quartile range (P25–P75)	Minutes	Inter-quartile range (P25–P75)
18–44	153.6	51.4–347.1	120.0	30.0–240.0	128.6	38.6–300.0
45–69	128.6	30.0–317.1	124.3	34.3–270.0	124.3	34.3–300.0
18–69	145.7	41.4–342.9	120.0	31.4–250.7	128.6	37.1–300.0

Fig. 19 shows the distribution of mean minutes of total physical activity between different types of activity. The greatest differences between the sexes are seen in work-related and transport-related physical activities.

Fig. 19. Mean number of minutes spent per day in work-, transport- and recreation-related physical activity, by sex



As for sedentary activities, men spent 203.6 minutes (191.8–215.4) on average per day, women only 189 minutes (177.7–200.4).

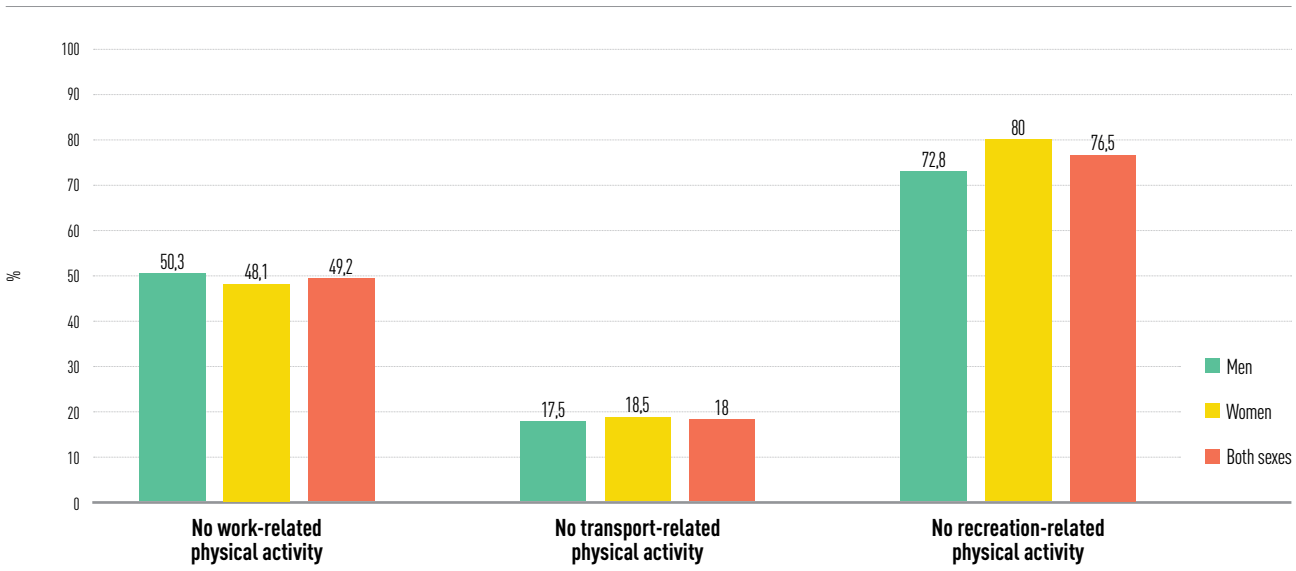
No vigorous physical activity was done by 91.4% of women (89.3–93.5) – much higher than the corresponding figure for men, 71.9% (68.0–75.8) (Table 29).

Table 29. Percentage of population doing no vigorous physical activity, by age and sex

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	68.1	62.7–73.6	91.9	89.4–94.4	80.0	76.9–83.2
45–69	78.6	74.3–83.0	90.6	87.5–93.6	84.9	82.0–87.9
18–69	71.9	68.0–75.8	91.4	89.3–93.5	81.9	79.5–84.3

Fig. 20. Percentage of population classified as doing no work-, transport- or recreation-related physical activity, by sex

As shown in Fig. 20, almost 50% of all respondents (49.2%; 45.0–53.4) did not engage in any work-related activity; the corresponding figure for recreation-related activity was 76.5% (73.3–79.6). In the case of no recreation-related physical activity, there was a slight difference between the 18–44 age group (72.9%) and the 45–69 age group (82.5%).



4.6 History of raised blood pressure

The current health status of the study population with respect to high blood pressure (BP) was assessed by asking respondents about their history of BP and treatment history.

Among all respondents, 33.1% (29.1–37.1) reported that their BP had never been measured; 45.2% (41.8–48.6) had undergone BP measurement but had not been diagnosed with hypertension; 5.2% (4.1–6.4) had been diagnosed with high BP more than a year prior to the interview; and 16.4% (14.6–18.3) had been diagnosed with hypertension within the 12 months prior to the interview.

As the prevalence of high BP is usually greater in elderly people, it follows that younger age groups reported more frequently that they had never been checked for or diagnosed with hypertension, while older age groups more frequently answered that they had been checked for and diagnosed with BP problems.

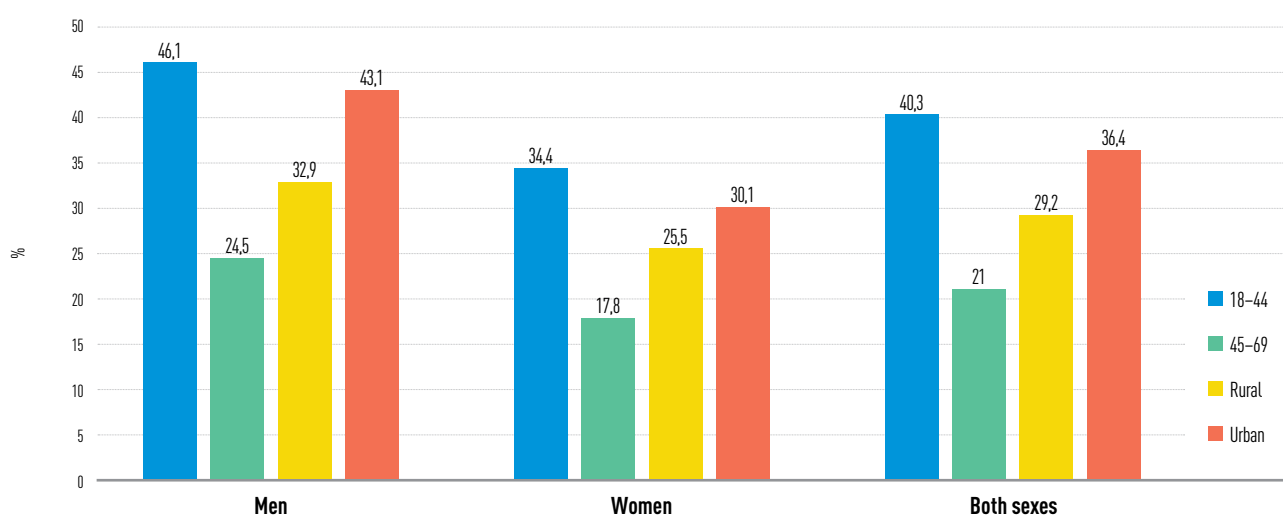
Some statistically significant differences between the sexes emerged in terms of raised BP history. A total of 38.4% of men (33.8–43.0) had never had their BP measured, compared with 28% of women (23.8–32.2).

The percentage of women diagnosed with high BP within the past 12 months was higher (18.9%; 16.4–21.3) than that of men (13.9%; 11.6–16.3) (Table 30).

Sex	Never measured (%)	95% CI	Measured, not diagnosed (%)	95% CI	Diagnosed, but not within past 12 months (%)	95% CI	Diagnosed within past 12 months (%)	95% CI
Men	38.4	33.8–43.0	42.5	38.4–46.6	5.2	3.5–6.9	13.9	11.6–16.3
Women	28.0	23.8–32.2	47.8	43.9–51.7	5.3	4.0–6.7	18.9	16.4–21.3
Both sexes	33.1	29.1–37.1	45.2	41.8–48.6	5.2	4.1–6.4	16.4	14.6–18.3

The largest proportions of the population who had never had their BP measured were found in the younger (18–44) age group and among urban residents, especially among males: 46.1% and 43.1%, respectively (Fig. 21).

Table 30. Distribution of population by status of BP measurement and diagnosis, by sex



Among those diagnosed with raised BP or arterial hypertension, 47.9% (42.5–53.3) responded that they were currently taking medication for raised BP prescribed by a doctor or health worker; the gender split was 42.1% (34.2–49.9) of men and 52.3% (46.4–58.3) of women. The percentage of men who had not taken any medication for raised BP was significantly higher than that of women.

Fig. 21. Percentage of population who had never had BP measured, by sex, age and setting

When analysed by locality, there was no significant difference in medication use for arterial hypertension between the urban and rural populations. Only one fact is worthy of note – that women living in urban areas took medication more often than their rural counterparts (48.9% versus 46.8%). The difference between age groups was statistically significant, with an increase in the proportion of those taking medication from 29.1% (20.1–38.1) in the 18–44 age group to 57.5% (52.4–62.5) in the 45–69 age group (Table 31).

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	22.7	10.1–35.3	35.0	23.2–46.9	29.1	20.1–38.1
45–69	53.8	45.2–62.4	60.0	54.0–66.0	57.5	52.4–62.5
18–69	42.1	34.2–49.9	52.3	46.4–58.3	47.9	42.5–53.3

Table 31. Percentage of population diagnosed with raised BP currently taking medication prescribed by a doctor or health worker, by sex and age

Of those previously diagnosed with raised BP, both male and female, 13.6% (10.0–17.3) had sought advice from a traditional healer.

Of those previously diagnosed with raised BP, both male and female, 21.8% (17.6–25.9) had taken a herbal or traditional remedy from a traditional healer.

4.7 History of diabetes

History of diabetes and compliance with diabetes treatment were also analysed during the survey.

Of the survey population, 71.8% (69.0–74.6) had never had their blood sugar measured; 23.5% (20.9–26.1) had had it measured but had not been diagnosed with raised blood sugar or diabetes; and 0.5% had been diagnosed with raised blood sugar or diabetes but not within the previous 12 months. Only 4.2% (3.5–5.0) of respondents had been diagnosed with raised blood sugar or diabetes within the past 12 months (Table 32). Significantly more respondents aged 45–69 years (9.8%; 8.2–11.5) had been diagnosed with raised blood sugar or diabetes than those aged 18–44 years (0.9%; 0.4–1.4). As Table 32 shows, the proportion of respondents who said that their blood sugar had never been measured was significantly higher among males than females (77.4% versus 66.3%); this difference was detected across all age groups.

Table 32. Distribution of population by status of blood glucose measurement and diagnosis of raised blood glucose or diabetes, by sex

Sex	Never measured (%)	95% CI	Measured, not diagnosed (%)	95% CI	Diagnosed, but not within past 12 months (%)	95% CI	Diagnosed within past 12 months (%)	95% CI
Men	77.4	74.2–80.7	19.1	16.0–22.2	0.4	0.1–0.8	3.1	2.1–4.0
Women	66.3	62.8–69.9	27.8	24.5–31.0	0.6	0.2–1.0	5.3	4.2–6.4
Both sexes	71.8	69.0–74.6	23.5	20.9–26.1	0.5	0.2–0.8	4.2	3.5–5.0

As shown in Fig. 22, there was a slight difference in the percentage of respondents who said that their blood sugar had never been measured by place of residence: 74.3% in rural areas (70.3–78.3) and 69.6% in urban areas (65.7–73.5).

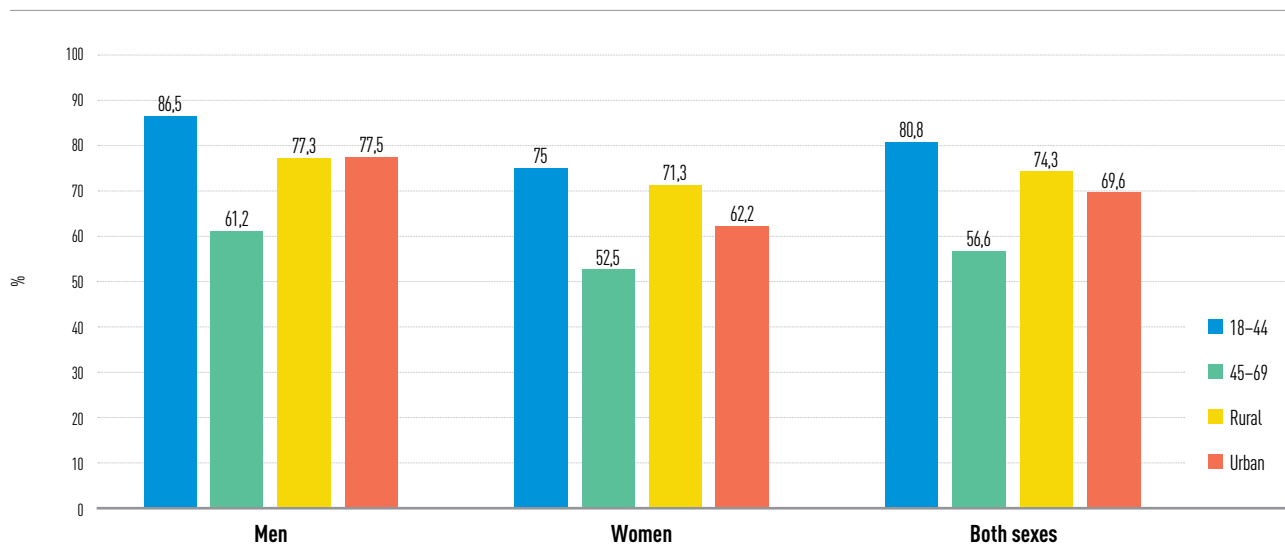


Fig. 22. Percentage of population who had never had their blood glucose measured, by sex, age and setting

Respondents who had previously been diagnosed with raised blood sugar or diabetes were asked whether they had taken any medication for diabetes (including insulin) prescribed by a health worker in the previous two weeks, or whether they were taking insulin for diabetes prescribed by a doctor or other health worker.

