

The Ministry of Health of the Republic of Azerbaijan

The Public Health and Reform Center

**National Survey
on Risk Factors
for Chronic
Noncommunicable
Diseases in
Azerbaijan**

2011

Final Report

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Abbreviations

AZN	Azerbaijani Manat
CI	Confidence Interval
BMI	Body Mass Index
DBP	diastolic blood pressure
DHS	Demographic and Health Survey
ETS	environmental tobacco smoke
HSRP	Health Sector Reform Project
MOH	The Ministry of Health
NCDs	non-communicable diseases
PHRC	The Public Health and Reform Center
SBP	systolic blood pressure
SSC	The State Statistical Committee
WHO	World Health Organization

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1. Executive Summary

The survey on the prevalence of risk factors for noncommunicable diseases in Azerbaijan is the first nationwide cross-sectional survey conducted from February to April 2011 by using the WHO Non-Communicable Disease Stepwise survey methodology. The goal of the survey was to determine the prevalence of risk factors for noncommunicable diseases and to establish the baseline information for the prevention and control of these diseases in the country.

Two-stage random cluster sampling was employed for this study. The sampling frame was all population of Azerbaijan aged 18 years and above with the sample size of 2400. The survey data was obtained from 2000 adult participants with 83.3% response rate.

The following are the key findings of the survey:

- The prevalence of **smoking** and daily smoking was overall 22.9% and 21.3% respectively. However, this prevalence was almost 100 times higher for men than for women (48.7% vs 0.5%). The mean starting tobacco smoking age of daily smokers was overall around 19 years. Furthermore, the study found high levels of environmental tobacco smoke exposure or passive smoking at home, public places and at workplace. The greatest exposure was found at public places for men (76.6%) and at homes for women (41.2%).
- In regards to **alcohol** drinkers, 14.0% of the total respondents were reportedly current drinkers in the past 30 days, whereas 9.9% drank in the past 12 months but not currently. The proportions of current (past 30 days) and non-current drinkers were significantly higher among male respondents than female respondents (26.9% and 18.6% vs. 1.7% and 1.6% respectively).
- **Fruit and/or vegetable** consumption was generally low, with the majority of the respondents (84.9%) reported to consume less than 5 servings per day with no significant differences among age groups and sexes. More than half of households (54%) used unsaturated oil such as butter or ghee for cooking.

- In terms of **physical activity**, 47.9% of the total respondents were engaged in high level of activities, and the amount of time spent in physical activity was on average around 144 minutes per day. Male and younger respondents were more physically active than female and older respondents.
- In regards to **physical measurements**, the Body Mass Index (BMI) of the total respondents averaged overall 27.0, and the percentage of **overweight** and **obese** was 35.8% and 21.9% respectively. The share of obese respondents was substantially higher among women than among men (27.2% and 16.4% respectively).
- In total, respondents with mild to severe **raised blood pressure** (SBP \geq 140 and/or DBP \geq 90mmHg) and moderate to severe raised blood pressure (SBP \geq 160 and/or DBP \geq 100 mmHg) excluding those currently on medication for **hypertension**, were on average 36.4% and 17.8% respectively. The share of respondents with mild to severe and moderate to severe raised blood pressure or currently taking medication was respectively 39.4% and 24.9%.
- Overall, 16.7% of the respondents had impaired fasting glycaemia (glucose level equal or greater than 100 mg/dl or 5.6 mmol/l and less than 110 mg/dl or 6.1 mmol/l), and 10.6% were found to have **diabetes** (glucose level equal or greater than 110 mg/dl or 6.1 mmol/l)¹.
- Finally, the survey revealed that 62.7% of the surveyed respondents had one to two risk factors for developing noncommunicable diseases, whereas 32.4% had three or more risk factors. The proportion of respondents who had three or more risk factors was higher in men than in women.

¹ Values for capillary blood

2. Introduction

This report presents the findings and recommendations from the national survey on risk factors for chronic noncommunicable diseases conducted in 2011 in Azerbaijan.

With the epidemiologic transition the main burden of diseases shifted from infectious diseases to chronic noncommunicable diseases (NCDs), which have become a major challenge to global development now. The World Health Organization (WHO) Global Status Report on NCD from 2010 stated that the mortality attributed to the major noncommunicable diseases (NCDs) accounted for about 63% of global deaths. NCD deaths are projected to increase by 15% globally between 2010 and 2020.¹

Among other conditions, chronic noncommunicable diseases include circulatory diseases, chronic respiratory diseases, cancer and diabetes. According to the State Statistical Committee of Azerbaijan, these diseases were the leading mortality causes in the country representing 79% of all deaths in 2009.² Most of these diseases are attributed to common preventable risk factors such as tobacco use, excessive alcohol consumption, unhealthy nutrition, and physical inactivity.

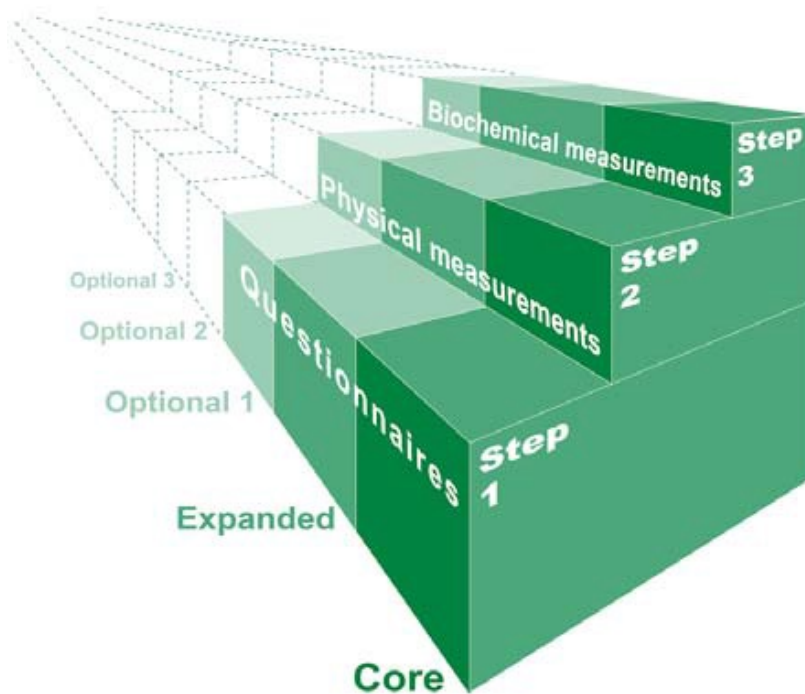
In Azerbaijan, the data on prevalence of main NCDs and their risk factors are largely based on health provider records, whereas a population-based national surveillance system is lacking. Collection of timely and ongoing data on the magnitude and trends of NCDs and their risk factors is needed to inform policy development, to identify appropriate prevention interventions and to evaluate their effectiveness. Recognizing this need and based on the Ministry of Health letter #02/19-4489 from September 27, 2010, the Public Health and Reform Center launched the first national survey for NCD risk factors in Azerbaijan, which allowed establishing national baselines in this area. It is envisioned that the survey will be conducted regularly thus forming a foundation for a national surveillance system for NCD risk factors. Once fully functional, this surveillance system will serve the following objectives:

- To collect consistent data across the country;
- To develop standardized tools to enable comparisons over time and across regions of the country, as well as international comparison;
- To prevent chronic disease epidemics before they occur;

- To help health services plan and determine public health priorities;
- To predict future caseloads of chronic diseases;
- To monitor and evaluate population-wide interventions

The survey was based on WHO STEPS methodology, which is widely used all over the world and meets above-mentioned objectives. STEPS methodology utilizes stepwise approach that starts with gathering key information on risk factors with a questionnaire, then moves to simple physical measurements and then to more complex collection of blood samples for biochemical analysis. The Figure 1 illustrates the general concept of the STEPwise approach:

Figure 1. The general concept of STEPwise approach to NCD risk factor surveillance.



The more detailed information on STEPS methodology is provided in the Methods section of this report.

3. Methods

3.1. Survey tool

The survey consisted of the interviews using the adapted STEPS questionnaire (STEP 1), physical measurement of the study participants (STEP 2) and blood testing for glucose (STEP 3). Glucose measurement was conducted using portable glucometers. Due to financial and logistical considerations, cholesterol and triglyceride measurements were not conducted.

The survey content is presented below:

STEP 1:

- Demographic data:
 - Gender
 - Age
 - Education
 - Employment
 - Marital status
 - Income level and expenditure profile
- Behavioral data:
 - Tobacco use
 - Alcohol consumption
 - Diet
 - Physical activity
- History of blood pressure and diabetes

STEP 2:

- Blood pressure
- Heart rate
- Height
- Weight
- Waist circumference

STEP 3:

- Blood glucose

The STEP questionnaire was translated into Azerbaijani, then reviewed by the representatives from the WHO Country Office and HSRP and piloted on accessible sample with subsequent minor modifications.

3.2. Survey population and sampling design

Two-stage random cluster sampling was employed for this study. The sampling frame was all population of Azerbaijan aged 18 years and above. According to the Central Election Commission of Azerbaijan, there were 4,598,629 people in this age group in the country in 2010.³ The following formula was used to calculate the sample size for the study:

$$N = \frac{z^2 \times p \times (1-p)}{c^2},$$

where:

Z = 1.96 for confidence level of 95%

p = estimated proportion in the population (0.5)

C = 2% confidence interval (the magnitude of change we want to be able to detect)

Using this formula, the sample size was identified at 2,400. Considering the 20% non-response rate recommended by STEPS Manual, 2,400 respondents were selected for data collection.

The survey team used the database of Central Election Commission for sampling purposes for several reasons: (i) it contains the data on all voters (all citizens above 18 years), which corresponds to the study population; (ii) it contains the most recent data updated for the parliamentary elections conducted in November 2010; (iii) the data are divided by clusters. Azerbaijan has 11 economic regions that are identified considering economic and geographic specifics, which were considered important to the study subject. Therefore, the entire sample was divided in 11 strata according to the economic regions. The allocation of the sample by strata was done based on the number of election points in each region. For logistical purposes Nakhchivan was not included into the study. To ensure more efficient use of the resources, it was decided to conduct 20 interviews in each election post regardless of its population size. Using SPSS software, 100 election posts were randomly selected out of 4,833 posts existing in the country (see Table 1).

Table 1. Allocation of the sample by economic regions of Azerbaijan.

Economic region	Number of election posts	% of total election posts	Sample allocation
Baku City	886	18.1	18x24=432
Absheron	198	4.1	4x24=96
Ganja-Gazakh	654	13.4	14x24=336
Sheki-Zagatala	388	7.9	8x24=192
Lankaran	555	11.4	11x24=264
Guba-Khachmaz	353	7.2	7x24=168
Aran	1,037	21.2	21x24=504
Mountainous Shirvan	218	4.5	5x24=120
Upper Garabag	272	5.6	6x24=144
Kalbajar-Lachin	212	4.3	4x24=96
Other	110	2.3	2x24=48
Total	4,883	100.0	2,400

The voter lists for each randomly selected election post were obtained from the official website of Central Election Commission. Again, using SPSS software final respondents for the survey were randomly identified from the voter lists. The final respondent list was adjusted to ensure that its female-to-male ratio corresponds to the national ratio.

3.3. Survey implementation

Twenty surveyors and five monitors were recruited for the survey using predefined criteria such as previous experience in population-based health surveys, healthcare background and other. The interviewers and monitors attended 3-day training where the STEPS survey tool was presented and discussed.

As part of the preparation to field activities, ten teams were created each consisting of two surveyors. Each team received individual itinerary and work plan. Each monitor was assigned two surveyor teams for supervision in the field. The role of the monitors was to oversee the data collection process, to assist the surveyors if problems arise and to check the filled questionnaires for completeness.

The data collection in the field started on February 23, 2011 and lasted approximately 30 days.

Six PHRC staff members with appropriate skills were identified and recruited for data entry, which was conducted in parallel to data collection. The data was entered and analyzed using SPSS software version 17.

4. Results

4.1. Response rate

The planned sample for the study was 2400 households. The response rate was 83.3% for Step 1 and Step 2, and 83% for STEP 3 of the survey.

4.2. Demographic characteristics

Table 2 presents the distribution of the study participants by gender and age groups. Overall, the share of female respondents was higher than male (54.4% and 45.7% respectively). When considered by age, the greatest proportion of respondents was in 45-54 years age group (25.6%). The proportion of male respondents was greater than female only in 25-34 years age group (51.3% vs. 48.7% respectively).

Table 2. Distribution of the respondents by age and gender.

Age Group	Men			Women			Both Sexes		
	N	Row N %	Col N %	N	Row N %	Col N %	N	Row N %	Col N %
18 – 24	121	47.6%	13.3%	133	52.4%	12.2%	254	100.0%	12.7%
25 – 34	211	51.3%	23.1%	200	48.7%	18.4%	411	100.0%	20.6%
35 – 44	168	43.4%	18.4%	219	56.6%	20.1%	387	100.0%	19.4%
45 – 54	224	43.8%	24.5%	287	56.2%	26.4%	511	100.0%	25.6%
55 – 64	102	40.8%	11.2%	148	59.2%	13.6%	250	100.0%	12.5%
65 and older	87	46.5%	9.5%	100	53.5%	9.2%	187	100.0%	9.4%
Total	913	45.7%	100.0%	1087	54.4%	100.0%	2000	100.0%	100.0%

The mean number of years of education (excluding pre-school years) was 10.8 with schooling years longer in men than in women (11.2 and 10.5 respectively). Interestingly, the greatest number of schooling years was observed among the youngest age group of 18-24 years, which might be explained by increasing the duration of secondary education from 10 years to 11 years introduced in 1990s (see Table 3).

Table 3. Mean number of years of education among the respondents by age groups and gender.

Age Group	Men		Women		Both Sexes	
	N	Mean	N	Mean	N	Mean
18 – 24	121	11.2	133	11.3	254	11.3
25 – 34	211	11.3	200	11.1	411	11.2
35 – 44	168	11.1	219	10.5	387	10.8
45 – 54	224	11.6	287	10.9	511	11.2

55 – 64	102	12.1	148	10.5	250	11.2
65 and older	87	9.6	100	7.0	187	8.2
Total	913	11.2	1087	10.5	2000	10.8

The proportion of female respondents who did not attend any formal school was greater in comparison to male respondents (3.1% vs. 1.5% respectively). This difference was caused mainly by higher share of uneducated persons among women above 55 years of age in comparison to men of the same age, whereas among younger age groups no significant difference was found. Significantly greater proportion of male respondents had university education in comparison to female respondents (15.8% vs. 10.5% respectively). Interestingly, the greatest proportion of university-educated people was observed in 55-64 years age group, and this finding was consistent for both sexes (see Table 4).

Table 4. Highest level of education among the respondents.

Age Group	N	No formal school	Primary school completed	Secondary school completed	High school completed	Professional-technical Institutions	Secondary specialized education	University (not completed)	University completed
Men									
18 - 24	121	2.5%	0.8%	11.6%	59.5%	2.5%	4.1%	10.7%	8.3%
25 - 34	211	1.4%	4.3%	13.7%	51.2%	3.3%	5.7%	1.9%	18.5%
35 - 44	168	0.6%	1.2%	9.5%	43.5%	17.9%	13.7%	1.8%	11.9%
45 - 54	224	0.4%	0.9%	4.5%	44.6%	12.5%	18.8%	2.2%	16.1%
55 - 64	102	1.0%	1.0%	11.8%	25.5%	9.8%	20.6%	1.0%	29.4%
65 and older	87	5.7%	16.1%	23.0%	18.4%	9.2%	16.1%	1.1%	10.3%
Total	913	1.5%	3.2%	11.1%	43.3%	9.4%	12.8%	3.0%	15.8%
Women									
18 - 24	133	1.5%	5.3%	15.0%	45.1%	0.8%	9.8%	13.5%	9.0%
25 - 34	200	1.0%	6.5%	18.0%	39.5%	2.5%	17.5%	1.0%	14.0%
35 - 44	219	1.4%	1.8%	15.1%	57.5%	4.6%	11.4%	0.0%	8.2%
45 - 54	287	0.7%	2.4%	16.0%	42.5%	6.6%	20.9%	1.0%	9.8%
55 - 64	148	4.7%	4.7%	18.2%	34.5%	1.4%	19.6%	0.7%	16.2%
65 and older	100	18.0%	29.0%	22.0%	15.0%	0.0%	11.0%	1.0%	4.0%
Total	1087	3.1%	6.2%	16.9%	41.7%	3.4%	15.9%	2.3%	10.5%
Both Sexes									
18 - 24	254	2.0%	3.1%	13.4%	52.0%	1.6%	7.1%	12.2%	8.7%
25 - 34	411	1.2%	5.4%	15.8%	45.5%	2.9%	11.4%	1.5%	16.3%
35 - 44	387	1.0%	1.6%	12.7%	51.4%	10.3%	12.4%	0.8%	9.8%
45 - 54	511	0.6%	1.8%	11.0%	43.4%	9.2%	20.0%	1.6%	12.5%

55 - 64	250	3.2%	3.2%	15.6%	30.8%	4.8%	20.0%	0.8%	21.6%
65 and older	187	12.3%	23.0%	22.5%	16.6%	4.3%	13.4%	1.1%	7.0%
Total	2000	2.4%	4.8%	14.3%	42.4%	6.2%	14.5%	2.6%	12.9%

Azerbaijanis represented 90.8% of the respondents followed by Talish, Lezgis, Avars and Russians (see Table 5).

Table 5. Ethnic composition of the survey participants.

Ethnicity	N	Percent
Azerbaijani	1815	90.8
Talish	71	3.6
Lezgi	49	2.5
Avar	19	1.0
Russian	15	0.8
Ingiloy	12	0.6
Akhiska Turkish	7	0.4
Other	12	0.6
Total	2000	100.0

Around 74% of the respondents were currently married. However, the proportion of currently married was higher for men than for women (77.7% vs. 70.7%). Furthermore, the remaining respondents were overall single or never married (14.7%), divorced or separated (2.7%), and widowed (8.7%). The proportion of widows was almost 5 times higher in women than in men, and tended to increase with age (see Table 6).

Table 6. Marital status of the respondents.

Age Group	N	Single/ Never married	Currently married/ Living together	Divorced/ Separated	Widowed	Refused
Men						
18 – 24	121	82.6%	17.4%	0.0%	0.0%	0.0%
25 – 34	211	21.3%	78.7%	0.0%	0.0%	0.0%
35 – 44	168	7.1%	88.7%	4.2%	0.0%	0.0%
45 – 54	224	2.2%	95.5%	1.3%	0.9%	0.0%
55 – 64	102	2.0%	95.1%	1.0%	2.0%	0.0%
65 and older	87	1.1%	71.3%	2.3%	25.3%	0.0%
Total	913	18.1%	77.7%	1.4%	2.8%	0.0%
Women						

18 – 24	133	54.1%	45.9%	0.0%	0.0%	0.0%
25 – 34	200	14.5%	79.0%	5.0%	1.5%	0.0%
35 – 44	219	5.0%	85.8%	6.4%	2.7%	0.0%
45 – 54	287	5.2%	78.0%	4.5%	12.2%	0.0%
55 – 64	148	1.4%	74.3%	0.7%	23.6%	0.0%
65 and older	100	0.0%	28.0%	3.0%	68.0%	1.0%
Total	1087	11.9%	70.7%	3.8%	13.5%	0.1%
Both Sexes						
18 – 24	254	67.7%	32.3%	0.0%	0.0%	0.0%
25 – 34	411	18.0%	78.8%	2.4%	0.7%	0.0%
35 – 44	387	5.9%	87.1%	5.4%	1.6%	0.0%
45 – 54	511	3.9%	85.7%	3.1%	7.2%	0.0%
55 – 64	250	1.6%	82.8%	0.8%	14.8%	0.0%
65 and older	187	0.5%	48.1%	2.7%	48.1%	0.5%
Total	2000	14.7%	73.9%	2.7%	8.7%	0.0%

One in every five respondents was a government employee with significantly higher proportion of those working for the government among men as compared to women (22.1% vs. 19.8% respectively). Approximately six times as many men as women were either non-government employees or self-employed. Around 42% of the female respondents were housewives. One in every six respondents was unemployed despite being able to work. The share of such persons was two times greater among men than among women (23.0% vs. 11.4%) and was decreasing with age (see Table 7).

Table 7. Employment status of the respondents.

Age Group	N	Refused	Government employee	Non-government employee	Self-employed	Student	Retired	Homemaker	Unemployed (able to work)	Unemployed (unable to work)	Other
Men											
18 – 24	121	0.0%	7.4%	18.2%	19.0%	9.9%	0.8%	0.0%	43.0%	1.7%	0.0%
25 – 34	211	0.0%	18.5%	27.0%	21.3%	0.5%	1.4%	0.0%	28.4%	1.9%	0.9%
35 – 44	168	0.6%	22.0%	22.0%	19.6%	0.0%	3.0%	0.0%	27.4%	4.2%	1.2%
45 – 54	224	0.0%	29.0%	22.3%	21.4%	0.0%	6.7%	0.0%	16.5%	4.0%	0.0%
55 – 64	102	0.0%	45.1%	10.8%	8.8%	0.0%	17.6%	0.0%	14.7%	2.9%	0.0%
65 and older	87	0.0%	6.9%	2.3%	1.1%	0.0%	88.5%	0.0%	0.0%	1.1%	0.0%
Total	913	0.1%	22.1%	19.6%	17.4%	1.4%	13.0%	0.0%	23.0%	2.8%	0.4%
Women											
18 – 24	133	0.0%	5.3%	3.8%	0.0%	18.0%	0.8%	42.9%	27.8%	1.5%	0.0%

25 – 34	200	0.0%	22.0%	5.5%	1.5%	0.0%	0.5%	52.0%	17.0%	1.5%	0.0%
35 – 44	219	0.0%	17.4%	4.6%	4.1%	0.0%	1.8%	59.8%	10.0%	2.3%	0.0%
45 – 54	287	0.0%	24.0%	2.8%	4.2%	0.0%	12.9%	44.3%	9.4%	2.4%	0.0%
55 – 64	148	0.0%	21.6%	0.7%	3.4%	0.0%	50.0%	20.3%	2.7%	1.4%	0.0%
65 and older	100	0.0%	3.0%	0.0%	0.0%	0.0%	92.0%	4.0%	0.0%	1.0%	0.0%
Total	1087	0.0%	17.8%	3.2%	2.7%	2.2%	19.2%	41.7%	11.4%	1.8%	0.0%
Both Sexes											
18 – 24	254	0.0%	6.3%	10.6%	9.1%	14.2%	0.8%	22.4%	35.0%	1.6%	0.0%
25 – 34	411	0.0%	20.2%	16.5%	11.7%	0.2%	1.0%	25.3%	22.9%	1.7%	0.5%
35 – 44	387	0.3%	19.4%	12.1%	10.9%	0.0%	2.3%	33.9%	17.6%	3.1%	0.5%
45 – 54	511	0.0%	26.2%	11.4%	11.7%	0.0%	10.2%	24.9%	12.5%	3.1%	0.0%
55 – 64	250	0.0%	31.2%	4.8%	5.6%	0.0%	36.8%	12.0%	7.6%	2.0%	0.0%
65 and older	187	0.0%	4.8%	1.1%	0.5%	0.0%	90.4%	2.1%	0.0%	1.1%	0.0%
Total	2000	0.1%	19.8%	10.7%	9.4%	1.9%	16.4%	22.7%	16.7%	2.3%	0.2%

The mean household size was 4.9 and the mean number of people older than 18 living in respondent's household was 3.6.

Around three fourths of the households had both their expenditure and income within the range of 100 to 800 AZN (see Table 8).