Some differences were identified between the sexes, with 72.9% of previously diagnosed men (59.7–86.2) and 77.8% of women (69.7–85.9) taking medication for diabetes prescribed by a doctor or health worker (Table 33). With respect to insulin, a more marked difference was found, with 17.7% of previously diagnosed men (7.2–28.3) and 24.2% of women (16.1–32.3) taking insulin prescribed by a doctor or health worker (Table 34).

Table 33. Percentage of population previously diagnosed with diabetes currently taking medication prescribed for diabetes, by age and sex

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	55.7	0.0–100.0	66.5	40.6–92.4	65.1	40.9–89.3
45–69	73.8	60.4–87.2	80.3	72.0–88.7	77.7	70.2–85.3
18–69	72.9	59.7–86.2	77.8	69.7–85.9	76.0	68.6–83.4

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	0.0	0.0–0.0	37.8	10.1–65.5	32.9	7.9–58.0
45–69	18.7	7.7–29.6	21.1	13.2–29.1	20.2	13.6–26.7
18–69	17.7	7.2–28.3	24.2	16.1–32.3	21.9	15.3–28.5

Respondents from rural areas with previously diagnosed raised blood sugar or diabetes took medication more often than their urban counterparts (79.7%; 68.9–90.5 versus 74.5%; 65.1–83.9); but they took insulin less frequently (15.3%; 5.5–25.2 versus 24.6%; 16.2–33.1).

Table 34. Percentage of population previously diagnosed with diabetes currently taking insulin prescribed for diabetes, by age and sex

Of those previously diagnosed with diabetes, both male and female, 7.9% (3.7–12.1) had sought advice from a traditional healer.

Of those previously diagnosed with diabetes, both male and female, 17.2% (10.5–24.0) had taken herbal or traditional treatment from a traditional healer.

4.8 History of raised cholesterol

Overall, 89.9% (88.2–91.5) of respondents of all ages said that they had never had their blood cholesterol measured within a health-care facility, while 7.5% (6.0–9.0) had undergone a test for blood cholesterol but had not been diagnosed with raised cholesterol. Only 0.9% (0.6–1.2) of the study population had been diagnosed with a high level of cholesterol more than 12 months before the interview, while 1.7% (1.2–2.3) had been diagnosed within the past year. There was a statistically significant difference between age groups in this indicator: older respondents were diagnosed with a high level of blood cholesterol more frequently than younger respondents (Table 35).

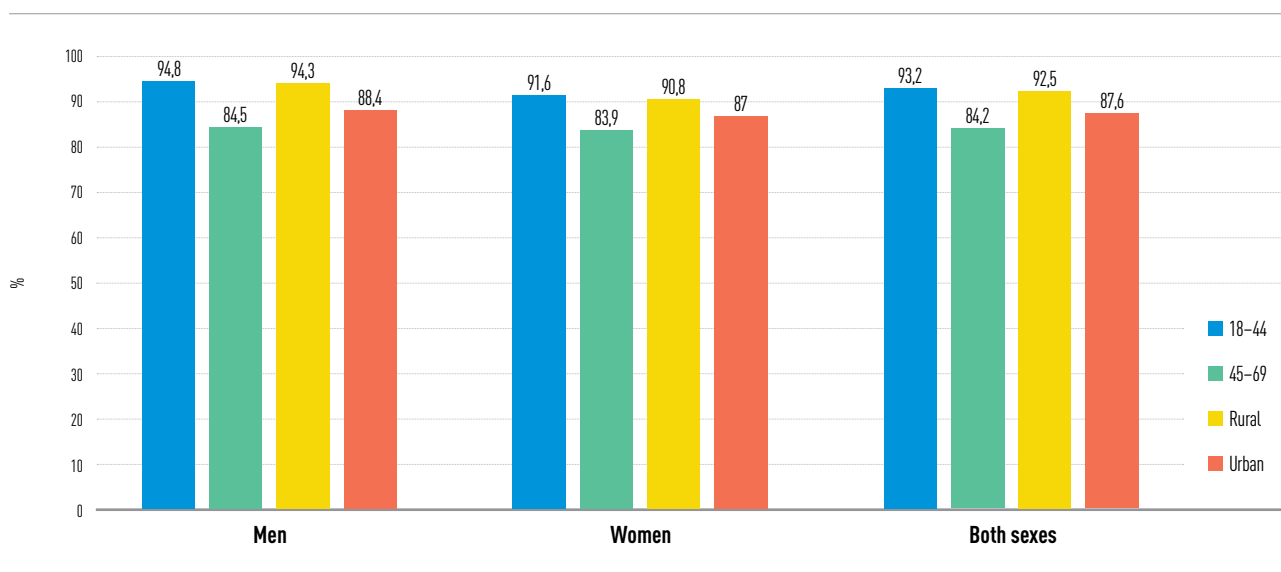
There was no substantial difference between the sexes in terms of cholesterol measurement and diagnosis history.

Table 35. Distribution of population by status of total cholesterol measurement and diagnosis, by age

Age group (years)	Never measured (%)	95% CI	Measured, not diagnosed (%)	95% CI	Diagnosed, but not within past 12 months (%)	95% CI	Diagnosed within past 12 months (%)	95% CI
18–44	93.2	91.6–94.8	6.0	4.4–7.6	0.2	0.0–0.4	0.6	0.2–1.0
45–69	84.2	81.5–87.0	10.1	8.0–12.1	2.0	1.2–2.9	3.7	2.5–4.9
18–69	89.9	88.2–91.5	7.5	6.0–9.0	0.9	0.6–1.2	1.7	1.2–2.3

Fig. 23. Percentage of population who had had no total cholesterol measurement and diagnosis, by sex, age and setting

Respondents aged 45–69 years and respondents living in urban areas had their total cholesterol level measured more often than other groups of respondents (Fig. 23).



Among those diagnosed with a high level of total blood cholesterol, 26.8% (14.9–38.6) had taken oral medication during the previous two weeks based on a prescription from a doctor or health worker. Of these respondents, 25.4% (8.6–42.2) were men and 27.8% (12.8–42.8) were women. In urban areas, men had taken oral medication twice as often as women.

Of those previously diagnosed with raised cholesterol, both male and female, 10.1% (3.7–16.5) had sought advice from a traditional healer.

Of those previously diagnosed with raised cholesterol, both male and female, 12.4% (5.3–19.5) had taken herbal or traditional treatment from a traditional healer.

4.9 History of CVD

Overall, 6.4% (5.1–7.8) of respondents reported that they had at some time had a heart attack or chest pain from heart disease (angina) or stroke. Predictably, a significant difference between age groups was observed: 3.0% (1.8–4.2) in the 18–44 age group and 12.3% (9.9–14.7) in the 45–69 age group. No significant difference was detected between men (6.0%; 4.6–7.4) and women (6.9%; 5.0–8.7), nor between rural and urban settings (6.7% and 6.2%, respectively).

The percentage of all respondents who reported regularly taking aspirin to prevent or treat heart disease was 4.6% (3.7–5.5); 1.7% (1.0–2.3) of respondents took statins for the same purpose. The proportion of women who reported using aspirin to prevent or treat CVDs was almost the same as that of men: 5.0% for males (3.8–6.3) and 4.2% for females (3.2–5.2). Similar trends were observed in the proportions of men and women using statins.

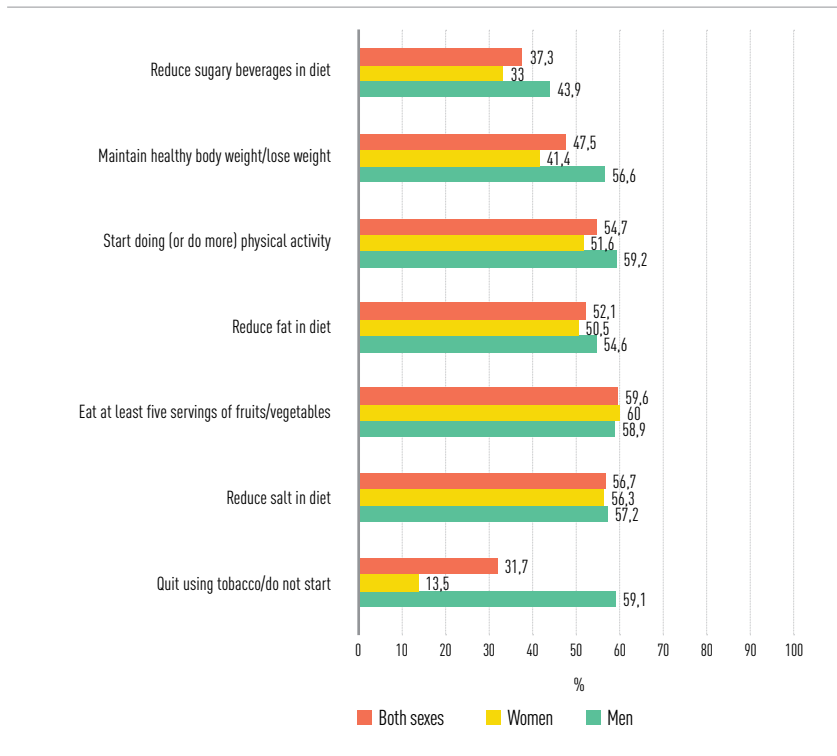
4.10 Lifestyle advice

Fig. 24 shows the percentage of respondents who had received various kinds of lifestyle advice from a doctor or health worker over the past three years.

- 31.7% (27.8–35.6) of respondents had been advised to stop smoking or not to start: 59.1% among men (52.2–65.9) and 13.5% among women (9.6–17.4).
- 56.7% (52.1–61.3) of respondents had been advised to reduce the salt in their diet: 57.2% among men (50.3–64.0) and 56.3% among women (50.7–61.9).
- 59.6% (54.6–64.6) of respondents had been advised to eat at least five servings of fruits and/or vegetables each day: 58.9% among men (51.6–66.2) and 60.0% among women (54.2–65.9).
- 52.1% (47.2–57.0) of respondents had been advised to reduce the fat in their diet: 54.6% among men (47.4–61.9) and 50.5% among women (44.8–56.1).
- 54.7% (50.3–59.1) of respondents had been advised to start or do more physical activity: 59.2% among men (53.1–65.4) and 51.6% among women (46.2–57.1).

- 47.5% (42.9–52.0) of respondents had been advised to maintain a healthy body weight or to lose weight: 56.6% among men (50.2–62.9) and 41.4% among women (36.0–46.7).
- 37.3% (32.9–41.8) of respondents had been advised to reduce sugary beverages: 43.9% among men (37.5–50.2) and 33.0% among women (27.9–38.1).

Fig. 24. Percentage of population advised by a doctor or health worker to make certain lifestyle choices, by sex



It is clear from Fig. 24 that advice on health was given by a doctor or health worker more frequently to men than to women. For each of the different pieces of advice, there was also a significant difference between age groups, with younger people receiving advice less frequently.

4.11 Cervical cancer screening

The next question, for female respondents only, asked whether they had ever had a screening test for cervical cancer.

The percentage of all the women aged 18–69 years participating in the study who reported that they had undergone a screening test for cervical cancer was only 9.0% (6.7–11.4). No significant difference was observed between the 18–44 age group (8.8%) and the 45–69 age group (9.3%) (Fig. 25). Among women respondents aged 30–49 years, the figure was 11.3% (8.2–14.3).

The frequency at which women aged 18–69 in urban areas had undergone cervical cancer screening was twice as high as their rural counterparts (11.6% versus 5.6%) (Fig. 25). Among women aged 30–49, the disparity between urban and rural areas was greater – 15.1% versus 6.1%.