Table 8. Distribution of the households by average monthly expenditure and income.

	Expenditure		Income	
	N	Percent	N	Percent
1201AZN and more	23	1.2	21	1.1
801-1200AZN	117	5.9	69	3.5
401-800AZN	533	26.7	361	18.1
251-400AZN	516	25.8	517	25.9
101-250AZN	499	25.0	672	33.6
86-100AZN	137	6.9	181	9.1
Below 85AZN	25	1.3	54	2.7
Don't know	125	6.3	26	1.3
Refused	25	1.3	99	5.0
Total	2000	100.0	2000	100.0

4.3. Tobacco use

One in every two men was a current smoker, whereas less than 1% of women reported smoking at the time of the interview. Considering very low prevalence of smoking among female respondents, furthermore more detailed information related to smoking is presented only on men.

Among the men the highest prevalence of smoking was observed in 35-44 years old (61.0%) with substantial decline after 54 years of age. In total, almost a half of men were current smokers (see Table 9).

Table 9. Current smokers among male responders by age groups.

	n	% current smokers*	95% CI
Age Group			
18 - 24	121	33.8	25.4 - 42.3
25 - 34	211	59.3	52.6 - 65.8
35 - 44	168	61.0	53.9 - 68.7
45 - 54	224	58.6	52.5 - 65.3
55 - 64	102	35.8	26.9 - 45.6
65 and older	87	15.5	8.4 - 23.8
Residence			
Urban	523	51.3	47.7 - 56.2
Rural	390	46.0	41.3 - 51.2
Total	913	48.7	46.3 - 52.8

* - weighted percentages

Daily smoking habit was assessed among current smokers, by asking them whether they smoked on daily basis or not. Overall 45.4% of men reported daily smoking and additional 3.4% were non-daily smokers (see Table 10). The prevalence of daily smoking was highest among 35-44 years old (58.1%). The results showed that the vast majority of the current smokers were daily smokers. Whereas the prevalence of current smoking was higher in cities in comparison to rural areas (51.3% vs. 46.0%), the relative share of daily smokers among current smokers was higher in rural areas (91.4% vs. 95.1%). However, both differences were not statistically significant.

Table 10. Distribution of the respondents according to their smoking status (daily, non-daily, non-smokers) by age.

	n	Daily smoker		Non-daily smoker		Non-smoker	
		%*	95% CI	%*	95% CI	%*	95% CI
Age Groups							
18 - 24	121	32.3	24.0-40.6	1.5	0.7-3.7	66.2	57.8-74.6
25 - 34	211	52.8	46.1-59.5	6.5	3.2-9.8	40.7	34.1-47.3
35 - 44	168	58.1	50.6-65.6	2.8	0.3-5.3	39.0	31.6-46.4
45 - 54	224	56.0	49.5-62.5	2.6	0.5-4.7	41.4	34.9-47.9
55 - 64	102	31.8	22.8-40.8	4.0	0.2-7.8	64.2	54.9-73.5
65 and older	87	15.5	7.9-23.1	0.0	0.0	84.5	76.9-92.1

Residence							
Urban	523	46.9	42.6-51.2	4.4	2.6-6.2	48.7	44.4-53.0
Rural	390	43.7	38.8-48.6	2.2	0.7-3.7	54.0	49.0-59.0
Total	913	45.4	42.2-48.6	3.4	2.2-4.6	51.3	48.1-54.5

* - weighted percentages

Mean age of initiating daily smoking was 19 years. The time of smoking initiation tends to increase with respondents' age except for the eldest age group (see Table 11).

Table 11. Mean age of initiation daily smoking among male current daily smokers, by age groups.

Age Groups	n	Mean*	95% CI
18 – 24	39	16.9	15.9-17.9
25 – 34	111	17.9	17.3-18.9
35 – 44	98	18.6	17.8-19.8
45 – 54	125	19.4	18.3-20.5
55 – 64	33	21.7	18.4-25.1
65 and older	12	17.3	15.6-18.8
Total	418	18.7	18.2-19.2

* - weighted values

The mean duration of smoking among current daily smokers was 21.5 years (see Table 12).

Table 12. Mean duration of smoking (in years) among male current daily smokers, by age groups.

Age Groups	Men		
	n	Mean*	95% CI
18 – 24	37	5.0	4.2-5.7
25 – 34	110	11.5	10.7-12.1
35 – 44	95	20.5	19.4 - 21.7
45 – 54	122	30.0	28.9 - 30.1
55 – 64	32	36.1	32.5 - 40.0
65 and older	12	54.3	51.5 - 57.0
Total	408	21.5	21.4 - 21.6

* - weighted values

All except three current smokers reported using manufactured cigarettes. One respondent smoked both manufactured cigarettes and hand-rolled cigarettes, and three respondents smoked only cigars (see Table 13).

Table 13. Number and percentage of current smokers by use of tobacco products.

Type	Current smoker N=452	
	N	%*

Manufactured cigarettes	409	90.5%
Hand-rolled cigarettes	1	0.2%
Cigars	3	0.7%
Missing	39	8.6%

* - weighted percentages

The daily smokers smoked on average 20 cigarettes a day with the highest mean in 45-54 years old and the lowest in 18-24 years old (23 and 15 cigarettes respectively) (see Table 14).

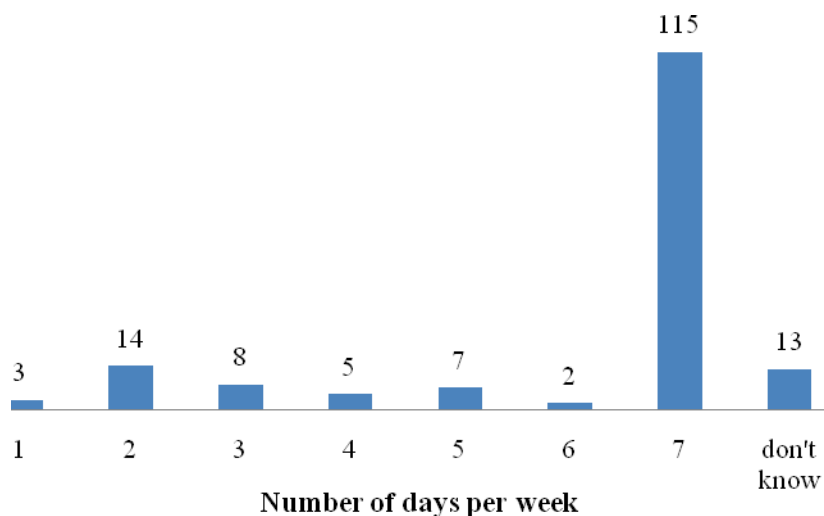
Table 14. Mean number of manufactured cigarette used per day by daily smokers, by age groups.

Age Groups	Men		
	n	Mean*	95% CI
18 – 24	38	14.6	11.5 - 17.2
25 – 34	110	18.9	16.9 - 20.6
35 – 44	94	21.0	18.6 - 22.0
45 – 54	123	23.0	18.6 - 23.1
55 – 64	30	20.4	19.1 - 25.3
65 and older	14	15.0	14.6 - 24.0
Total	409	20.1	19.0 - 21.1

* - weighted values

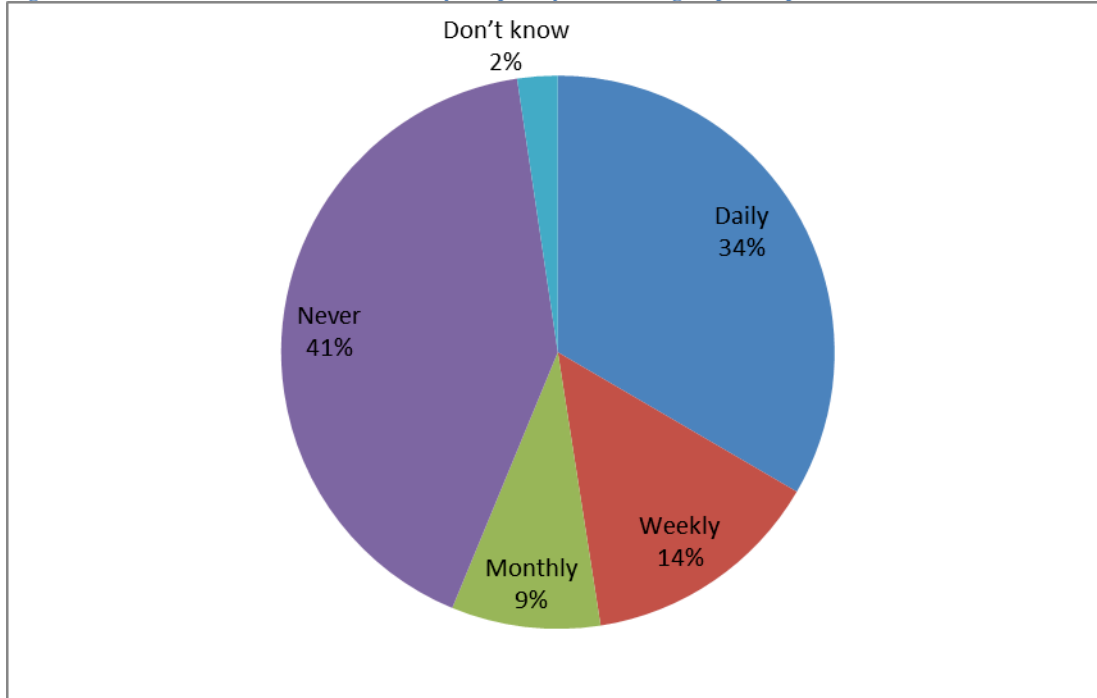
The respondents were asked whether they smoked inside their home. Around 39% of all current smokers reported smoking inside their home. Sixty-nine percent of those smoking inside their home did it every day (see Figure 2).

Figure 2. Distribution of respondents by number of days per week they smoke inside their home.



The current smokers were asked how often they smoked in public places such as restaurants, café, public transport, bus stop etc. Forty-one percent of the respondents reported never smoking in public places, whereas 34% said that they did it on a daily basis (see Figure 3).

Figure 3. Distribution of current smokers by frequency of smoking in public places.



Around 28% (133 out of 461) of non-smoking respondents ever smoked daily in the past. The mean age when the ex-smokers quit smoking was 37 for men (see Table 15).

Table 15. Mean age the ex-smokers quit smoking, by age groups and gender.

Age Groups	Men		
	n	Mean*	95% CI
18 – 24	11	19.6	17.4-21.6
25 – 34	19	25.6	23.0-28.2
35 – 44	17	29.6	25.7 - 34.0
45 – 54	24	37.2	32.7 - 42.0
55 – 64	24	46.0	41.6 - 50.4
65 and older	32	54.3	48.8 - 60.0
Total	127	36.9	35.1-41.2

* - weighted values

Only 4 respondents (0.2%) reported that they used some smokeless tobacco products, and none of them used it daily. Additional 3 respondents (0.2%) said that they ever used smokeless tobacco daily in the past.

The survey also sought information from the participants on their exposition to environmental tobacco smoke (ETS) or passive smoking. While very few women reported smoking, the findings indicate that they are more likely than men to be exposed to ETS at home (41.2% vs. 31.8%). ETS exposure at work and public places was higher in men, which can be explained by a higher share of employed people among the male respondents and women traditionally less likely to visit public places, especially in rural areas. Overall almost 60% of the respondents reported being exposed to ETS either at home, work or public places during the last 7 days with men being exposed more frequently than women (67.5% and 52.3% respectively). For both sexes the exposure is more likely to happen at public places than at home or work (59.2% vs. 35.6% and 34.9%). When examined by age groups, ETS exposure tended to be greater in younger ages (see Table 16).

Table 16. Percentage of respondents exposed to ETS at home, work and public places during the last 7 days.