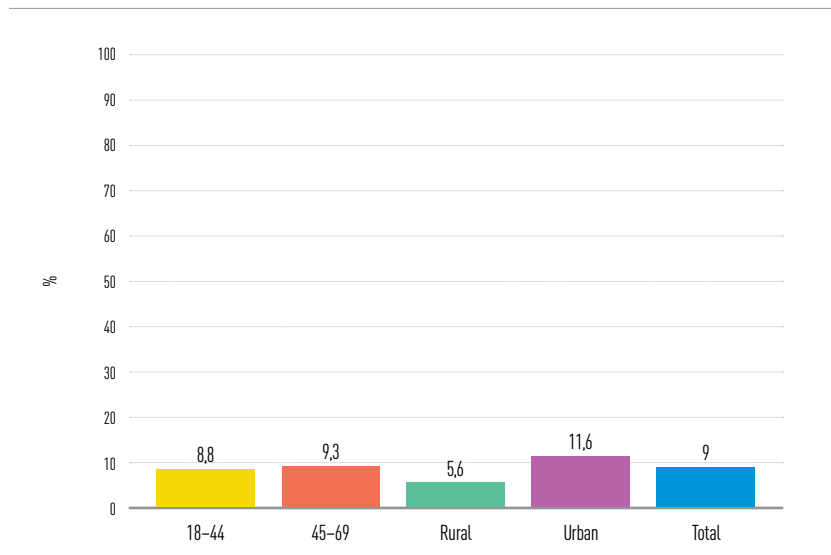


Fig. 25. Percentage of females who had been screened for cervical cancer, by age and setting

4.12 Physical measurements

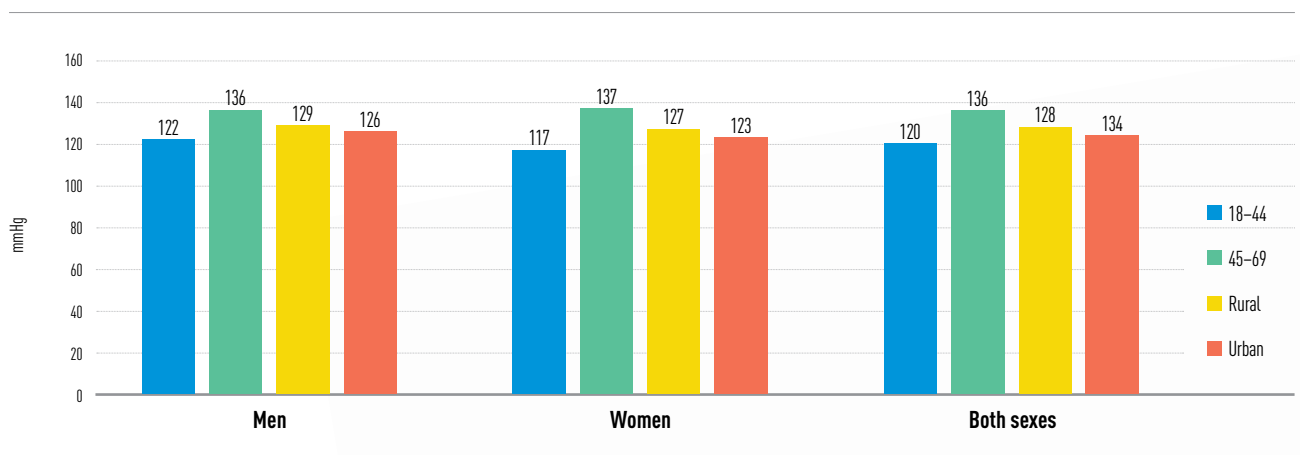
Hypertension as an NCD risk factor was assessed by means of **BP** measurement.

The mean systolic blood pressure (SBP) among all respondents, including those currently on medication for raised BP, was 125.9 mmHg (124.0–127.0). The gender split was 127.0 mmHg for men (125.6–128.4) and 124.8 mmHg for women (123.4–126.2).

The mean diastolic blood pressure (DBP) among all respondents, including those currently on medication for raised BP, was 81.2 mmHg (80.4–82.0). The gender split was 81.5 mmHg for men (80.5–82.6) and 80.9 mmHg for women (80.1–81.8).

Mean SBP and DBP were higher for older respondents aged 45–69 than for their younger counterparts aged 18–44. While the SBP in the 45–69 age group was approximately 13% higher than in the 18–44 age group, the difference in DBP between the age groups was only about 9%. The differences between rural and urban residence groups were slight for both SBP and DBP (Fig. 26, 27).

Fig. 26. Mean SBP, by sex, age and setting



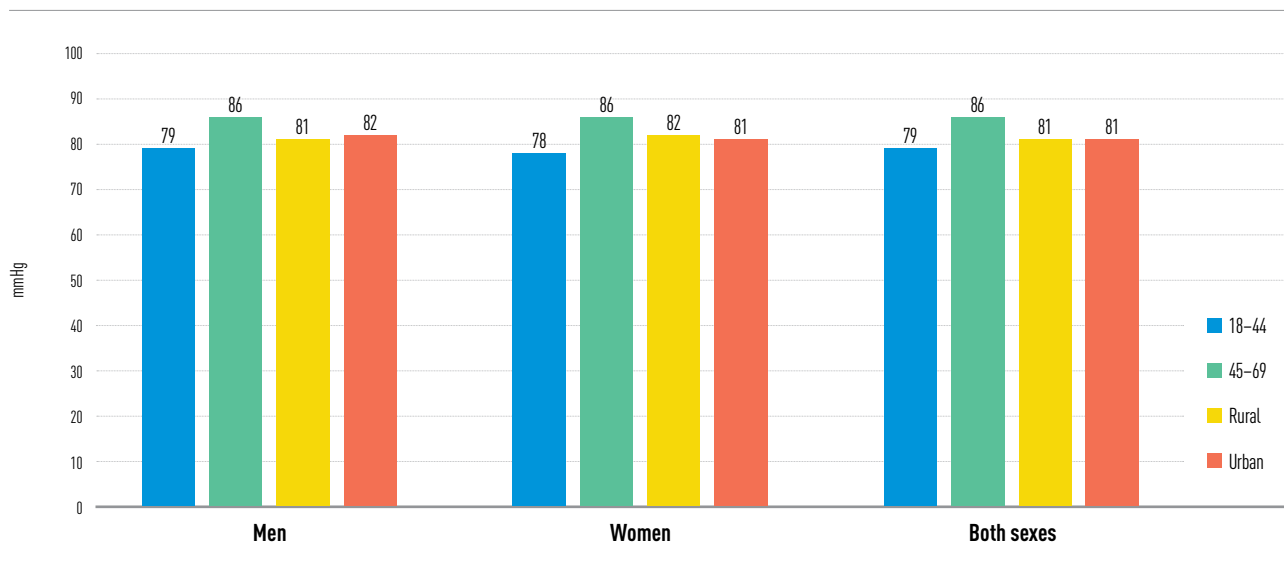


Fig. 27. Mean DBP, by sex, age and setting

All respondents were assessed according to two levels of raised BP: the first consisting of those with SBP \geq 140 mmHg and/or DBP \geq 90 mmHg; the second consisting of those with SBP \geq 160 mmHg and/or DBP \geq 100 mmHg.

Table 36. Percentage of population with SBP \geq 140 mmHg and/or DBP \geq 90 mmHg, excluding those on medication for raised BP, by age and sex

In the first group, the percentage of those with SBP \geq 140 mmHg and/or DBP \geq 90 mmHg, excluding those on medication for raised BP, was 21.6% (19.0–24.3); the gender split was 22.9% for men (19.0–26.9) and 20.3% for women (17.7–22.9) (Table 36).

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	16.2	11.4–21.0	10.0	7.3–12.6	13.1	10.2–16.0
45–69	37.8	32.7–43.0	41.7	36.7–46.6	39.8	35.7–43.8
18–69	22.9	19.0–26.9	20.3	17.7–22.9	21.6	19.0–24.3

Table 37. Percentage of population with SBP \geq 140 mmHg and/or DBP \geq 90 mmHg or currently on medication for raised BP, by age and sex

The percentage of those with SBP \geq 140 mmHg and/or DBP \geq 90 mmHg or taking medication for raised BP was 29.7% (27.2–32.1); the gender split was 29.3% for men (25.6–33.0) and 30.1% for women (27.5–32.7) (Table 37).

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	17.7	13.0–22.5	12.9	10.0–15.8	15.3	12.5–18.2
45–69	50.0	45.4–54.6	57.0	52.9–61.1	53.7	50.3–57.1
18–69	29.3	25.6–33.0	30.1	27.5–32.7	29.7	27.2–32.1

In the second group, the percentage of those with SBP \geq 160 mmHg and/or DBP \geq 100 mmHg, excluding those on medication for raised BP, was 6.9% (5.6–8.2); the gender split was 6.1% for men (4.4–7.8) and 7.7% for women (6.1–9.3) (Table 38).

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	3.4	1.6–5.3	2.8	1.4–4.1	3.1	1.9–4.4
45–69	12.0	8.7–15.3	17.8	14.3–21.3	15.0	12.4–17.5
18–69	6.1	4.4–7.8	7.7	6.1–9.3	6.9	5.6–8.2

The percentage of those with an SBP \geq 160 mmHg and/or DBP \geq 100 mmHg or taking medication for raised BP was 16.5% (14.7–18.2); the gender split was 13.8% for men (11.5–16.1) and 19.0% for women (16.9–21.1) (Table 39).

Table 38. Percentage of population with SBP \geq 160 mmHg and/or DBP \geq 100 mmHg, excluding those on medication for raised BP, by age and sex

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	5.3	3.0–7.5	6.0	4.0–8.0	5.6	4.0–7.2
45–69	29.2	25.1–33.4	39.5	35.8–43.2	34.6	31.7–37.6
18–69	13.8	11.5–16.1	19.0	16.9–21.1	16.5	14.7–18.2

As can be seen from these tables, there was a very clear and statistically significant difference between the ages groups. The percentage of respondents with controlled BP was higher in the urban population (12.5%; 9.0–16.0) than among those in rural areas (7.2%; 4.4–10.0). Also, there was a higher proportion of individuals with hypertension taking medication in urban areas than in rural ones.

Table 39. Percentage of population with SBP \geq 160 mmHg and/or DBP \geq 100 mmHg or currently on medication for raised BP, by age and sex

In answer to the question: “During the past two weeks, have you been treated for raised BP with drugs (medication) prescribed by a doctor or other health worker?”, 10.1% (7.8–12.3) of all respondents aged 18–69 were taking medication and did not have raised BP; 24.5% (20.8–28.2) were taking medication but still had elevated BP (SBP \geq 140 mmHg and/or DBP \geq 90 mmHg); and 65.4% (60.9–70.0) had elevated BP but were not taking medication. The proportion of women who were taking medication and had successfully controlled their BP (SPB <140 mmHg, DBP <90 mmHg) was twice that of men (Table 40).

Table 40. Percentage of population with treated and/or controlled raised BP

Sex	On medication; SBP <140, DBP <90 (%)	95% CI	On medication; SBP \geq 140 and/or DBP \geq 90 (%)	95% CI	Not on medication; SBP \geq 140 and/or DBP \geq 90 (%)	95% CI
Men	6.4	3.9–9.0	21.6	16.4–26.7	72.0	66.0–78.0
Women	13.5	10.2–16.8	27.3	22.9–31.7	59.2	53.9–64.5
Both sexes	10.1	7.8–12.3	24.5	20.8–28.2	65.4	60.9–70.0

The mean heart rate of all respondents, measured in beats per minute (bpm), was 77.2 bpm. There was no significant difference in mean heart rate between males and females and between age groups (Table 41).

Age group (years)	Men		Women		Both sexes	
	bpm	95% CI	bpm	95% CI	bpm	95% CI
18–44	76.6	75.7–77.6	78.3	77.3–79.3	77.5	76.7–78.3
45–69	75.9	74.9–76.8	77.4	76.5–78.2	76.6	76.0–77.3
18–69	76.4	75.6–77.1	77.9	77.1–78.7	77.2	76.5–77.8

Table 41. Mean heart rate, by age and sex

Anthropometric measurements such as height, weight, and waist and hip circumference were provided to calculate BMI and mean waist-to-hip ratio. The prevalence of overweight and obesity in the study population (excluding pregnant women), by age, sex and residential setting, were calculated on the basis of these measurements.

The measurements showed that men were, on average, substantially taller and heavier than women. Male respondents were, on average, 172.3 cm tall (171.8–172.9) and weighed 77.1 kg (76.2–78.0); females were, on average, 161.1 cm tall (160.5–161.7) and weighed 69.8 kg (68.8–70.7). No significant differences in mean height or mean weight between rural and urban residents were detected (Fig. 28, 29).