Age Groups	Men			Women			Both Sexes		
	n	%*	95% CI	n	%*	95% CI	n	%*	95% CI
% Exposed at home									
18 – 24	113	47.2	33.9-60.5	131	50.1	37.9-62.3	244	48.7	39.7-57.7
25 – 34	205	35.1	24.2-46.1	193	42.8	32.1-53.5	398	38.6	30.9-46.3
35 – 44	163	26.6	13.5-39.7	216	41.3	31.1-51.5	379	34.6	26.6-42.7
45 – 54	216	23.6	12.1-35.1	276	37.3	28.0-46.6	492	31.0	23.7-38.3
55 – 64	98	26.5	9.5-43.5	147	37.8	25.1-50.5	245	33.0	22.8-43.2
65 and older	82	18.9	0.0-38.1	83	28.1	10.1-46.1	165	23.3	10.2-36.4
Total	877	31.8	26.2-37.4	1046	41.2	36.5-45.9	1923	36.6	33.0-40.2
% Exposed at workplace									
18 – 24	49	54.8	36.0-73.6	45	15.4	0.0-42.1	94	37.5	21.2-53.8
25 – 34	108	67.2	56.4-78.0	77	17.2	0.0-37.7	185	47.9	37.3-58.5
35 – 44	76	53.3	38.0-68.6	90	18.0	0.0-36.8	166	35.0	22.6-47.4
45 – 54	115	56.2	44.2-68.2	132	13.1	0.0-29.1	247	34.2	24.0-44.4
55 – 64	66	50.4	33.3-67.5	60	7.3	0.0-32.8	126	30.9	16.0-45.8
65 and older	33	17.9	0.0-48.6	22	10.2	0.0-52.1	55	15.0	0.0-39.7
Total	447	55.5	49.3-61.7	426	14.6	5.6-23.6	873	36.9	31.5-42.3
% Exposed at public places									
18 – 24	86	79.7%	70.2-89.2	66	39.4%	21.0-57.8	152	63.5%	53.9-73.1
25 – 34	151	85.2%	79.1-91.3	103	48.3%	34.6-62.0	254	71.2%	64.6-77.8
35 – 44	119	71.4%	61.9-81.0	129	41.9%	28.9-54.9	248	56.9%	48.7-65.1
45 – 54	164	81.9%	75.4-88.4	167	37.0%	25.2-48.8	331	60.3%	53.5-67.1
55 – 64	74	60.6%	46.3-74.9	80	34.9%	17.2-52.6	154	47.8%	36.3-59.3
65 and older	44	49.8%	28.9-70.7	33	27.3%	0.0-56.4	77	40.7%	23.4-57.9
Total	638	76.6%	72.8-80.4	578	40.2%	33.9-46.5	1216	60.6%	57.0-64.2

* - weighted percentages

4.4. Alcohol consumption

To evaluate the quantity and frequency of alcohol consumption, the survey participants were asked about their drinking practices in the past year, month and week prior to being surveyed. Approximately 34% of all respondents (687 out of 2000) reported ever consuming an alcoholic drink in their lives with the remaining 66% being lifetime abstainers. The proportion of lifetime abstainers was significantly greater among women than among men (90.9% vs. 38.9% respectively). In regards to alcohol drinkers, 14.0% of the total respondents were reportedly current drinkers in the past 30 days, whereas 9.9% drank in the past 12 months but not currently. The proportions of current (past 30 days) and non-current drinkers were significantly higher among male respondents than female respondents (26.9% and 18.6% vs. 1.7% and 1.6% respectively). Finally, 10.6% of all respondents reported ever drinking but not in the past 12 months. Again, the share of such respondents was substantially greater among men than women (15.6% vs. 5.8% respectively). When examined by age groups, the proportion of current drinkers was increasing with the age until 65 years, after which significant decrease was observed (see Table 17).

Table 17. Alcohol consumption status of the respondents by age groups and gender.

Age Group	N	Current drinker (past 30 days)		Drank in past 12 months, not current		Past 12 months abstainer		Lifetime abstainer	
		%*	95% CI	%*	95% CI	%*	95% CI	%*	95% CI
Men									
18 – 24	121	9.9	4.6-15.2	18.1	11.2-25.0	12.4	6.5-18.2	59.6	50.9-68.3
25 – 34	211	28.9	22.8-35.0	20.7	15.2-26.2	15.2	10.4-20	35.3	28.9-41.8
35 – 44	168	35.7	28.5-42.9	22.9	16.6-29.3	14.8	9.4-20.2	26.5	19.8-33.2
45 – 54	224	37.3	31.0-43.6	16.1	11.3-20.9	15.0	10.3-19.7	31.7	25.6-37.8
55 – 64	102	38.0	28.6-47.4	16.3	9.1-23.5	16.5	9.3-23.7	29.3	20.5-38.1
65 and older	87	8.9	2.9-14.9	11.0	4.4-17.6	27.3	17.9-36.7	52.8	42.3-63.3
Total	913	26.9	24-29.8	18.6	16.1-21.1	15.6	13.3-18	38.9	35.7-42.1
Women									
18 – 24	133	0.8	0.0-2.3	2.1	0.0-4.5	4.3	0.9-7.8	92.8	88.4-97.2
25 – 34	200	1.4	0.0-3.0	2.4	0.3-4.5	5.7	2.5-8.9	90.5	86.4-94.6
35 – 44	219	2.7	0.6-4.9	0.4	0.0-1.2	7.8	4.3-11.4	89.1	85.0-93.2
45 – 54	287	1.6	0.2-3.1	1.6	0.2-3.1	7.4	4.4-10.4	89.4	85.8-93
55 – 64	148	3.1	0.3-5.9	1.3	0.0-3.1	4.6	1.2-8.0	91.0	86.4-95.6
65 and older	100	0.9	0.0-2.8	1.9	0.0-4.6	1.8	0.0-4.4	95.4	91.3-99.5
Total	1087	1.7	0.9-2.5	1.6	0.9-2.4	5.8	4.4-7.2	90.9	89.2-92.6
Both Sexes									
18 – 24	254	5.4	2.6-8.2	10.2	6.5-13.9	8.4	5.0-11.8	75.9	70.6-81.2
25 – 34	411	16.2	12.6-19.8	12.3	9.1-15.5	10.8	7.8-13.8	60.7	56.0-65.4

35 – 44	387	17.9	14.1-21.7	10.8	7.7-13.9	11.0	7.9-14.1	60.4	55.5-65.3
45 – 54	511	18.0	14.7-21.3	8.3	5.9-10.7	10.9	8.2-13.6	62.8	58.6-67
55 – 64	250	18.2	13.4-23	7.7	4.4-11	9.7	6.0-13.4	64.4	58.5-70.3
65 and older	187	4.8	1.7-7.9	6.4	2.9-9.9	14.4	9.4-19.4	74.4	68.1-80.7
Total	2000	14.0	12.5-15.5	9.9	8.6-11.2	10.6	9.3-12.0	65.5	63.4-67.6

* - weighted percentages

Among drinkers in the past 12 months, including current (30 days) drinkers, the proportion of those who reportedly consumed alcohol on a daily basis was relatively low (1.5%). The proportion of drinkers consuming alcohol for at least once a week was 9.3% of all respondents who had ever drunk in the past 12 months prior to the survey. No women reported alcohol consumption at least once a week, whereas the share of such persons among male respondents was 11.0%. The vast majority (89.6%) of the respondents who reported drinking in the past 12 months consumed alcohol from 1-3 days a month to less than once a month. Such pattern of drinking was equally prevalent among men and women (88.9% and 90.0% respectively). Interestingly, the proportion of daily male drinkers was increasing with age with the peak among the eldest group (see Table 18).

Table 18. Frequency of alcohol consumption among those respondents who have drunk in the last 12 months, by age groups and gender.

Age Groups	N	%* daily	95% CI	%* 5-6 days a week	95% CI	%* 1-4 days a week	95% CI	%* 1-3 days a month	95% CI	%* < once a month	95% CI
Men											
18 - 24	32	0.0	0.0	0.0	0.0	3.4	0.0-9.7	25.1	10.1-40.1	71.4	55.7-87.1
25 - 34	104	0.0	0.0	0.0	0.0	5.8	1.3-10.3	53.7	44.1-63.3	40.5%	31.3-49.9
35 - 44	96	1.0	0.0-3.0	0.0	0.0	10.2	4.2-16.3	45.3	35.3-55.3	43.5	33.6-53.4
45 - 54	120	2.8	0.0-5.8	0.0	0.0	13.2	7.1-19.3	54.8	45.9-63.7	29.1	20.97-37.2
55 - 64	56	6.1	0.0-12.4	1.7	0.0-5.1	14.5	5.3-23.7	39.1	26.3-51.9	38.7	25.9-51.5
65 and older	18	5.3	0.0-16.7	0.0	0.0	10.6	0.0-24.8	28.7	7.8-49.6	55.3	32.3-78.3
Total	426	1.6	0.4-2.8	0.2	0.0-0.6	9.2	6.5-11.9	46.1	41.4-50.8	42.8	38.1-47.5
Women											
18 - 24	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
25 - 34	7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0
35 - 44	6	0.0	0.0	0.0	0.0	0.0	0.0	15.6	0.0-44.6	84.4	55.4-100.0
45 - 54	10	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0-28.6	90.0	71.4-100.0
55 - 64	7	0.0	0.0	0.0	0.0	0.0	0.0	42.9	6.2-79.6	57.1	20.4-93.8
65 and older	3	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0-86.6	66.7	13.4-100.0
Total	35	0.0	0.0	0.0	0.0	0.0	0.0	14.7	3.0-26.4	85.3	73.6-97.0
Both Sexes											
18 - 24	34	0.0	0.0-0.0	0.0	0.0	3.2	0.0-9.1	23.8	9.5-38.1	73.0	58.1-87.9
25 - 34	111	0.0	0.0-0.0	0.0	0.0	5.5	1.3-9.7	50.9	41.6-60.2	43.6	34.4-52.8

35 - 44	102	0.9	0.0-2.7	0.0	0.0	9.7	4.0-15.4	43.7	34.1-53.3	45.7	36.0-55.4
45 - 54	130	2.7	0.0-5.5	0.0	0.0	12.4	6.7-18.1	51.8	43.2-60.4	33.2	25.1-41.3
55 - 64	63	5.5	0.0-11.1	1.5	0.0-4.5	13.1	4.8-21.4	39.4	27.3-51.5	40.5	28.4-52.6
65 and older	21	4.6	0.0-13.6	0.0	0.0	9.3	0.0-21.7	29.3	9.8-48.8	56.7	35.5-77.9
Total	461	1.5	0.4-2.6	0.2	0.0-0.6	8.6	6.0-11.2	44.1	39.6-48.6	45.5	41.0-50.1

* - weighted percentages

Among current drinkers, which represented 14.0% of all respondents, the mean number of drinking occasions in the past 30 days prior to being surveyed was around three. Those respondents were asked about average number of alcoholic drinks consumed at one occasion during the past 30 days. The average number of standard drinks² was 2.9 with men reported significantly higher number than women (3.0 vs. 1.3 respectively). Men in rural areas tended to consume more alcohol per occasion than men in urban areas (3.7 drinks vs. 2.5 drinks respectively) (see Table 19).

Table 19. Mean number of standard drinks consumed on a drinking occasion among current (past 30 days) drinkers.

	Men			Women			Both sexes		
	n	Mean*	95% CI	n	Mean*	95% CI	n	Mean*	95% CI
Age Groups									
18 - 24	12	2.1	1.3-2.9	1	1.0	NA	13	2.0	1.2-2.8
25 - 34	61	2.1	1.7-2.5	3	1.3	0.0-2.8	64	2.1	1.7-2.5
35 - 44	59	2.8	2.2-3.5	6	1.3	0.8-1.9	65	2.7	2.1-3.3
45 - 54	78	3.6	2.3-4.7	5	1.6	0.1-3.3	83	3.5	2.3-4.5
55 - 64	38	5.1	2.6-7.4	4	1.3	0.5-1.3	42	4.8	2.4-6.8
65 and older	8	2.0	0.8-3.2	0	0	NA	8	2.0	0.8-3.1
Residence									
Urban	159	2.5	2.1-2.9	16	1.4	0.9-1.8	175	2.4	2.0-2.8
Rural	97	3.7	2.8-5.3	3	1.3	0.0-2.8	100	3.6	2.8-5.0
Total	256	3.0	2.6-3.7	19	1.3	1.0-1.8	275	2.9	2.5-3.5

* - weighted values

Furthermore, the respondents were asked about the maximum number of drinks consumed on one occasion in the past 30 days. The mean number among all current drinkers was 5.4 drinks with men reporting three times higher number than women (5.6 vs. 2.3 respectively) (see Table 20).

Table 20. Mean maximum number of drinks consumed on one occasion among current (past 30 days) drinkers.

Age Groups	Men			Women			Both sexes		
	n	Mean*	95% CI	n	Mean*	95% CI	n	Mean*	95% CI
18 - 24	11	4.0	1.7-6.3	1	1.0	NA	12	3.7	1.6-5.9

² A “standard drink” is the amount of ethanol contained in standard glasses of beer, wine, fortified wine such as sherry, and spirits (approximately 10 grams of ethanol).

25 - 34	59	4.9	3.7-6.4	3	2.0	0.0-4.5	62	4.8	3.6-6.2
35 - 44	57	5.7	4.6-6.8	6	2.2	1.1-3.2	63	5.4	4.4-6.4
45 - 54	79	7.6	6.1-8.8	5	4.2	0.4-7.9	84	7.4	6.0-8.6
55 - 64	38	4.3	2.8-5.7	4	1.5	0.0-3.0	42	4.0	2.6-5.3
65 and older	8	4.0	2.8-5.2	0	0	NA	8	4.0	2.8-5.2
Total	252	5.6	5.1-6.4	19	2.3	1.5-3.4	271	5.4	4.9-6.1

* - weighted values

Almost all (96%) current drinkers said that usually consumed alcohol with meals, the remaining respondents reported consuming it sometimes or rarely with meals (1% and 3% respectively). All women who reported drinking alcohol in the past 30 days consumed it usually with meals (see Table 21).

Table 21. Percentage of current (past 30 days) drinkers who reported drinking alcohol usually, sometimes, rarely or never with meals.

Age Groups	N	% Usually with meals	95% CI	% Sometimes with meals	95% CI	% Rarely with meals	95% CI
Men							
18 – 24	12	100.0	100.0	0.0	0.0	0.0%	0.0
25 – 34	61	91.8	84.9 - 98.7	3.3	1.2-7.8	4.9%	0.0-10.3
35 – 44	61	96.7	92.2-100.0	0.0	0.0	3.3%	0.0-7.8
45 – 54	84	98.8	96.5-100.0	0.0	0.0	1.2%	0.0-3.5
55 – 64	39	89.7	80.2-99.2	2.6	2.4-7.6	7.7%	0.0-16.0
65 and older	8	100.0	100.0	0.0	0.0	0.0%	0.0
Total	265	95.5	92.4-97.5	1.1	0.3-3.0	3.4%	1.7-6.1
Women							
18 – 24	1	100.0	100.0	0.0	0.0	0.0	0.0
25 – 34	3	100.0	100.0	0.0	0.0	0.0	0.0
35 – 44	6	100.0	100.0	0.0	0.0	0.0	0.0
45 – 54	5	100.0	100.0	0.0	0.0	0.0	0.0
55 – 64	5	100.0	100.0	0.0	0.0	0.0	0.0
65 and older	1	100.0	100.0	0.0	0.0	0.0	0.0
Total	21	100.0	100.0	0.0	0.0	0.0	0.0
Both sexes							
18 – 24	13	100.0	100.0	0.0	0.0	0.0	0.0
25 – 34	64	92.2	85.6-98.8	3.1	0.0-7.4	4.7	0.0-9.9
35 – 44	67	97.0	92.9-100.0	0.0	0.0	3.0	0.0-7.1
45 – 54	89	98.9	96.7-100.0	0.0	0.0	1.1	0.0-3.3
55 – 64	44	90.9	82.4-99.4	2.3	0.0-6.7	6.8	0.0-14.2
65 and older	9	100.0	100.0	0.0	0.0	0.0	0.0
Total	286	95.8	93.5-98.1	1.0	0.0-2.1	3.1	1.1-5.1

The survey participants were asked about frequency and quantity of drinks consumed in the past 7 days. Overall, only 3.5% of all current drinkers reported to drink alcohol on four or more days in the past 7 days. Among male current drinkers, 3.9% drank alcohol on at least 4 days in the past 7 days, whereas no women reported consuming alcohol on at least four days. One in every four male current drinkers had at least 5 drinks on any day in the past 7 days, and around one in every 20 male current drinkers took 20 or more drinks in that period. None of the female current drinkers took 15 or more drinks in the past 7 days. Only one woman out of 21 current drinkers had 4 or more drinks on any days in the past 7 days (see Table 22).

Table 22. Frequency and quantity of drinks consumed in the past 7 days among current drinkers.

Men							
Age Group	N	% Drank on 4+ days		% 5+ drinks on any days		% 20+ drinks in 7 days	
		%*	95% CI	%*	95% CI	%*	95% CI
18 - 24	12	0.0	0.0	16.7	0.0-37.8	0.0	0.0
25 - 34	61	0.0	0.0	13.9	5.2-22.6	1.5	0.0-4.4
35 - 44	61	3.1	0.0-7.4	34.7	22.7-46.6	1.5	0.0-4.5
45 - 54	84	5.1	0.4-9.8	31.5	21.6-41.1	7.5	1.9-13.2
55 - 64	39	11.1	1.2-20.1	19.2	6.8-31.5	8.2	0.0-16.8
65 and older	8	0.0	0.0	14.3	0.0-38.6	0.0	0.0
Total	265	3.3	1.2-5.5	24.3	19.1-29.5	3.7	1.4-5.8
Women							
Age Group	N	% Drank on 4+ days		% 4+ drinks on any days		% 15+ drinks in 7 days	
		%*	95% CI	%*	95% CI	%*	95% CI
18 - 24	1	0.0	0.0	0.0	0.0	0.0	0.0
25 - 34	3	0.0	0.0	0.0	0.0	0.0	0.0
35 - 44	6	0.0	0.0	0.0	0.0	0.0	0.0
45 - 54	5	0.0	0.0	20.0	0.0-55.0	0.0	0.0
55 - 64	5	0.0	0.0	0.0	0.0	0.0	0.0
65 and older	1	0.0	0.0	0.0	0.0	0.0	0.0
Total	21	0.0	0.0	4.8	0.2-21.3	0.0	0.0

* - weighted percentages

4.5. Nutrition

The respondents were asked about the number of days they consumed fruits or vegetables in a typical week. The mean numbers were 4.3 and 5.1 days, respectively for fruits and vegetable, with no differences between sexes (see Table 23). Around 30% of the respondents reported daily

consumption of fruits, whereas vegetables were reportedly consumed daily by 52% of the respondents.

Table 23. Mean number of days fruits or vegetables consumed in a typical week.

Age Groups	Men			Women			Both Sexes		
	n	Mean*	95% CI	N	Mean*	95% CI	n	Mean*	95% CI
Fruits									
18 – 24	115	4.2	3.8-4.6	127	4.9	4.5-5.3	242	4.5	4.3-4.8
25 – 34	195	4.2	3.9-4.6	187	4.5	4.2-4.9	382	4.4	4.2-4.6
35 – 44	152	3.8	3.5-4.2	191	4.2	3.9-4.5	343	4.0	3.8-4.3
45 – 54	202	4.2	3.9-4.5	269	4.1	3.9-4.4	471	4.2	4.0-4.4
55 – 64	99	4.2	3.8-4.7	138	4.3	3.9-4.7	237	4.3	4.0-4.6
65 and older	76	4.0	3.5-4.5	90	3.9	3.5-4.4	166	3.9	3.6-4.3
Total	839	4.1	4.0 - 4.3	1002	4.3	4.2-4.5	1841	4.3	4.1-4.3
Vegetables									
18 – 24	120	4.6	4.2-5.1	133	5.5	5.1-5.8	253	5.0	4.8-5.4
25 – 34	211	5.0	4.7-5.3	200	5.3	5.0-5.6	411	5.3	4.9-5.4
35 – 44	168	5.1	4.8-5.5	219	5.1	4.9-5.4	387	5.1	4.9-5.4
45 – 54	224	5.3	5.0-5.6	287	5.2	4.9-5.5	511	5.2	5.1-5.4
55 – 64	102	5.4	4.9-5.8	148	5.2	4.9-5.6	250	5.2	5.0-5.6
65 and older	87	5.0	4.6-5.5	99	5.0	4.6-5.5	186	5.0	4.7-5.4
Total	912	5.0	4.9-5.3	1086	5.2	5.1-5.4	1998	5.1	5.1-5.3

* - weighted values

The survey participants were asked about the number of servings of fruits or vegetables consumed a day. The mean numbers were 2.4 and 2.3 respectively for fruits and vegetables with no significant differences between men and women. The youngest age group tends to consume slightly more fruits or vegetables than older groups. Furthermore, when combined consumption of fruits and vegetables was assessed, the results showed that men and women tend to eat approximately equal amount of fruits and vegetables (4.6 servings vs. 4.4 servings). Men aged 18-24 years and 55-64 years reported higher consumptions than their female peers (see Table 24).

Table 24. Mean number of servings of fruits or vegetables consumed by the respondents on average day.

Age Groups	Men			Women			Both Sexes		
	n	Mean*	95% CI	n	Mean*	95% CI	n	Mean*	95% CI
Fruits									
18 – 24	115	3.0	2.5-3.6	126	2.8	2.4-3.4	241	2.9	2.6-3.4
25 – 34	194	2.3	2.0-2.7	186	2.6	2.2-3.1	380	2.4	2.2-2.8

35 – 44	151	2.1	1.8-2.5	192	2.2	1.9-2.6	343	2.2	2.0-2.5
45 – 54	202	2.3	2.1-2.7	269	2.0	1.8-2.3	471	2.2	2.0-2.4
55 – 64	97	2.4	1.9-3.0	138	2.0	1.6-2.3	235	2.2	1.9-2.5
65 and older	77	2.1	1.8-2.6	90	2.2	1.8-2.8	167	2.2	1.9-2.6
Total	836	2.4	2.3-2.6	1001	2.4	2.2-2.5	1837	2.4	2.3-2.5
Vegetables									
18 – 24	115	3.1	2.5-4.0	126	2.5	2.0-3.1	241	2.8	2.4-3.3
25 – 34	194	2.3	1.9-2.7	186	2.4	2.1-2.9	380	2.3	2.1-2.7
35 – 44	151	2.1	1.8-2.5	192	2.1	1.8-2.5	343	2.1	1.9-2.4
45 – 54	202	2.3	2.0-2.8	269	2.1	1.8-2.4	471	2.2	2.0-2.5
55 – 64	97	2.3	1.8-3.0	138	2.0	1.7-2.4	235	2.2	1.9-2.5
65 and older	77	2.3	1.7-2.9	90	2.4	1.9-3.5	167	2.3	2.0-2.8
Total	836	2.4	2.3-2.6	1001	2.3	2.1-2.4	1837	2.3	2.2-2.5
Fruits and/or vegetables									
18 – 24	119	5.9	4.9-7.3	130	5.2	4.4-6.3	249	5.5	4.9-6.5
25 – 34	211	4.4	3.8-5.1	199	4.8	4.1-5.7	410	4.6	4.2-5.2
35 – 44	168	4.0	3.4-4.7	211	4.1	3.5-4.8	379	4.0	3.7-4.6
45 – 54	221	4.4	3.9-5.1	284	4.0	3.5-4.6	505	4.2	3.9-4.7
55 – 64	100	4.7	3.7-5.9	148	3.8	3.3-4.5	248	4.2	3.7-4.8
65 and older	87	4.1	3.3-5.2	97	4.4	3.5-5.5	184	4.3	3.7-5.1
Total	906	4.6	4.3-5.0	1069	4.4	4.1-4.7	1975	4.5	4.3-4.7

* - weighted values

In terms of the amount of daily fruit and/or vegetable consumption the majority of the respondents (84.9%) reported to consume less than 5 servings per day with no significant differences among age groups and sexes. Almost one in every five respondents ate less than one serving of fruits and vegetables on average per day. When examined by age groups, the youngest respondents tended to have more fruits and/or vegetables in comparison to other age groups. Interestingly, urban residents reported higher consumption of fruits and vegetables in comparison to rural respondents. Whereas 22.4% of urban residents consumed recommended amount of fruits and vegetables (5 or more servings per day), the same proportion for rural residents was only 6.9% (see Table 25).