Fig. 28. Mean height, by sex, age and setting

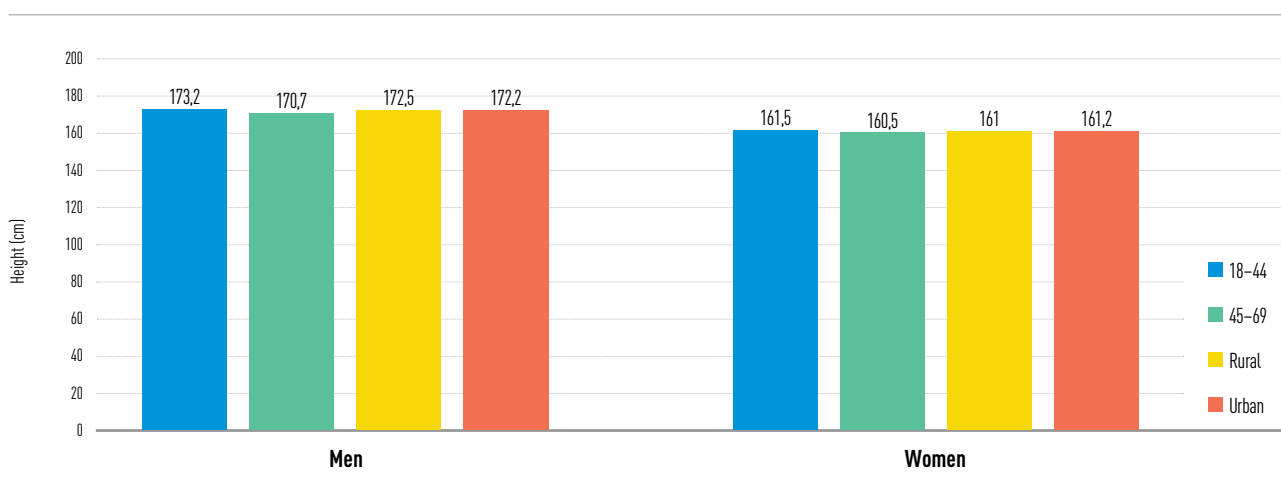
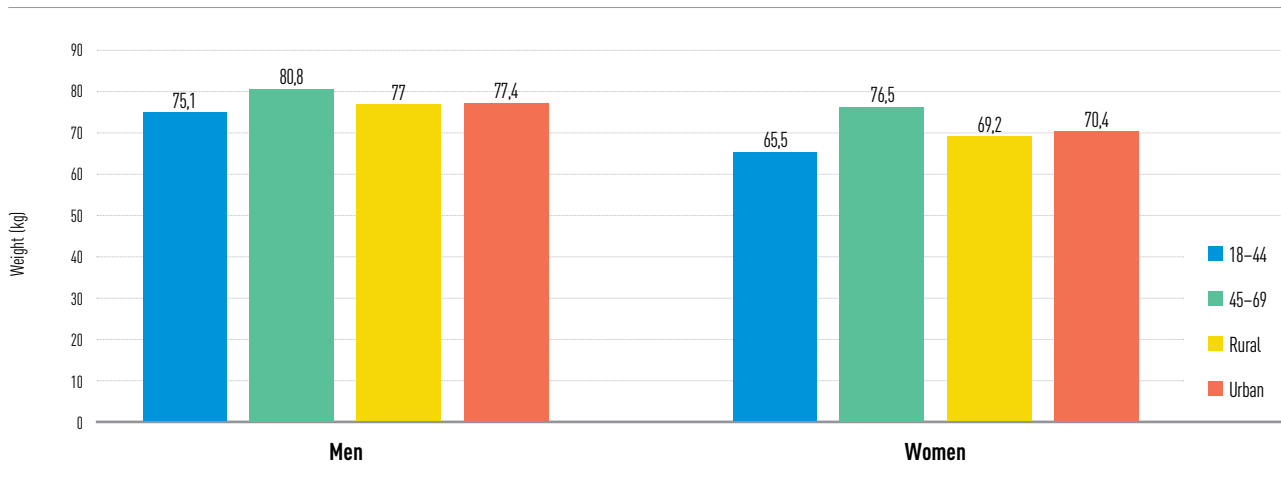


Fig. 29. Mean weight, by sex, age and setting



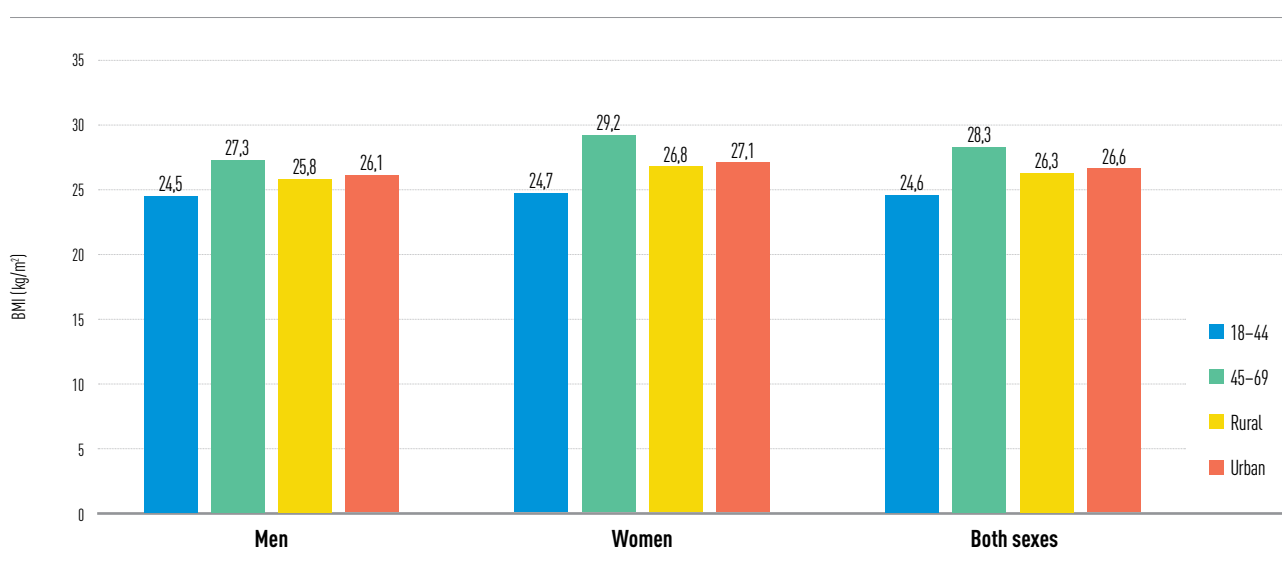
Mean BMI for all respondents was 26.0 kg/m² (25.7–26.2). Mean BMI for women (26.4 kg/m²; 26.0–26.9) was higher than for men (25.5 kg/m²; 25.2–25.8). Among all respondents, mean BMI was higher in the older age group than in the younger age group – 28.3 kg/m² (28.0–28.6) versus 24.6 kg/m² (24.3–24.9) (Table 42).

Table 42. Mean BMI, by age and sex

Age group (years)	Men		Women		Both sexes	
	kg/m ²	95% CI	kg/m ²	95% CI	kg/m ²	95% CI
18–44	24.5	24.1–24.8	24.7	24.1–25.2	24.6	24.3–24.9
45–69	27.3	26.8–27.7	29.2	28.8–29.7	28.3	28.0–28.6
18–69	25.5	25.2–25.8	26.4	26.0–26.9	26.0	25.7–26.2

There was a slight difference in mean BMI among males and females according to place of residence. For men, mean BMI was higher in urban areas than in rural ones: 26.1 kg/m² (25.7–26.5) versus 25.8 kg/m² (25.5–26.2). For women, mean BMI was 27.1 kg/m² (26.5–27.7) in urban areas and 26.8 kg/m² (26.1–27.4) in rural ones (Fig. 30).

Fig. 30. Mean BMI, by sex, age and setting



All respondents were classified in one of four BMI categories: underweight (BMI < 18.5 kg/m²), normal weight (BMI 18.5–24.9 kg/m²), overweight (BMI 25.0–29.9 kg/m²) and obese (BMI ≥ 30.0 kg/m²). Of all respondents, 2.8% were underweight, 41.7% were normal weight, 34.8% were overweight, and 20.6% were obese (Table 43).

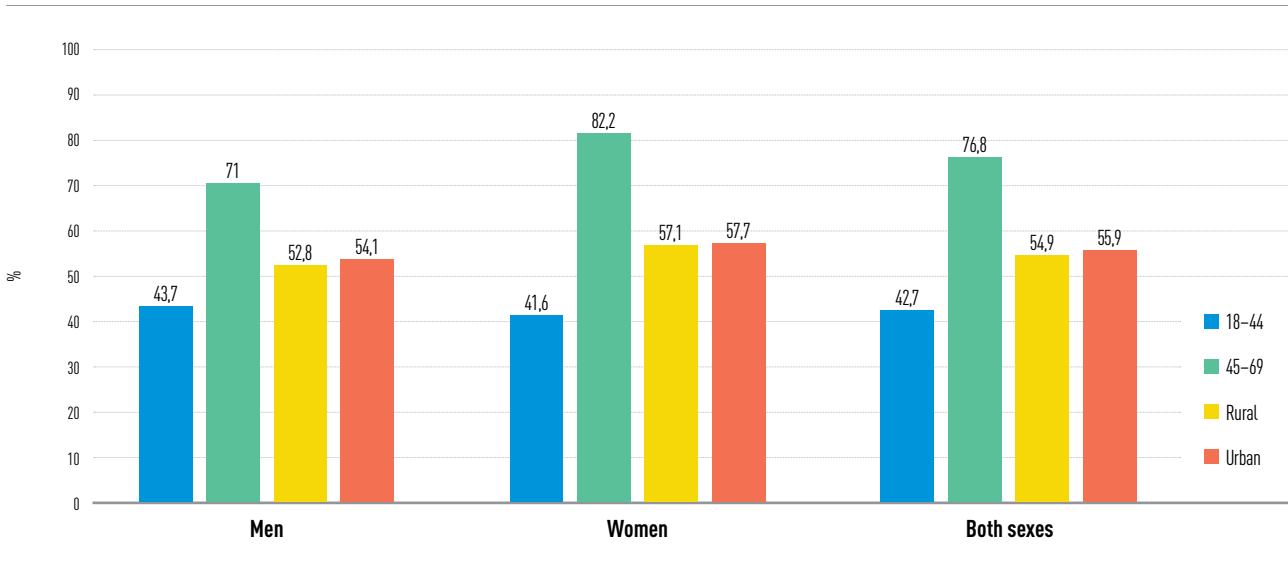
Table 43. BMI classifications, by age and sex

Sex	Underweight <18.5 kg/m ² (%)	95% CI	Normal 18.5–24.9 kg/m ² (%)	95% CI	Overweight 25.0–29.9 kg/m ² (%)	95% CI	Obese ≥30.0 kg/m ² (%)	95% CI
Men	2.2	1.0–3.4	44.3	40.5–48.1	38.8	34.9–42.7	14.7	12.4–17.1
Women	3.5	2.1–4.9	39.1	35.9–42.2	30.9	27.9–33.9	26.5	23.5–29.5
Both sexes	2.8	1.9–3.7	41.7	39.2–44.2	34.8	32.4–37.3	20.6	18.5–22.7

Fig. 31. Percentage of population (excluding pregnant women) with BMI ≥ 25 kg/m², by age, sex and setting

There was a higher prevalence of obesity among female respondents (26.5%; 23.5–29.5) than among male respondents (14.7%; 12.4–17.1).

The prevalence of overweight and obesity (BMI ≥ 25) was higher in women (57.4%) than in men (53.5%), and in urban areas (55.9%) than in rural ones (54.9%). The prevalence of obesity was markedly higher in women (26.5%) than in men (14.7%). Overall, the proportion of respondents with BMI ≥ 25 was higher in the older age group (76.8%) than in the younger (42.7%) (Fig. 31).



Mean waist circumference was greater among men than among women (excluding pregnant women) – 92.3 cm (91.1–93.5) versus 88.2 cm (87.1–89.4).

However, mean hip circumference was smaller among men than among women (excluding pregnant women) – 99.1 cm (98.0–100.2) versus 103.4 cm (102.1–104.8).

4.13 Biochemical measurements

All respondents were asked if they currently received any treatment for diabetes (prescribed by a doctor or other health worker), insulin or oral drug (medication) that they had taken in the last two weeks.

The mean fasting blood glucose level was found to be 5.1 mmol/L (5.0–5.2) in the total study population, including those currently taking medication for diabetes. The gender split was 5.0 mmol/L (4.9–5.1) for men and 5.1 mmol/L (5.0–5.3) for women.

Among all respondents, the level of mean fasting blood glucose was lower in the younger group (4.8 mmol/L; 4.7–4.9) than in the older group (5.5 mmol/L; 5.4–5.7).

There was no significant difference in mean fasting blood glucose between rural and urban respondents (Fig. 32).