Table 25. Amount of fruit and/or vegetable consumption.

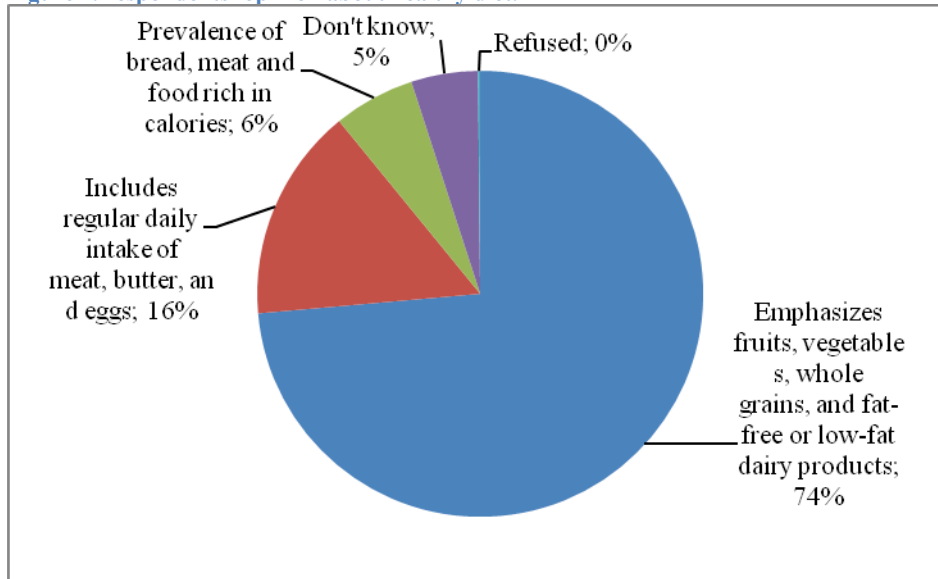
	n	%* <1 servings on average per day	95% CI	%* 1≤x<3 servings on average per day	95% CI	%* 3≤x<5 servings on average per day	95% CI	%* 5 or more servings on average per day	95% CI

Men by age groups									
18 - 24	121	25.2	17.5-32.9	37.6	29.0-46.2	15.3	8.9-21.7	22.0	14.6-29.4
25 - 34	211	17.5	12.4-22.6	49.2	42.5-56.0	17.9	12.7-23.1	15.3	10.4-20.2
35 - 44	168	24.6	18.1-31.1	46.8	39.3-54.4	17.1	11.4-22.8	11.5	6.7-16.3
45 - 54	224	17.4	12.4-22.4	48.4	41.9-54.9	19.2	14.0-24.4	15.0	10.3-19.7
55 - 64	102	16.8	9.5-24.1	50.6	40.9-60.3	17.5	10.1-24.9	15.1	8.2-22.1
65 and older	87	24.4	15.4-33.4	48.9	38.4-59.4	11.4	4.7-18.1	15.3	7.7-22.9
Total	913	20.9	18.3-23.5	46.3	43.1-49.5	16.9	14.5-19.3	15.9	13.5-18.3
Women by age groups									
18 - 24	133	11.8	5.9-17.8	46.1	36.9-55.3	23.7	15.9-31.5	18.4	11.3-25.5
25 - 34	200	19.0	13.6-24.4	45.1	38.2-52	19.2	13.7-24.7	16.7	11.5-21.9
35 - 44	219	20.1	14.8-25.4	51.9	45.3-58.5	14.3	9.7-18.4	13.7	9.1-18.3
45 - 54	287	19.2	14.6-23.8	51.3	45.5-57.1	18.4	13.9-22.9	11.1	7.5-14.7
55 - 64	148	14.4	8.7-20.1	58.2	50.3-66.2	16.1	10.2-22.0	11.3	6.2-16.4
65 and older	100	23.2	14.9-31.5	54.1	44.3-63.9	9.6	3.8-15.4	13.1	6.5-19.7
Total	1087	17.8	15.5-20.1	50.1	47.1-53.1	17.7	15.4-20.0	14.4	12.3-16.5
Both Sexes by age groups									
18 - 24	254	18.6	13.8-24.0	41.8	35.7-47.9	19.4	14.5-24.3	20.2	15.3-25.1
25 - 34	411	18.2	14.5-21.9	47.3	42.5-52.1	18.5	14.8-22.3	16.0	12.5-19.5
35 - 44	387	22.1	18.0-26.2	49.6	44.6-54.6	15.6	12.0-19.2	12.7	9.3-16.0
45 - 54	511	18.4	15.0-21.8	50.0	45.7-54.3	18.8	15.4-22.2	12.8	9.9-15.7
55 - 64	250	15.4	10.9-19.9	54.9	48.7-61.1	16.7	12.1-21.3	12.9	8.7-17.1
65 and older	187	23.8	17.7-29.9	51.6	44.4-58.8	10.5	6.1-14.9	14.2	9.2-19.2
Total	2000	19.3	17.6-21.0	48.2	46.0-50.4	17.4	15.7-19.1	15.1	13.5-16.7
Residence									
Urban	1157	16.2	14.0-18.3	44.6	41.7-47.5	16.8	14.7-18.9	22.4	20.0-24.8
Rural	843	22.7	19.9-25.5	52.3	48.9-55.7	18.1	15.5-20.7	6.9	5.2-8.6

* - weighted percentages

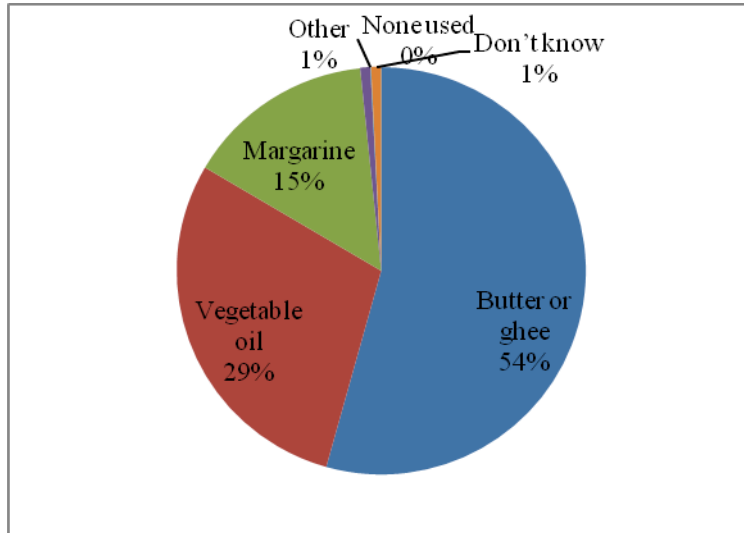
The respondents were asked to provide their definition of healthy diet. The vast majority of them (74%) correctly emphasized consumption of fruits, vegetables, whole grains and fat-free or low-fat dairy products, 16% mentioned importance of regular daily intake of meat, butter and eggs, and 6% stressed out consumption of bread, meat and food rich in calories (see Figure 4).

Figure 4. Respondents' opinion about healthy diet.



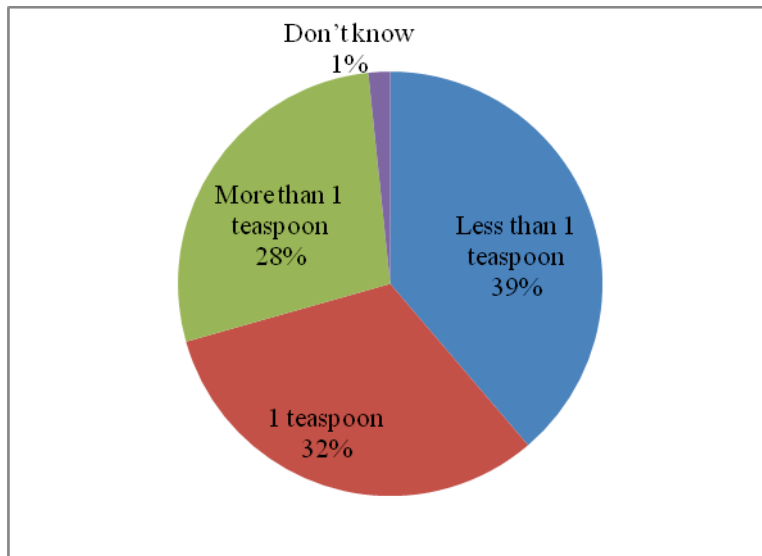
The respondents were asked about the type of oil or fat most often used for meal preparation in their households. The result showed that butter or ghee was most commonly used (54%), followed by vegetable oil (29%) and margarine (15%) (see Figure 5).

Figure 5. Type of oil or fat most often used for meal preparation in the households.



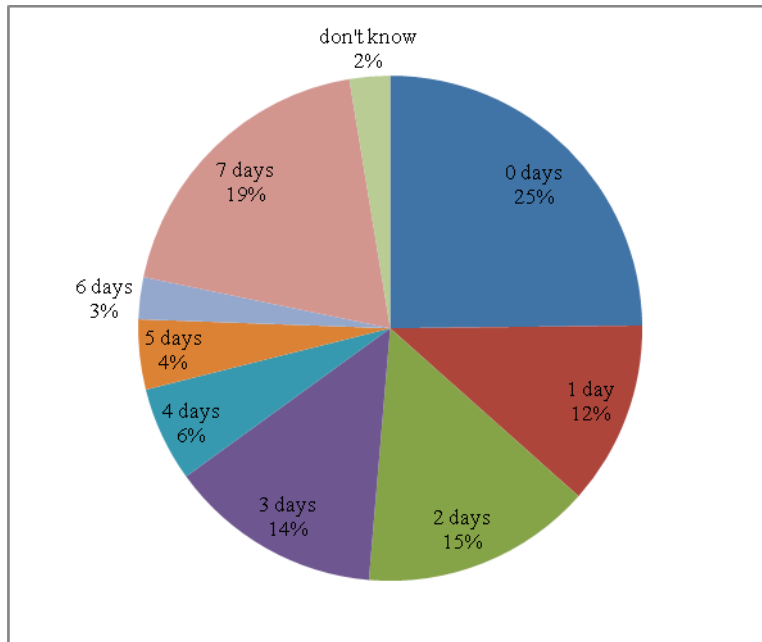
The survey participants were asked about their salt consumption. Approximately 39% of the respondents reported consuming less than one teaspoon of salt a day, 32% said that they consumed one teaspoon and 28% consumed more than one teaspoon a day (see Figure 6).

Figure 6. Respondents' daily salt consumption.



To estimate additional salt consumption, the survey participants were asked about the number of days per week they consumed pickled food. The results showed that around a quarter of all respondents did not eat pickled food, whereas 19% of them consumed it daily (see Figure 7).

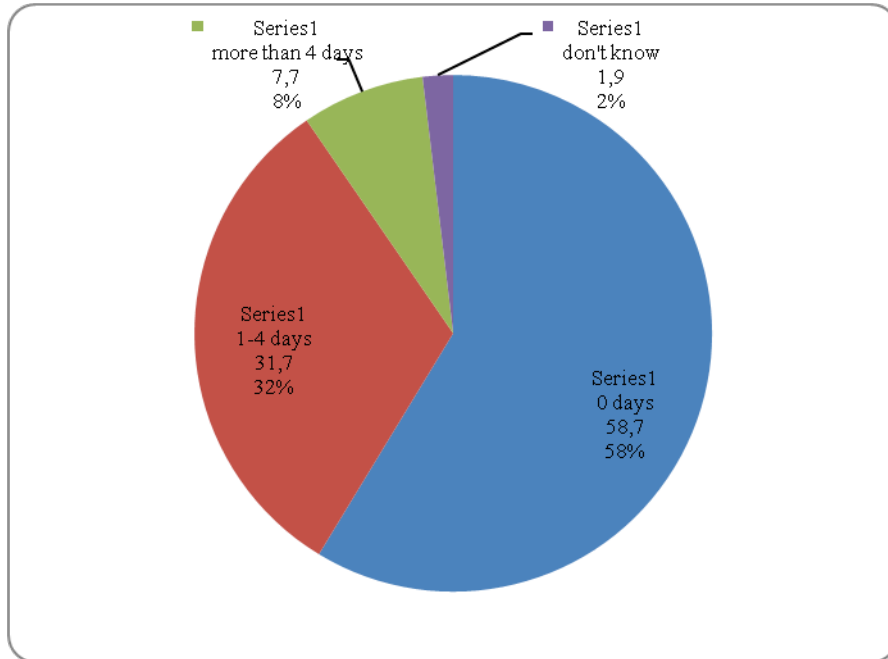
Figure 7. The number of days per week the respondents consumed pickled food.



The participants were asked about the number of days in the past month they drank regular soda containing sugar. Approximately 59% of the respondents reported no soda consumption in the

past month. Less than 8% of them drank soft drinks on more than 4 days during that period (see Figure 8).

Figure 8. The number of days sugar-containing soft drinks consumed in the past 30 days.



4.6. Physical activity

The survey sought to estimate the prevalence of respondents by category of low, moderate, and high physical activity and to quantify the amount and frequency of physical activity among all respondents and by gender and age groups.

Overall, 47.9% of the respondents were reported as having high level of physical activity with greater proportion of men having high physical activity than women (56.0% vs. 40.1% respectively). Around 29.9% of the respondents had moderate level and 22.2% low level of physical activity. Greater share of women had low level of activity than men (28.8% and 15.3% respectively). When examined by age groups, the level of physical activity tended to decline with age. Significantly greater proportion of rural residents reported high level of total physical activity in comparison to urban respondents (57.3% vs. 39.5% respectively) (see Table 26).

Table 26. Percentage of respondents classified into three categories of total physical activity, by age groups and gender.

	N	Low		Moderate		High	
		%*	95%CI	%*	95%CI	%*	95%CI
Men by age groups							

18 – 24	121	9.9	4.6-15.2	24.2	16.6-31.8	65.9	57.5-75.0
25 – 34	211	10.2	6.1-14.2	25.8	19.9-31.7	64.0	57.4-70.4
35 – 44	168	12.7	7.7-17.7	33.5	26.4-40.6	53.7	46.2-61.2
45 – 54	224	13.6	9.1-18.0	26.3	20.5-32.0	60.2	53.6-66.4
55 – 64	102	20.5	12.6-28.3	36.7	27.3-45.0	42.8	33.2-52.4
65 and older	87	50.6	40.0-61.1	35.2	22.6-42.3	14.2	6.8-21.5
Total	913	15.3	12.9-17.6	28.7	25.8-31.6	56.0	52.8-59.2
Women by age groups							
18 – 24	133	29.2	21.5-36.9	38.0	29.7-46.2	32.7	24.7-40.6
25 – 34	200	24.9	18.9-30.9	27.2	20.8-33.1	47.9	40.9-54.8
35 – 44	219	19.1	13.9-24.3	29.8	23.7-35.8	51.1	44.5-57.7
45 – 54	287	27.3	22.1-32.5	30.4	25.0-35.7	42.3	36.6-48.0
55 – 64	148	29.0	21.7-36.3	35.5	27.8-43.2	35.4	27.7-43.1
65 and older	100	67.0	57.8-76.2	23.7	15.4-32.0	9.3	3.6-14.9
Total	1087	28.8	26.1-31.5	31.1	28.4-33.8	40.1	37.2-43.0
Both Sexes by age groups							
18 – 24	254	19.4	14.5-24.2	31.0	25.4-36.8	49.5	43.4-55.7
25 – 34	411	17.0	13.4-20.6	26.5	22.2-30.8	56.6	51.8-61.4
35 – 44	387	16.1	12.4-19.7	31.5	26.8-31.5	52.3	47.3-57.3
45 – 54	511	21.0	17.5-24.5	28.5	24.6-32.4	50.5	46.2-54.8
55 – 64	250	25.4	20.0-30.8	36.1	30.2-42.0	38.6	32.6-44.6
65 and older	187	59.0	51.9-66.0	29.3	22.8-35.8	11.7	7.0-16.3
Total	2000	22.2	20.4-24.0	29.9	27.9-31.9	47.9	45.7-50.0
Residence							
Urban	1157	23.3	20.9-25.7	37.2	34.4-40.0	39.5	36.7-42.3
Rural	843	21.0	18.3-23.8	21.6	18.8-24.4	57.3	54.0-60.6

* - weighted percentages

Overall, the amount of total physical activity was on average more than 2 hours with men spending substantially greater time on physical activity than women (175 minutes vs. 115 minutes). When examined by age groups, the physical activity was lowest in the eldest age group (see Table 27).

Table 27. Mean and median minutes of total physical activity on average per day.*

Age Groups	Men				Women				Both Sexes			
	N	Mean	Median	95% CI	N	Mean	Median	95% CI	N	Mean	Median	95% CI
18 - 24	121	186.0	128.6	151.3-215.3	133	92.7	60.0	72.5-106.6	254	140.0	90.0	115.7-152.6
25 - 34	211	219.1	145.7	182.4-242.1	200	128.5	97.1	107.5-142.8	411	177.4	120.0	151.5-187.4
35 - 44	168	170.8	120.0	140.2-195.0	219	155.7	111.4	129.5-172.8	387	162.6	118.6	141.2-175.3

45 - 54	224	188.4	128.6	161.7- 210.2	287	121.4	70.0	102.9- 133.4	511	152.3	104.3	134.0- 161.8
55 - 64	102	112.5	60.0	86.9- 137.1	148	99.5	47.1	77.9- 118.9	250	105.1	60.0	88.2- 119.7
65 and older	87	43.5	17.1	27.6- 58.0	100	32.9	5.7	19.4- 45.6	187	38.1	12.9	27.4- 47.2
Total	913	174.7	120.0	154.0- 187.0	1087	115.0	67.1	104.1- 120.3	2000	144.2	90.0	129.7- 143.8

* - weighted values

The mean number of minutes spent on work-related physical activity was around 84.9 with men spending substantially longer time than women (102 minutes vs. 79 minutes). Interestingly, there was substantial difference between mean and median values in both men and women, which indicates that the majority had little work-related physical activity, whereas relatively small proportion of the respondents was involved in long physical activity at work. At least half of the youngest responders and the responders above 55 years of age did not report any work-related activities at all. The male respondents also reported almost two times longer periods of transport-related physical activity than women (64 minutes and 32 minutes respectively). Both genders had very limited recreation-related physical activity (see Table 28).

Table 28. Mean and median minutes of work-, transport- and recreation-related physical activity on average per day.*

Age Groups	Men				Women				Both Sexes			
	N	Mean	95% CI	Median	N	Mean	95% CI	Median	N	Mean	95% CI	Median
work-related physical activity												
18 - 24	121	89.4	63.0- 111.0	0.0	133	61.8	42.5- 74.4	4.2	254	75.6	57.9- 86.2	4.2
25 - 34	211	134.0	103.0- 152.3	42.8	200	96.5	75.9- 109.6	57.1	411	116.7	95.5- 125.8	51.4
35 - 44	168	117.8	89.8- 139.5	42.8	219	113.5	90.7- 126.8	60.0	387	115.2	96.5- 126.3	60.0
45 - 54	224	112.1	90.8- 130.7	40.0	287	78.1	62.4- 88.0	25.7	511	93.8	79.4- 101.9	30.0
55 - 64	102	57.7	35.3- 77.8	0.0	148	55.4	37.1- 69.3	0.0	250	56.4	41.8- 67.6	0.0
65 and older	87	18.9	5.9- 29.4	0.0	100	13.3	3.9- 21.6	0.0	187	16.0	7.9-22.2	0.0
Total	913	102.1	87.5- 107.4	17.1	1087	78.6	67.1- 81.5	22.8	2000	84.9	79.3- 90.0	17.0
transport-related physical activity												
18 - 24	121	79.2	63.8- 91.7	60.0	133	26.7	20.2- 32.9	12.8	254	53.3	42.9- 59.0	25.7
25 - 34	211	73.3	58.6- 84.3	40.0	200	27.6	20.3- 35.5	13.5	411	52.3	42.4- 58.2	25.0
35 - 44	168	50.1	40.6- 59.1	30.0	219	37.7	29.0- 45.5	17.1	387	43.4	35.5- 48.9	22.8
45 - 54	224	72.3	58.9- 84.3	40.0	287	40.8	31.7- 49.9	17.1	511	55.3	46.5- 64.1	25.7

			83.7				48.8				61.2	
55 - 64	102	49.7	36.2-63.9	28.5	148	34.1	26.3-42.2	19.0	250	40.8	33.3-48.0	40.8
65 and older	87	23.2	14.8-33.0	12.8	100	17.9	9.9-25.9	0.0	187	20.5	14.7-26.7	20.5
Total	913	64.1	56.3-66.3	32.1	1087	32.1	29.3-36.3	14.2	2000	47.7	42.7-49.0	21.4
recreation-related physical activity												
18 - 24	121	17.7	10.8-25.8	0.0	133	4.1	2.5-6.5	0.0	254	11.0	7.2-14.8	0.0
25 - 34	211	11.7	8.4-15.3	0.0	200	4.4	2.0-7.2	0.0	411	8.4	5.9-10.5	0.0
35 - 44	168	2.8	1.4-4.4	0.0	219	4.8	2.3-8.1	0.0	387	3.9	2.3-5.9	0.0
45 - 54	224	3.8	1.9-6.1	0.0	287	4.8	1.2-4.6	0.0	511	3.1	1.9-4.5	0.0
55 - 64	102	5.0	2.1-8.3	0.0	148	2.4	5.8-15.4	0.0	250	3.6	2.5-5.3	0.0
65 and older	87	1.2	0.0-2.6	0.0	100	1.2	0.0-2.6	0.0	187	1.4	0.0-2.6	0.0
Total	913	7.8	5.9-8.8	0.0	1087	4.4	3.6-5.8	0.0	2000	6.4	5.0-6.8	0.0

* - weighted values

Around 45% of the respondents reported no work-related physical activity with no significant difference between genders. Close to 22% of the respondents had no transport-related physical activity such as walking or cycling. Two times as much women as men reported no such physical activity (29.0% and 14.3% respectively). Almost 85% of the respondents reported no recreation-related physical activity. As expected, all types of activities tended to decline with age (see Table 29).

Table 29. Percentage of respondents classified as doing no work-, transport- or recreation-related physical activity.