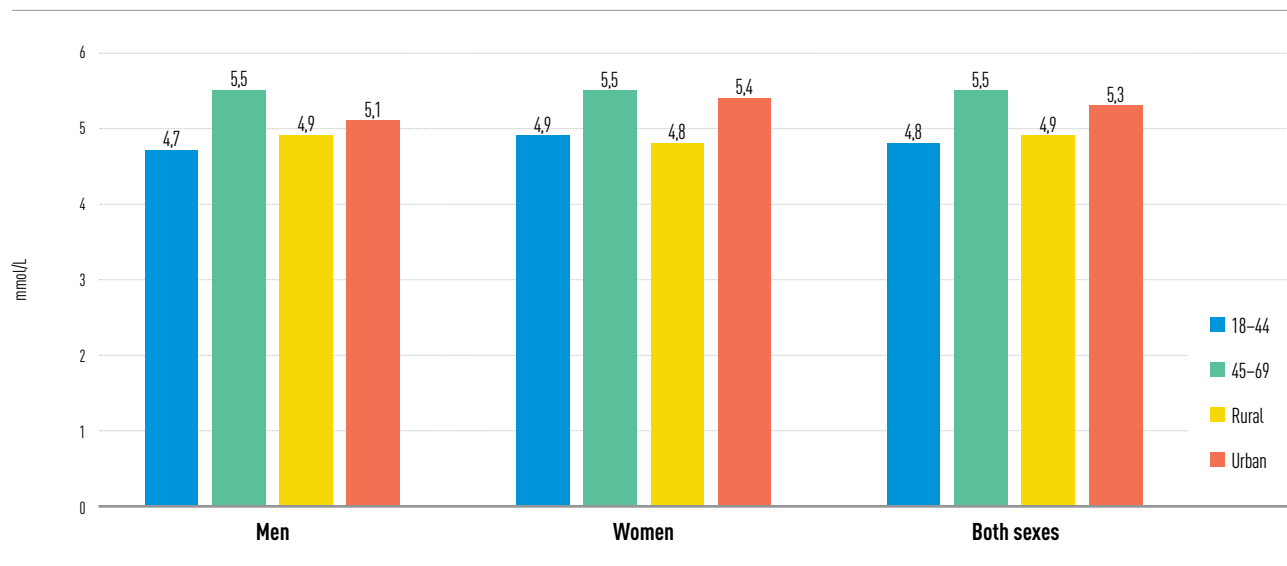


Fig. 32. Mean fasting blood glucose, by sex, age and setting

Impaired fasting glycaemia (IFG) was defined as a plasma venous value ≥ 6.1 mmol/L (110 mg/dl) and < 7.0 mmol/L (126 mg/dl). IFG was detected in 5.0% of all respondents. A slight difference was observed between men (5.0%; 3.5–6.5) and women (4.9%; 3.8–6.1). Prevalence of IFG was almost three times higher in the older age group than in the younger (8.3% versus 3.0%) (Table 44).

Table 44. Percentage of population with IFG, by age and sex

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	3.6	1.8–5.5	2.3	1.1–3.6	3.0	1.8–4.1
45–69	7.5	4.8–10.2	9.1	6.9–11.2	8.3	6.6–10.0
18–69	5.0	3.5–6.5	4.9	3.8–6.1	5.0	4.0–5.9

For all respondents, prevalence of IFG was higher in urban areas than in rural areas – 6.1% (4.7–7.5) versus 3.7% (2.4–4.9).

Raised blood glucose was defined as a plasma venous value ≥ 7.0 mmol/L (126 mg/dl). The overall prevalence of raised blood glucose was 6.5% (5.4–7.6); the gender split was 5.2% (3.8–6.5) in men and 7.9% (6.4–9.4) in women. Raised blood glucose was found in 3.6% (2.4–4.8) of respondents in the 18–44 age group, and 11.5% (9.5–13.5) in the 44–69 age group (Table 45).

Table 45. Percentage of population with raised blood glucose or currently on medication for diabetes, by age and sex

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	2.3	0.9–3.8	4.9	3.3–6.5	3.6	2.4–4.8
45–69	10.2	7.5–13.0	12.6	9.8–15.3	11.5	9.5–13.5
18–69	5.2	3.8–6.5	7.9	6.4–9.4	6.5	5.4–7.6

For all respondents, prevalence of raised blood glucose was more than twice as high in urban area as in rural ones – 8.7% [7–10.5] versus 4.0% [2.7–5.2].

Of all respondents, 4.1% [3.3–4.9] were currently on medication for diabetes. The percentage of respondents on medication was twice as high in women (5.4%; 4.2–6.6) as in men (2.7%; 1.9–3.5). There was a very significant difference between the 18–44 age group (1.0%; 0.5–1.5) and the 45–69 age group (9.2%; 7.5–10.9). Also, the proportion was more than twice as high in urban areas (5.3%; 4.0–6.6) as in rural ones (2.6%; 1.7–3.5).

Blood cholesterol level was checked in all respondents, including participants receiving cholesterol-lowering medication.

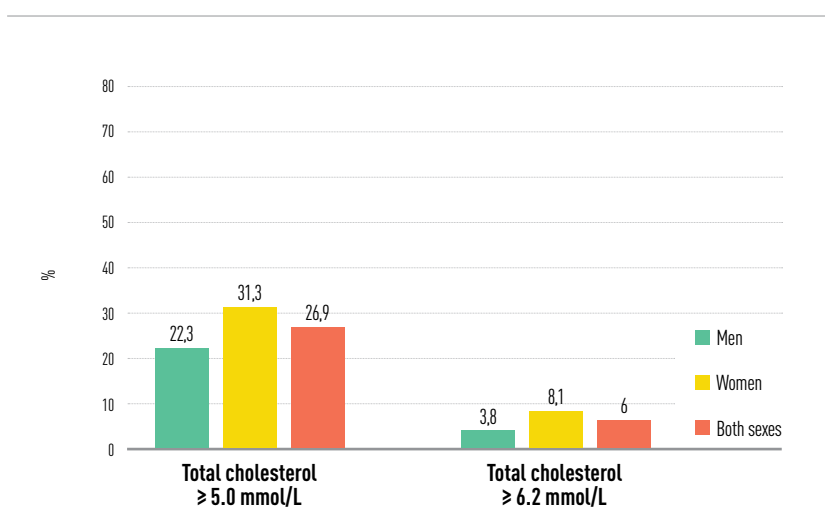
The overall mean total blood cholesterol level was found to be 4.4 mmol/L (4.3–4.5) in the study population. The gender split was 4.3 mmol/L (4.2–4.4) in men and 4.5 mmol/L (4.5–4.6) in women, indicating that there was no significant difference in level between the sexes. The mean total blood cholesterol level was slightly higher in the older age group than in the younger (Table 46). No significant difference in level was detected between rural and urban residents.

Table 46. Mean total blood cholesterol, by age and sex

Age group (years)	Men		Women		Both sexes	
	mmol/L	95% CI	mmol/L	95% CI	mmol/L	95% CI
18–44	4.1	4.0–4.2	4.3	4.2–4.4	4.2	4.1–4.3
45–69	4.6	4.5–4.7	4.9	4.8–5.0	4.8	4.7–4.9
18–69	4.3	4.2–4.4	4.5	4.5–4.6	4.4	4.3–4.5

A total of 26.9% of the study population had a blood cholesterol level ≥ 5 mmol/L [24.4–29.4], and 6.0% [4.9–7.1] ≥ 6.2 mmol/L (or were taking medication for hypercholesterolemia). There was a substantial difference between the sexes: 22.3% [19.0–25.6] of men had a blood cholesterol level ≥ 5 mmol/L or were taking medication for hypercholesterolemia, compared to 31.3% [28.1–34.5] of women; and 3.8% [2.7–5.0] of men had a blood cholesterol level ≥ 6.2 mmol/L or were taking medication for hypercholesterolemia, compared to 8.1% [6.4–9.8] of women (Fig. 33).

Fig. 33. Percentage of population with raised total cholesterol, by sex



The percentage of female respondents with raised total cholesterol ≥ 5.0 mmol/L currently taking medication for raised cholesterol was higher than for male respondents. This was also true for women with a blood cholesterol level ≥ 6.2 mmol/L (Fig. 34).

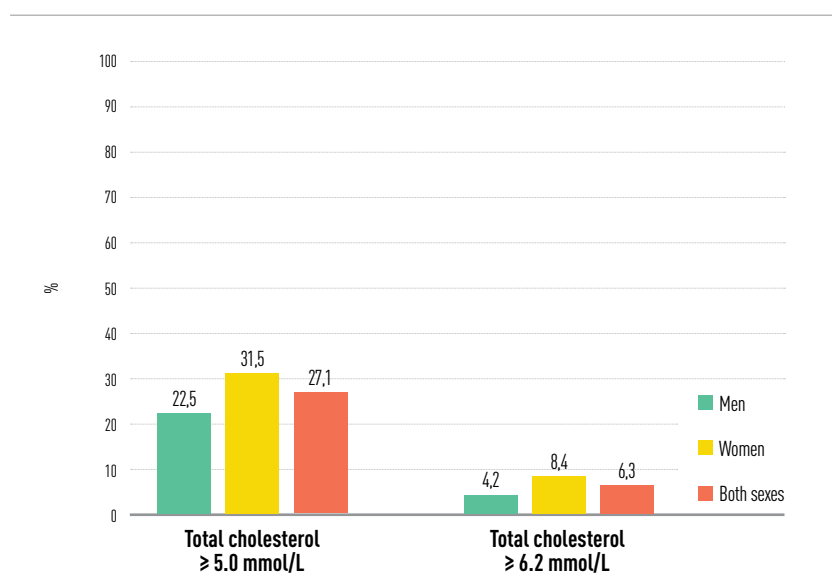


Fig. 34. Percentage of population with raised total cholesterol and currently taking medication for raised cholesterol, by sex

The mean level of high-density lipoprotein (HDL) cholesterol in the blood among all respondents was 1.1 mmol/L (1.1–1.1).

No significant differences in the mean level of HDL were detected between males and females and between age groups. Among men, 51.7% (47.0–56.3) had an HDL level < 1.03 mmol/L (Table 47). Among women, 68.8% (65.4–72.3) had an HDL level < 1.29 mmol/L (Table 48).

Age group (years)	Men	
	%	95% CI
18–44	50.9	44.8–57.1
45–69	53.0	48.0–57.9
18–69	51.7	47.0–56.3

Table 47. Percentage of males with HDL < 1.03 mmol/L, by age

Age group (years)	Women	
	%	95% CI
18–44	68.9	64.3–73.4
45–69	68.8	65.1–72.5
18–69	68.8	65.4–72.3

Table 48. Percentage of females with HDL < 1.29 mmol/L, by age

Mean intake of salt per day among all respondents was examined. The WHO recommendation is less than 5 g salt or 2 g sodium per person per day.

Overall, mean salt intake in the study population was 10.0 g/day (9.9–10.2). Differences between the younger and older age groups were almost negligible (9.8 g/day versus 10.4 g/day, respectively). There was a significant gender difference in mean salt intake: 11.4 g/day for men (11.2–11.6) and 8.6 g/day for women (8.5–8.8) (Table 49).

Table 49. Mean salt intake, by age and sex

Age group (years)	Men		Women		Both sexes	
	g/day	95% CI	g/day	95% CI	g/day	95% CI
18–44	11.1	10.8–11.3	8.5	8.3–8.7	9.8	9.6–10.0
45–69	12.1	11.9–12.3	8.8	8.7–9.0	10.4	10.2–10.5
18–69	11.4	11.2–11.6	8.6	8.5–8.8	10.0	9.9–10.2

Respondents living in rural areas consumed more salt per day than urban citizens (Fig. 35).

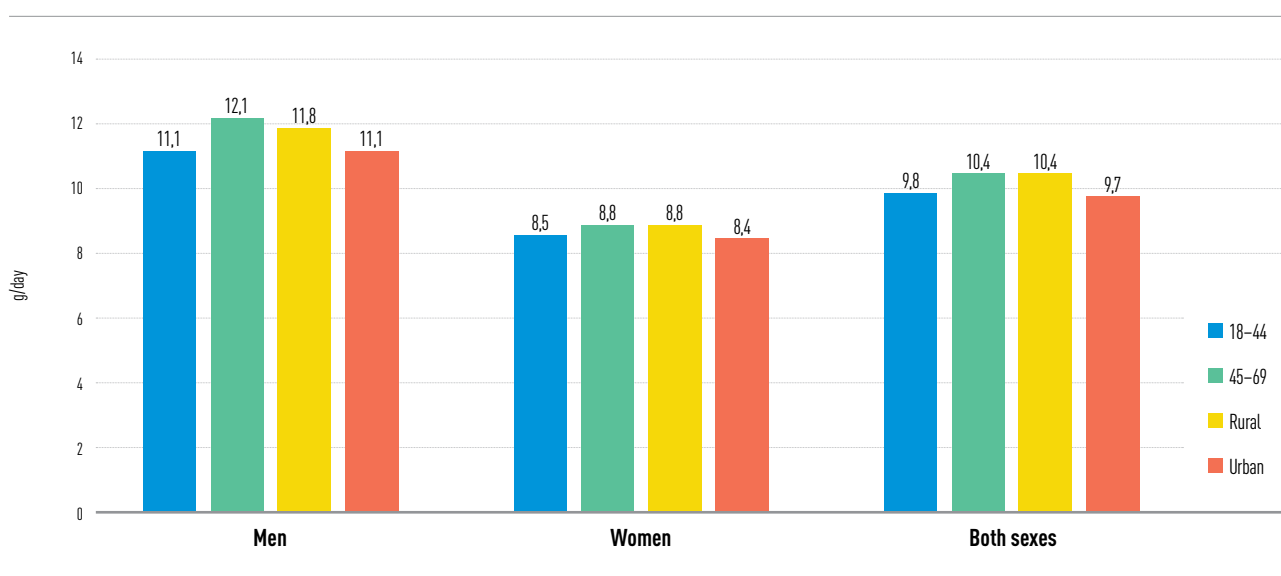


Fig. 35. Mean salt intake (g/day), by sex, age and setting

4.14 CVD risk

To assess CVD risk, only respondents aged 40 years and over were considered. These were divided into two age groups – 40–54 years and 55–69 years. The proportion of these respondents with a 10-year CVD risk $\geq 30\%$ was determined by combining the instrument questions from Steps 1, 2 and 3. Relevant data to determine a 10-year CVD risk $\geq 30\%$ were BP, smoking status (current smokers or individuals who had stopped smoking less than one year before the assessment), total cholesterol, and diabetes (previously diagnosed or with a fasting plasma glucose concentration >7.0 mmol/L). Respondents meeting these criteria were added to those who had an existing CVD.

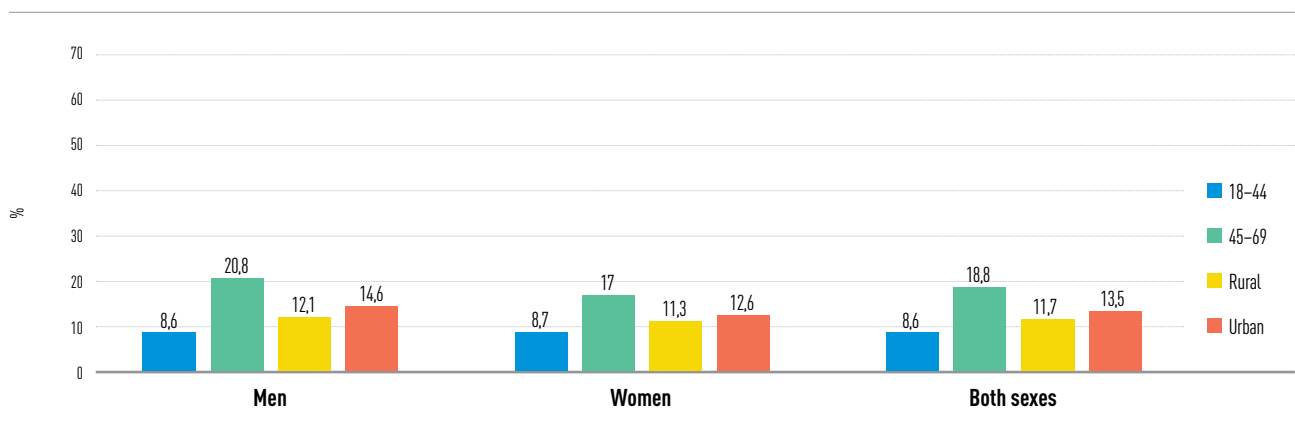
The percentage of respondents with a 10-year CVD risk $\geq 30\%$ or with existing CVD was 12.6% (10.4–14.8). The percentage of men was higher than that of women (13.3% versus 12.0%). Also, the levels of this indicator were different between the two newly created age groups, with a prevalence among people

aged 55–69 years that was more than twice as high as among those aged 40–54 years (18.8% versus 8.6%) (Table 50).

Table 50. Percentage of population (aged 40 and over) with a 10-year CVD risk \geq 30% or with existing CVD, by age and sex

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
40–54	8.6	5.1–12.0	8.7	5.8–11.6	8.6	6.3–11.0
55–69	20.8	15.5–26.1	17.0	13.1–21.0	18.8	15.3–22.3
40–69	13.3	10.3–16.3	12.0	9.4–14.6	12.6	10.4–14.8

The proportion of respondents with a 10-year CVD risk \geq 30% or existing CVD was higher in urban areas (13.5%) than in rural areas (11.7%) (Fig. 36).



From the group of respondents (40–69 years old, with a 10-year CVD risk \geq 30%, including those with existing CVD), more than half – 51.7% (44.0–59.5) – were receiving drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes. The types of counselling and advice received from a doctor included: to stop or not start smoking; to reduce salt in the diet; to eat at least five servings of fruits and/or vegetables per day; to reduce fat in the diet; to start or do more physical activity; and to maintain a healthy body weight or lose weight. A higher proportion of men than women were receiving drug therapy and counselling (57.9% versus 45.6%), and a higher proportion of older respondents than younger ones (56.9% versus 44.5%) (Table 51).

Fig. 36. Percentage of population (aged 40 and over) with a 10-year CVD risk \geq 30% or existing CVD, by age, sex and setting

Table 51. Percentage of eligible population receiving drug therapy and counselling to prevent heart attacks and strokes, by age and sex

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
40–54	52.2	29.9–74.5	37.6	22.5–52.8	44.5	31.1–57.9
55–69	61.6	48.8–74.4	51.8	39.9–63.8	56.9	47.8–66.1
40–69	57.9	46.1–69.6	45.6	36.1–55.1	51.7	44.0–59.5

The percentage of women receiving drug therapy and counselling to prevent heart attacks and strokes was almost twice as high in urban areas as in rural areas (Fig. 37).

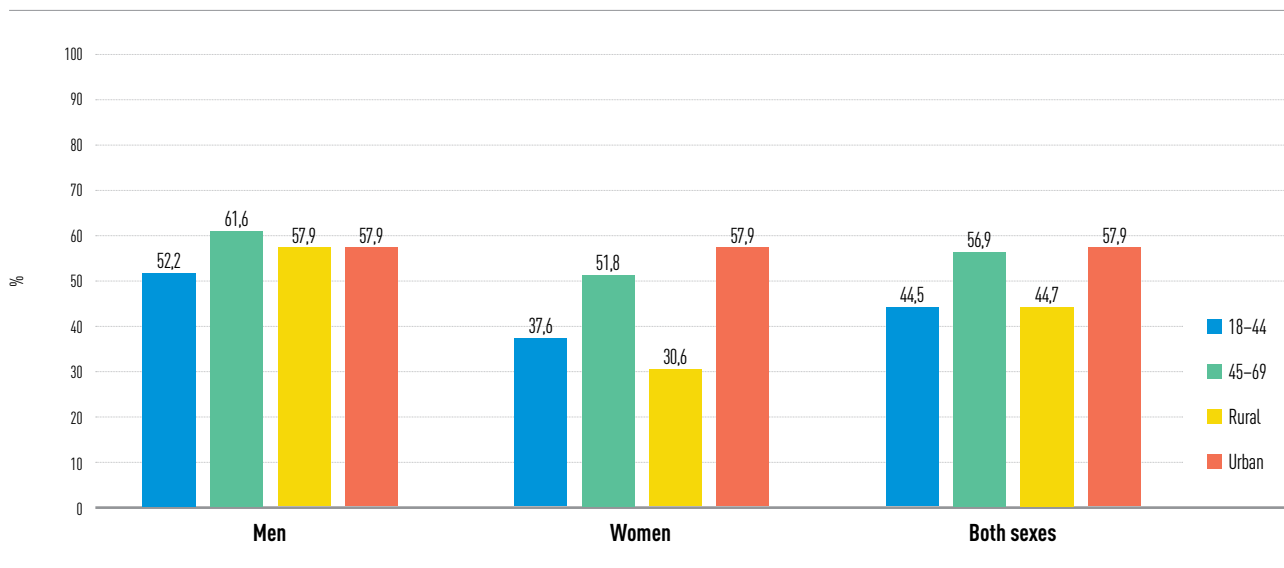


Fig. 37. Percentage of eligible population receiving drug therapy and counselling to prevent heart attacks and strokes, by age, sex and setting

4.15 Summary of combined risk factors

For the purpose of exploring combined risk factors, respondents were placed in one of three categories, based on their possession of five major risk factors (determined by combining the instrument questions from Steps 1 and 2). The five major risk factors were:

- (1) current daily smoker
- (2) less than five servings of fruits and vegetables per day
- (3) low level of activity (<600 MET-minutes per week)
- (4) overweight or obese (BMI \geq 25 kg/m²)
- (5) raised BP (SBP \geq 140 mmHg and/or DBP \geq 90 mmHg or currently on medication for raised BP).

The first category was “0 risk factors”; the second “1–2 risk factors”; and the third “3–5 risk factors”. The percentages of respondents in each category are presented in Table 52. Only 5.8% (4.5–7.1) of all respondents had no NCD risk factors, whereas 61.7% (59.2–64.2) had 1–2 risk factors; the remaining 32.5% (29.9–35.0) had a combination of 3–5 risk factors.

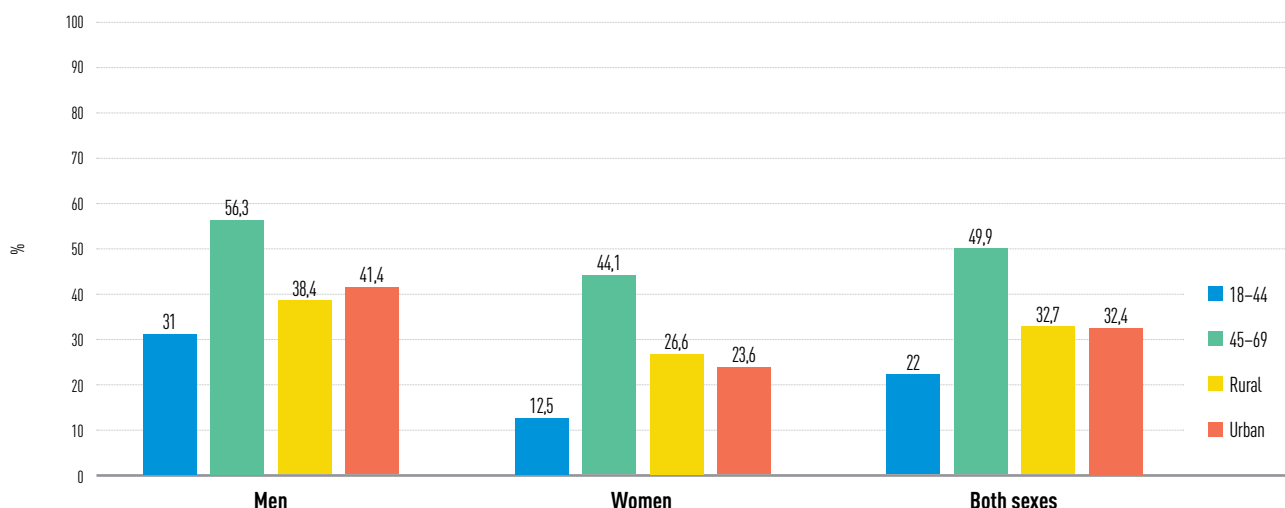
The proportion of men with a combination of 3–5 risk factors (40.0%; 36.0–44.0) was higher than among women (24.9%; 22.1–27.7). In the group with no risk factors, there was no significant difference between males and females (Table 52).

Table 52. Summary of combined risk factors, by sex

Sex	0 risk factors (%)	95% CI	1–2 risk factors (%)	95% CI	3–5 risk factors (%)	95% CI
Men	5.4	3.6–7.3	54.6	50.5–58.6	40.0	36.0–44.0
Women	6.2	4.4–8.0	68.9	65.9–71.9	24.9	22.1–27.7
Both sexes	5.8	4.5–7.1	61.7	59.2–64.2	32.5	29.9–35.0

The percentage of all respondents with 3–5 combined risk factors was higher in the older age group (49.9%; 46.7–53.2) than in the younger group (22%; 18.7–25.3) (Fig. 38). By contrast, the proportion with 1–2 risk factors was higher in the younger group (70.1%; 66.6–73.5) than in the older group (47.8%; 44.7–50.8).

Fig. 38. Percentage of population with 3–5 risk factors, by sex, age and setting



4.16 Mental health/suicide

Of all respondents, 1.2% had seriously considered attempting suicide in the preceding 12 months (Table 53). The percentage of women who had seriously considered attempting suicide in the past 12 months (1.4%) was slightly higher than that of men (1.0%); however, this difference was not statistically significant. No significant difference was observed between urban and rural areas either (Table 54).

Table 53. Percentage of individuals who had considered attempting suicide in the preceding 12 months, by age and sex

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
18–44	1.1	0.0–2.3	1.5	0.7–2.3	1.3	0.5–2.1
45–69	0.9	0.0–1.8	1.1	0.4–1.8	1.0	0.4–1.6
18–69	1.0	0.2–1.9	1.4	0.8–1.9	1.2	0.7–1.7

Age group (years)	Men		Women		Both sexes	
	%	95% CI	%	95% CI	%	95% CI
Rural	0.6	0.0–1.4	0.6	0.1–1.1	0.6	0.1–1.1
Urban	1.4	0.1–2.7	2.0	1.1–2.9	1.7	0.9–2.6
Total	1.0	0.2–1.9	1.4	0.8–1.9	1.2	0.7–1.7

Of the women who had seriously considered suicide, only 25.0% (eight women) had sought professional help. 0.4% of the study population had made a suicide plan in the preceding 12 months. Significantly more women (12 individuals) had made such a plan than men (a single individual). About

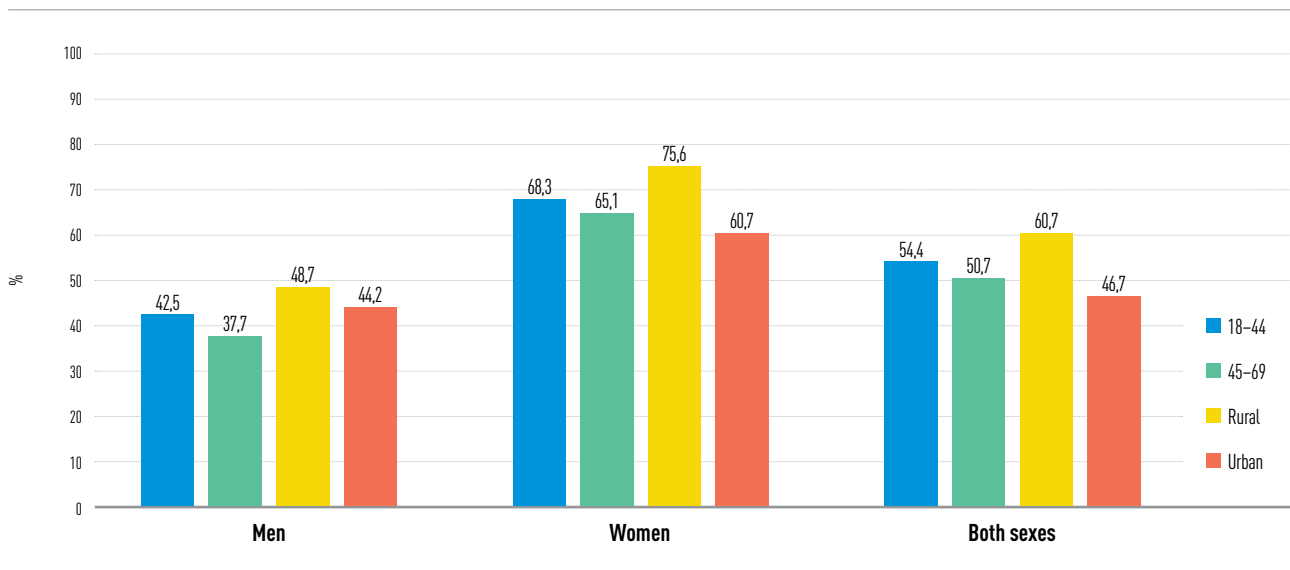
Table 54. Percentage of individuals who had considered attempting suicide in the preceding 12 months, by sex and setting

1.0% of respondents had ever attempted suicide, of whom 30.0% had attempted it in the previous 12 months. Of those who had attempted suicide, about 32.0% reported using medication or drugs to poison themselves, and 26.0% reported using a razor, knife or other sharp instrument. About 0.7% of respondents reported that they had someone in their close family who had attempted suicide, and 0.4% reported that they had someone in their close family who had died from suicide.

4.17 Violence and injury

The percentage of drivers or passengers of a motor vehicle who did not always use a seat belt during the past 30 days was 53.0%. This indicator was higher for women (67.1%) than men (40.8%). Analysed by locality, seat belt use was lower among urban residents than among their rural counterparts (Fig. 39).

Fig. 39. Percentage of drivers or passengers not always using a seatbelt over the past 30 days, by age, sex and setting



The majority (88.3%) of respondents who rode a motorcycle or scooter did not always wear a helmet (86.2% of men, 92.2% of women). Only 5.2% of respondents always used a helmet when riding a bicycle (6.7% of men, 3.3% of women).

The percentage of respondents who had been involved in a road traffic crash over the past 12 months was 2.8%; of these, 30.0% had serious injuries requiring medical attention.

The percentage of respondents who had driven a motorized vehicle after having had two or more alcoholic drinks in the past 30 days was 1.9% (3.6% men and 0.3% women). Overall, 4.4% of respondents (5.1% of men and 3.8% of women) reported that over the past 30 days they had taken a ride in a motorized vehicle in which the driver had consumed two or more alcoholic drinks before driving.

The proportion of respondents who had a non-road traffic-related injury that required medical attention was 4.4%. A breakdown of the different types of

injury revealed that the most common causes of serious injury (other than road traffic accidents) that required medical attention were falls (58.8%), cuts (16.2%) and burns (10.2%) (Fig. 40).

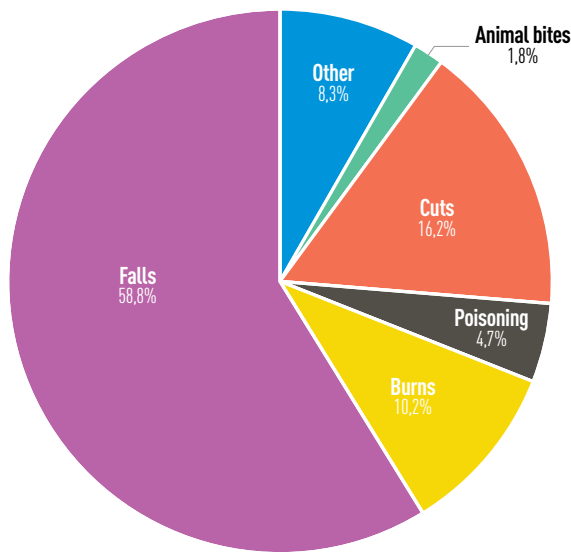


Fig. 40. Percentage of different types of serious injury (other than road traffic accidents) requiring medical attention

Among those injured in non-road traffic-related accidents, 48.2% got injured at home; of these, significantly more were women than men (70.3%; 55.4–85.2 versus 29.2%; 13.8–44.6). Of those injured elsewhere, 12.3% were injured at their workplace or school, 16.5% outdoors on the street, and 10.2% in sports/athletic settings.

About 2.5% of respondents had been involved in a violent incident over the previous 12 months resulting in an injury that required medical attention (3.5% of men, 1.6% of women). Respondents who reported being frightened for their safety (5.8% of the whole study population) claimed that it was due to someone within the family (55.1%), a stranger (26.9%), or a friend or acquaintance (15.0%).

The proportion of respondents who reported being physically abused during childhood by a parent or other adult in the household was 36.1%.

A total 1.0% of respondents reported that they had been sexually abused during childhood (about 0.9% of men, 1.1% of women). About 0.4% of respondents reported being sexually abused during adulthood – 0.47% of men (four individuals) and 0.49% of women (eight individuals).

5. Discussion

5.1 Tobacco

The prevalence of tobacco use, both smoked and smokeless products combined, was 24.0%. One in every two men was a current smoker (48.8%), whereas only 0.2% of women reported smoking at the time of the interview. There could be underreporting among women because of local customs. In comparison with the data obtained in the 2011 STEPS survey in Azerbaijan, the number of current smokers among men had decreased slightly from 49.5% to 48.8%. According to DHS 2006, smoking was common among men of age 15–59 in the Republic of Azerbaijan, with about half reporting that they were smokers (49.8%). SSC data from 2015 indicated that 35.9% of men over 15 years of age reported that they were smokers.

In the new 2017 STEPS survey, the percentage of current smokers among male respondents was higher in the younger age group (49.3%) than in the older age group (47.8%). There was a slight difference in the percentage of current male smokers by place of residence: 49.2% in urban areas and 48.3% in rural areas. The survey showed that men started smoking at 18.7 years, with little difference between the male age groups: 18.3 years for the 18–44 age group and 19.4 years for the 45–69 age group. The mean duration of smoking among male daily smokers was 20.4 years; the duration was longer for older respondents than for those in the younger group (33.9 versus 13.1 years). Among daily smokers, 95.1% reported that they used manufactured cigarettes. The mean number of manufactured cigarettes smoked per day by daily smokers was 18.9 for all age groups.

In DHS 2006, over 90% of current smokers reported that they had smoked 10 or more cigarettes over the previous 24 hours. The likelihood that a man smoked increased with age. The STEPS 2011 survey found that men smoked on average 20 cigarettes per day. The mean age at which tobacco smoking started for daily smokers was around 19 years overall, and the mean duration of smoking was 21.5 years.

In STEPS 2017, among currently smoking male respondents, about 49.5% had tried to stop smoking during the previous year. Nearly a quarter of respondents (24.9%) had been exposed to second-hand smoke at home during the 30 days preceding the survey, while almost one in five (18.3%) had been exposed at the workplace. The greatest level of exposure to smoke was found at the workplace for men (28.4%) and at home for women (23.3%). In STEPS 2011, the greatest exposure level was found in public places for men (76.6%) and at home for women (41.2%). These figures show that smoke exposure significantly decreased between 2011 and 2017. In the 2017 survey, a small percentage of men also reported the use of shisha and smokeless tobacco.

5.2 Alcohol

Current consumption of alcohol occurred almost exclusively among males: 27.6% of men and only 0.8% of women reported that they currently drank alcohol. In the STEPS 2017 survey, the proportion of lifetime abstainers was 70.3%, which was higher than the figure reported in STEPS 2011 (65.7%). According to DHS 2006, 40% of men aged 15–59 had consumed at least one alcoholic beverage in the month prior to the interview. All these figures show a positive trend in decreasing level of alcohol consumption in Azerbaijan.

Regarding place of residence, men in rural areas were more likely to consume alcohol than men in urban areas (28.4% versus 26.9%). About 1.7% of men in the study population drank alcohol every day. These findings correspond to those in STEPS 2011, which reported daily alcohol consumption in 1.8% of men. However, if we compare figures for males who consumed alcohol less than once a month, in STEPS 2011 this indicator was 40.4%, whereas in the 2017 survey it had increased to 46.8%. In STEPS 2017, current male drinkers had consumed at least one alcoholic drink on 3.9 occasions in the past 30 days (in STEPS 2011, the figure was 3.0); current female drinkers did so on 1.8 occasions.

5.3 Diet

The average number of days per week on which fruits and vegetables were consumed was 5.1 for fruits and 5.9 for vegetables. Both values represent an increase on those reported in STEPS 2011, where the figure for fruits was 4.0 and for vegetables 5.0. The largest proportion of respondents of both sexes – 43.6% – consumed 1–2 servings of fruits and/or vegetables per day. About 6.6% of all respondents reported not consuming fruits or vegetables at all – 7.5% of men and 5.6% of women.

When considered by age group, older respondents tended to have more fruits and/or vegetables than younger respondents. Almost 60% of respondents had been advised by a doctor or health worker to eat more fruits and vegetables. However, only 24.1% of respondents had met the WHO recommendation of five or more servings of fruits and/or vegetables per day. The percentage of those eating less than five servings of fruits and/or vegetables on average per day for all respondents was 75.9% (compared to 78.6% in STEPS 2011).

Azerbaijan has a good climate that is favourable for agriculture and even exports some seasonal fruits and vegetables. In spite of this, consumption of these products locally was low. Interestingly, consumption of fruits and vegetables by the urban population exceeded that of the rural population. The likely explanation of this is that people living in rural areas are relatively poor compared to their urban counterparts.

5.4 Dietary salt

Azerbaijani citizens consumed, on average, 10 g of salt per day, almost double the WHO-recommended level of 5 g per day. There was a significant gender difference in mean salt intake, with men consuming 11.4 g per day and women 8.6 g. A quarter of all respondents (25.7%) reported that they added salt before or while eating, with a higher prevalence among men (26.6%) than among women (24.8%); this behaviour was slightly more common in rural areas (24.0%) than in urban ones (22.8%).

The proportion of respondents who often consumed processed food high in salt was 26.6%, with more men (29.6%) reporting this behaviour than women (23.8%); it was also more prevalent in urban areas (30.9%) than in rural ones (21.5%). 73.1% of the study population thought that high salt consumption had adverse health effects, but 24.9% of women and 29% of men did not agree.

5.5 Physical activity

Sufficient physical activity, defined by WHO as at least 2.5 hours of moderate-intensity activity per week, is needed to reduce the risk of developing chronic NCDs. The survey results showed that only about one in five individuals in the study population failed to meet the WHO recommendation. There was no noticeable difference between age groups and genders, but there was a visible difference between places of residence, with urban respondents less often meeting the WHO recommendation than their rural counterparts.

Overall, 56.3% of respondents reported having a high level of physical activity (men 60.3%, women 52.5%). In comparison, the STEPS 2011 survey found that 44.1% of respondents reported having a high level of physical activity, with a greater proportion of men (50.9%) than women (38.3%). All respondents carried out, on average, 191.5 minutes of physical activity per day, with a statistically significant difference between men (215.2 minutes) and women (168.9 minutes). This represented a considerable increase in the level of activity in the period following the STEPS 2011 survey, when the corresponding figures for men were 212 minutes, for women 139 minutes, and for both sexes 172 minutes.

The median duration of all physical activity carried out daily reported by all respondents was 128.6 minutes – 145.7 minutes among men and 120 minutes among women. The median time spent carrying out physical activity was lower than the mean time. The intensity of physical activity was inversely related to age in men, but this relationship was not observed in women. 91.4% of women did not engage in vigorous physical activity, compared to 71.9% in men. Based on these findings, it is important that the adult population, especially women, are advised to engage more intensively in physical activity.

5.6 Cervical cancer screening

Access to cervical cancer screening is necessary for the prevention and control of one of the leading cancers in Azerbaijan. Only about one in 10 (11.3%) women aged 30–49 years had ever had a screening test for cervical cancer. Women aged 18–69 in urban areas reported that they had undergone cervical cancer screening more than twice as often as their rural counterparts.

5.7 Overweight and obesity

Anthropometric measurements such as height, weight, and waist and hip circumference were provided to calculate BMI and mean waist-to-hip ratio. Height and weight measurements showed that men were substantially taller and heavier than women. The same trend was observed in men and women in the 2011 STEPS survey. Mean BMI for all respondents was 26.0 kg/m², and was higher for women (26.4 kg/m²) than for men (25.5 kg/m²). Mean BMI was higher in the older age group than in the younger. Of all respondents, 2.8% were underweight, 41.7% had normal weight, 34.8% were overweight, and 20.6% were obese. The prevalence of obesity was substantially higher in women (26.5%) than in men (14.7%); this was more than 1.8 times higher, compared to a ratio of 1.7 in STEPS 2011. According to DHS 2011, the mean BMI for women aged 15–49 was 25.2 kg/m², and the percentage of obese women in the same age group was 18.6%. Thus, the results from various surveys tend to point in the same direction, showing that overweight and obesity are especially problematic for women in Azerbaijan – a situation that is likely to get worse in the absence of concrete policy actions to address the issue.

5.8 Raised BP (hypertension)

Mean SBP in the survey population was 125.9 mmHg, with higher values found in men (127.0 mmHg). Mean DBP was 81.2 mmHg, with slight differences between the sexes. These values are lower than those derived from the STEPS 2011 survey (SBP 137 mmHg, DBP 84 mmHg).

The mean heart rate of respondents was 77.2 bpm, with higher values for women (77.9) than for men (76.4). The same trend was observed in STEPS 2011, where the mean heart rate for women (84) was higher than for men (81).

Of all respondents, 33.1% reported that their BP had never been measured. Compared to the value obtained in STEPS 2011 (17%), the result for this indicator had almost doubled. A total of 38.4% of men had never had their BP measured, compared with 28% of women. The percentage of women diagnosed with high BP within the preceding 12 months was higher than that of men (18.9% versus 13.9%).

According to DHS 2006 and 2011, the prevalence of hypertension among women fell from 16.4% in 2006 to 13% in 2011.

The percentage of men who had not taken any medication for raised BP was significantly higher than that of women. The survey revealed that, across the entire sample population, the prevalence of hypertension (SBP

≥140 mmHg and/or DBP ≥90 mmHg, excluding those on medication for raised BP) was 21.6%. This figure rose to 29.7% when those currently using medication were included. There was no significant difference in hypertension prevalence between men and women (29.3% versus 30.1%). The percentage of respondents with controlled BP was higher in urban areas (12.5%) than in rural areas (7.2%).

Some 65.4% of respondents with increased BP were not taking any medication, with a higher proportion of men (72.0%) than women (59.2%). The percentage of respondents diagnosed with raised BP currently taking medication prescribed by a doctor or health worker increased with the age of respondents, reflecting the natural history of hypertension (from 29.1% in the 18–44 age group to 57.5% in the 45–69 age group).

Efforts made to increase respondents' awareness of the lifestyle modifications needed to address raised BP were inadequate. Specifically, 47.5% of respondents had received advice to lose weight, 52.1% to reduce fat in their diet, 54.7% to start or to do more physical activity, and only 31.7% to stop smoking or not to start. These findings revealed that awareness-raising efforts to modify lifestyle factors contributing to hypertension were generally insufficient.

5.9 Raised blood glucose (diabetes mellitus)

Of the survey population, 71.8% had never had their blood glucose measured. This marked an increase on the figure obtained in the STEPS 2011 survey, where 62.3% of all respondents answered that their blood sugar had never been measured. The prevalence of diabetes diagnosed within the preceding 12 months was 4.2% (men 3.1%, women 5.3%), while 0.5% of respondents had been diagnosed but not within the past 12 months. Among those with diabetes, 21.9% were receiving insulin and 76.0% were taking oral drugs for diabetes. Some differences were identified between the sexes, with 72.9% of men and 77.8% of women taking medication for diabetes. A greater difference was found in those taking insulin (men 17.7%, women 24.2%). The prevalence of IFG was 5.0% (men 5.0%, women 4.9%). For all respondents, IFG levels were almost twice as high in urban areas as in rural ones.

The prevalence of diabetes mellitus, including those on medication, for all respondents was 6.5% (women significantly more than men – 7.9% versus 5.2%). Again, the proportion in urban areas was more than twice as high as in rural areas – 5.3% versus 2.6%. The prevalence of self-reported diabetes was a little lower (4.7%) than the prevalence of raised blood glucose or currently being on medication for diabetes (6.5%). These findings indicate that screening efforts to detect elevated blood glucose levels are currently insufficient.

5.10 Abnormal lipids

Over a quarter of the study population (26.9%) had raised blood cholesterol (≥5.0 mmol/L), including those currently on medication for hypercholesterolemia. Women accounted for a significantly larger proportion of this figure than men (31.3% compared to 22.3%). However, the figure represented a fall in comparison with previous years.³⁴

5.11 CVD risk and history of CVDs

The percentage of those aged 40–69 years with a 10-year cardiovascular risk $\geq 30\%$ or with existing CVD was 12.6% (men 13.3%, women 12.0%). Within this group, the prevalence among people aged 55–69 was more than twice as high as among those aged 40–54 (18.8% versus 8.6%). From this group of respondents, more than half (51.7%) were receiving drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes. The percentage of men in this group of respondents was higher than that of women (57.9% versus 45.6%). The percentage of all respondents who had had a heart attack or chest pain from heart disease (anginal) or a stroke was 6.4%; of these, only 4.6% were taking aspirin and 1.7% statins to prevent or treat heart disease.

5.12 Combined risk factors

Only 5.8% of all respondents did not have any risk factors for NCDs; 61.7% had 1–2 risk factors and the remaining 32.5% a combination of 3–5 risk factors. In the 2011 STEPS survey, the percentage of respondents who did not have any risk factors was 3.6%, while 43.9% had 3–5 risk factors. The percentage of all respondents with 3–5 combined risk factors was markedly higher in the older age group (49.9%) than in the younger group (22%).

The proportion of men with a combination of 3–5 risk factors (40.0%) was higher than that of women (24.9%). These results show that the current high prevalence of NCD risk factors among Azerbaijani men, in particular, has a negative impact on their life expectancy and quality of life.

5.13 Injuries

Regular use of seat belts is one of the important measures in mitigating the potential negative impacts of traffic accidents. Another major cause of accidents is drink-driving. Despite the fact that, according to SSC data, the number of traffic accidents was decreasing from year to year, 760 people died in 2016 as a result of traffic accidents and about 40 road accident cases were associated with drink-driving. According to STEPS 2017 data, more than half of drivers or passengers of a motor vehicle (53.0%) had not always used a seat belt over the preceding 30 days; the figure was higher for women (67.1%) than men (40.8%). Overall, 4.4% of respondents reported that they had taken a ride in a motorized vehicle where the driver had consumed two or more alcoholic drinks before driving. The lower rate of seat belt use by women than men could be explained by the fact that significantly more men currently drive and hence that women are less informed about road traffic safety issues. Similar to seat belt use, the rate of helmet use by motorcycle and bicycle riders was low.

6. Recommended actions

The main findings of STEPS 2017, the second NCD risk factor survey in the Republic of Azerbaijan, were as follows.

Overall, tobacco use was relatively low, but very high among men. Alcohol consumption was also high among males. Lifestyle factors such as overweight and obesity were found to be generally high, especially among females. The prevalence of both diagnosed and undiagnosed hypertension and diabetes mellitus was found to be high. The prevalence of abnormally high levels of blood lipids was also found to be significant. Almost all the survey respondents had at least one of the major NCD risk factors.

Based on these findings, the key recommendations are as follows.

- Based on the information generated by the survey, existing NCD policies and strategies should be adapted and tailored to effectively tackle the prevailing NCD risk factors in the Republic of Azerbaijan. The main focus should be on tobacco use, healthy diet, physical activity, and prevention and control of hypertension and diabetes. Examples of possible actions include increasing leisure time activity; raising rates of screening for elevated BP, glucose and cholesterol; and addressing the dangers of second-hand smoke in the workplace. Effective implementation of these policies is urgent.
- It is necessary to ensure that the information obtained by this research reaches all stakeholders, especially policy-makers, programme managers and researchers in the design and implementation of interventions for prevention and control of NCDs.
- In order to promote interventions for prevention and control of NCDs and to reduce the risk factors associated with them, a comprehensive approach is needed that will involve all sectors, including the Ministries of Health, Education, Youth and Sport, and Trade, mass media and local nongovernmental organizations.
- NCD prevention and control programmes should be integrated into other primary health-care services, such as reproductive health, school health, adolescent care, and care of the elderly.
- National surveys should be conducted every three to five years to measure trends in NCD risk factors over time and to evaluate NCD prevention and control programmes; this should include further expansion of risk factors and updating of performance indicators.
- The national health system should be provided with the necessary infrastructure, human resources, diagnostic tools, drugs and other equipment to adequately address NCD problems at all levels.

- NCD screening/early detection services should be improved, strengthened and integrated into primary health-care services. For example, a special tool such as the globally promoted WHO Package of Essential Noncommunicable (PEN) Disease Interventions could be adopted in primary health-care services to increase the coverage of NCD services.³⁵ Facilities should be equipped with basic diagnostic and management infrastructure. Essential NCD drugs should be made more available and accessible, especially to the poor. Primary health-care workers' competencies in counselling should be improved. Training and upgrading of primary health-care providers' knowledge and skills in NCD risk factors should be strengthened.
- A multisectoral agency with extensive authority and a large budget to oversee NCD prevention and control activities should be established under the direction of the Ministry of Health. In addition, a comprehensive national surveillance and monitoring framework should be implemented to measure progress towards national goals and targets for NCD prevention and control. The monitoring and evaluation system should comprise both strategy assessment and problem detection and elimination, as well as providing the information required to implement appropriate action. Currently, however, there are no nationally representative data or established systems for ongoing data collection, to guide NCD-related policy and decision-making. To develop and maintain such a system, public health research should receive adequate funding, particularly to study cost-effective measures and population-level interventions.
- Health workers should be encouraged to act as role models and be motivated to give healthy lifestyle advice to the public, because many respondents in this survey reported that the advice on health and nutrition given by health professionals was less than optimal.
- The public's level of knowledge about NCDs should be improved at the individual level in certain areas, including knowledge of body weight, BP, etc. ("know your numbers").
- There should be brainstorming of ways to enhance health education programmes, including targeted use of mass media and new communication technologies.
- Revolutionary changes are taking place in medical information technologies, including telemedicine, artificial intelligence, portable mobile devices and self-care devices, which in the near future will change the ways of preventing and treating NCDs and other diseases. The national health system needs to be ready for these changes and to adequately address them in preparing policies, self-care programmes for elderly patients to improve disease prophylaxis, monitoring and control.
- Innovative communication technologies, including social media, video channels and medical applications for smartphones, should also be used to provide adequate health education at the level of health-care services.

- Routine and regular physical examinations, including measurements of arterial BP, blood sugar, cholesterol and weight, should be promoted.
- According to both STEPS surveys, the prevalence of tobacco use did not actually change between 2011 and 2017 and remains at a high level. An attempt should be made to enforce existing law relating to tobacco and prevention of second-hand smoking. For example, it is necessary to develop strong monitoring mechanisms to ensure that the law is observed and to identify new challenges, such as electronic cigarettes, shisha and indoor smoking, and measures that target smoking among young people.
- Comprehensive alcohol control strategies should be developed, focusing on reduction of alcohol consumption among young people. Comparison of the 2011 and 2017 surveys shows a positive downward trend in the level of alcohol consumption in Azerbaijan. However, specific areas need to be targeted: for instance, men in urban areas are more likely to consume alcohol than their rural counterparts, so healthy lifestyle advice needs to be directed more intensively at urban males.
- Interventions should be introduced to increase consumption of fruits and vegetables in the Azerbaijani population, which is low in spite of the country's favourable climate for agriculture. National recommendations encouraging good diet and physical activity should be developed further and promoted through the media. The NCD prevention and control strategy should also include targeted programmes to improve consumption of fruits and vegetables, for instance among females and in the rural population.
- Many people are not aware of the harm caused by salty foods, so public information activity in this area should be intensified. In addition, comprehensive policies and structural interventions should be devised and implemented in all sectors to improve access to healthy foods for all people. Other measures should include mandatory food labelling, bans on advertising of unhealthy foods in mass media, taxes on unhealthy foods, and reformulation of manufactured food standards in terms of salt, sugar and fats.
- Action is required at the national level to develop community-based physical activity programmes that meet local health needs. In all sectors, interventions are needed to promote physical activity in different settings and to develop the required access infrastructure. Health education programmes are helpful in raising awareness of healthy lifestyles and should target all population subgroups. School settings are particularly important in empowering younger people to make healthy choices. Azerbaijan is close, geographically and culturally, to eastern countries which are actively practising health-giving and healing systems such as yoga, meditation and naturopathy; these cover many aspects of healthy lifestyle, behaviours and food habits, and should be promoted and integrated into the primary health-care system.

- A Pap smear screening programme should be introduced at government level as a routine service in health-care settings. At the same time, it is necessary to increase women's awareness of the importance of undergoing this test.
- The incidence of road traffic accidents shows that improved education to encourage behavioural change is needed in this area. At the same time, it is essential that appropriate actions and measures are properly enforced.

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