Age Groups	Men			Women			Both Sexes		
	N	%*	95% CI	N	%*	95% CI	N	%*	95% CI
no work-related physical activity									
18 – 24	121	50.1	41.2-59.0	133	47.9	39.4-56.4	254	49.0	42.8-55.1
25 – 34	211	35.5	29.0-41.9	200	35.1	28.4-41.7	411	35.3	30.7-39.9
35 – 44	168	41.9	34.4-49.4	219	31.4	25.2-37.5	387	36.2	31.4-40.9
45 – 54	224	39.8	33.4-46.2	287	39.6	33.9-45.2	511	39.7	35.7-44.2
55 – 64	102	56.5	46.9-66.1	148	58.9	51.2-66.9	250	57.9	51.8-64.1
65 and older	87	80.9	71.8-88.5	100	83.0	75.6-90.3	187	82.0	76.5-87.5
Total	913	45.9	42.7-49.1	1087	44.0	41.0-46.9	2000	44.9	42.8-47.1
no transport-related physical activity									
18 – 24	121	7.9	3.0-12.7	133	26.2	18.7-33.6	254	16.9	12.3-21.5
25 – 34	211	13.7	9.2-18.3	200	34.3	27.7-40.8	411	23.2	19.2-27.3
35 – 44	168	11.2	6.4-15.9	219	25.5	19.7-31.2	387	18.9	15.3-23.0
45 – 54	224	15.0	10.3-19.7	287	21.5	16.7-26.2	511	18.5	15.1-21.8

55 – 64	102	12.6	6.0-12.5	148	27.2	20.0-34.3	250	20.9	15.9-26.0
65 and older	87	39.2	28.7-49.2	100	52.6	42.8-62.3	187	46.0	38.8-53.1
Total	913	14.3	12.0-16.4	1087	29.0	26.3-31.7	2000	21.8	19.9-23.6
no recreation-related physical activity									
18 – 24	121	71.1	62.9-79.0	133	82.7	76.2-89.1	254	76.8	71.6-81.9
25 – 34	211	70.8	65.0-77.1	200	88.5	84.0-92.9	411	78.9	75.0-82.9
35 – 44	168	87.3	82.3-93.2	219	88.9	84.7-93.0	387	88.1	84.7-91.2
45 – 54	224	89.3	85.6-93.1	287	94.2	91.5-96.9	511	92.0	89.6-94.3
55 – 64	102	82.6	75.2-89.9	148	84.4	78.5-90.2	250	83.6	78.3-87.6
65 and older	87	93.2	87.1-98.3	100	93.5	88.3-98.3	187	93.4	89.8-96.9
Total	913	80.1	77.4-82.5	1087	88.6	86.7-90.5	2000	84.5	82.9-86.1

* - weighted percentages

The mean sedentary time was close to three hours per day (172 minutes) with no significant difference between men and women. This time tended to increase with age (see Table 30).

Table 30. Mean and median time (in minutes) spent in sedentary activities on a typical day, by gender and age groups.

Age Groups	Men				Women				Both Sexes			
	N	Mean	95% CI	Median	N	Mean	95% CI	Median	N	Mean	95% CI	Median
18 – 24	121	142	120-158	120	133	167	143-186	120	254	154	138-167	120
25 – 34	211	144	127-158	120	200	161	141-175	120	411	152	138-162	120
35 – 44	168	161	136-178	120	219	160	142-173	120	387	161	145-170	120
45 – 54	224	167	147-183	120	287	173	155-184	120	511	170	156-179	120
55 – 64	102	173	143-196	120	148	188	157-211	120	250	181	159-197	120
65 and older	87	270	225-304	240	100	309	259-353	240	187	290	256-318	240
Total	913	163	156-174	120	1087	179	170-188	120	2000	172	166-179	120.0

4.7. Blood pressure and diabetes history

Raised blood pressure and raised blood glucose are known risk factors of NCDs. Data on these risk factors were obtained first through the interview of the survey participants on blood pressure and blood glucose history (STEPS 1), and then through measurement of blood pressure (STEPS 2) and of blood glucose (STEPS 3).

Nineteen percent of the respondents said that they never had their blood pressure measured, 56.4% replied that they did have their blood pressure measured but not diagnosed with hypertension, whereas the remaining 19% and 7.6% said that they had been told by a health care worker about having hypertension within and not within the past 12 months respectively. More men than women said that their blood pressure had never been measured (20.4% and 14.2%

respectively), whereas more women than men reported being diagnosed with hypertension in the past 12 months (22.1% and 15.3% respectively). Not surprisingly, with increasing age more respondents had their blood pressure measured and had been diagnosed with hypertension (see Table 31).

Table 31. Blood pressure measurement and diagnosis among all respondents.

Age Groups	n	%* 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									
18 – 24	121	40.6	31.9-49.4	55.8	47.0-64.7	0.9	0.0-2.6	2.7	0.0-5.6
25 – 34	211	23.6	17.9-29.3	65.2	58.8-71.6	2.8	0.6-5.0	8.4	4.7-12.1
35 – 44	168	16.8	11.2-22.5	62.6	55.3-69.9	5.9	2.3-9.5	14.7	9.4-20.1
45 – 54	224	20.2	14.9-25.5	56.6	50.1-63.1	7.2	3.8-10.6	16.0	11.2-20.8
55 – 64	102	11.9	5.6-18.2	50.3	40.6-60.0	10.6	4.6-16.6	27.2	18.6-35.8
65 and older	87	2.1	0.0-5.1	43.4	33.0-53.8	15.5	7.9-23.1	39.0	28.8-49.3
Total	913	22.5	19.8-25.2	58.2	55.0-61.4	5.5	4.0-7.0	13.8	11.6-16.0
Women									
18 – 24	133	29.7	21.9-37.5	64.9	56.8-73.0	0.7	0.0-2.12	4.7	1.1-8.3
25 – 34	200	16.4	11.3-21.5	74.4	68.4-80.5	3.4	0.9-5.9	5.7	2.5-8.9
35 – 44	219	13.3	8.8-17.8	61.5	55.1-67.9	5.8	2.7-8.9	19.4	14.2-24.6
45 – 54	287	11.8	8.1-15.5	47.5	41.7-53.3	12.6	8.8-16.4	28.1	22.9-33.3
55 – 64	148	7.5	3.3-11.7	39.0	31.1-46.9	12.3	7.0-17.6	41.2	33.3-49.1
65 and older	100	8.2	2.8-13.6	31.5	22.4-40.6	19.8	12.0-27.6	40.6	31.0-50.2
Total	1087	15.7	13.5-17.9	57.3	54.4-60.2	7.5	5.9-9.1	19.4	17.1-21.8
Both Sexes									
18 – 24	254	35.2	29.3-41.1	60.3	54.3-66.3	0.8	0.0-1.9	3.7	1.4-6.0
25 – 34	411	20.3	16.4-24.2	69.4	64.9-73.9	3.1	1.4-4.8	7.2	4.7-9.7
35 – 44	387	14.9	11.4-18.5	62.0	57.2-66.8	5.9	3.6-8.3	17.2	13.4-21
45 – 54	511	15.7	12.6-18.9	51.7	47.4-56.0	10.1	7.5-12.7	22.5	18.9-26.1
55 – 64	250	9.4	5.8-13.02	43.9	37.8-50.1	11.6	7.6-15.6	35.2	29.3-41.1
65 and older	187	5.2	2.02-8.4	37.3	30.4-44.2	17.7	12.2-23.2	39.8	32.8-46.8
Total	2000	19.0	17.3-20.7	57.7	55.5-59.9	6.5	5.4-7.6	16.7	15.1-18.3

* - weighted percentages

Approximately 65% of the respondents previously diagnosed (within or not within past 12 months) with raised blood pressure took medicine for raised blood pressure. This proportion did not differ significantly between women and men (72.2% vs. 64.5%) but was increasing with age. In addition to medicines, 75.5% of such respondents were advised by their doctors or health workers to reduce salt intake, 35.0% were advised to lose weight, 21.1% were recommended to stop smoking, and 35.3% were advised to start or do more exercise. More men were advised to

stop smoking, which was expected due to higher prevalence of smoking among men. Men were also more frequently advised to increase exercise, whereas more women were recommended to reduce salt intake and lose weight. Generally, with increasing age the respondents were more likely to receive advice from their health providers on measures to reduce blood pressure (see Table 32).

Table 32. Percentage of respondents with diagnosed hypertension who were on medicines or received lifestyle advice from a doctor or health worker.

Age Groups	Men			Women			Both Sexes		
	n	%*	95%CI	n	%*	95%CI	n	%*	95%CI
% taking medicines									
18 – 24	0	0.0	0.0	3	43.6	0.0-99.7	3	28.9	0.0-80.2
25 – 34	11	48.4	18.9-77.9	10	55.6	24.8-86.4	21	51.4	30.0-72.8
35 – 44	18	51.6	28.5-74.7	33	59.9	43.2-76.6	51	56.5	42.9-70.1
45 – 54	34	65.7	49.7-81.7	84	73.4	64.0-82.9	118	70.9	62.7-79.1
55 – 64	29	76.3	60.8-91.8	61	78.0	67.6-88.4	90	77.4	68.8-86.0
65 and older	40	84.8	73.7-95.9	54	89.6	81.5-97.7	94	87.4	80.7-94.1
Total	132	64.5	56.3-72.7	245	72.2	66.6-77.8	377	69.1	64.4-73.8
% advised to reduce salt intake									
18 – 24	2	66.7	1.4-100.0	4	59.0	10.8-100.0	6	61.6	22.7-100.0
25 – 34	16	71.5	49.4-93.6	10	56.6	25.9-87.3	26	65.2	46.9-83.5
35 – 44	21	61.7	40.9-82.5	43	80.2	68.3-92.1	64	72.5	61.6-83.4
45 – 54	38	75.6	61.9-89.3	93	81.3	73.4-89.2	131	79.4	72.5-86.3
55 – 64	24	63.3	44.0-82.6	63	81.3	71.7-90.9	87	75.0	65.9-84.1
65 and older	38	80.5	67.9-93.1	50	82.2	71.6-92.8	88	81.4	73.3-89.5
Total	139	71.1	63.6-78.6	263	78.6	73.6-83.6	402	75.5	71.3-79.7
% advised to lose weight									
18 – 24	2	66.7	1.4-100.0	0	0.0	0.0	2	22.5	0.0-80.4
25 – 34	7	28.1	0.0-61.4	3	17.2	0.0-59.9	10	23.6	0.0-49.9
35 – 44	10	28.7	0.7-56.7	21	39.6	18.7-60.5	31	35.0	18.2-51.8
45 – 54	16	30.3	7.8-52.8	44	38.2	23.8-52.6	60	35.6	23.5-47.7
55 – 64	12	31.8	5.5-58.2	41	53.6	38.3-68.9	53	46.0	32.6-59.4
65 and older	12	25.4	0.8-50.0	23	38.0	18.2-57.8	35	32.2	16.7-47.7
Total	59	29.8	18.1-41.5	132	38.6	30.3-46.9	191	35.0	28.2-41.8
% advised to stop smoking									
18 – 24	1	33.3	0.0-100.0	0	0.0	0.0	1	12.5	0.0-77.3
25 – 34	12	51.6	23.3-79.9	0	0.0	0.0	12	31.9	5.5-58.3
35 – 44	16	50.0	25.5-74.5	0	0.0	0.0	16	20.2	0.5-39.9
45 – 54	28	55.8	50.1-61.6	6	5.3	0.0-23.2	34	22.4	8.4-36.4
55 – 64	10	28.4	0.5-56.4	8	10.6	0.0-31.9	18	17.1	0.0-34.5
65 and older	17	37.5	14.5-60.5	2	4.0	0.0-31.2	19	19.8	1.9-37.7
Total	84	44.6	34.0-55.2	16	4.5	0.0-14.7	100	21.1	13.1-29.1
% advised to start or do more exercise									
18 – 24	2	66.7	1.4-100.0	1	15.4	0.0-86.1	3	32.7	0.0-85.8
25 – 34	9	39.9	7.9-71.9	5	26.2	0.0-64.7	14	34.2	9.4-59.1
35 – 44	15	44.1	19.0-69.2	13	24.2	0.9-47.5	28	32.5	27.1-37.9
45 – 54	25	47.8	28.2-67.4	42	37.4	22.8-52.0	67	40.9	29.1-52.7

55 – 64	19	49.8	27.3-72.3	31	39.1	21.9-56.3	50	42.8	29.1-56.5
65 and older	14	28.8	5.1-52.5	12	20.6	0.0-43.5	26	24.4	7.9-40.9
Total	84	42.3	31.7-52.9	104	30.4	21.6-39.2	188	35.3	28.5-42.1

* - weighted percentages

Among the respondents previously diagnosed with raised blood pressure, 20.7% sought advice from traditional healers and 39.0% took herbal or traditional remedy with women and elder respondents generally using such practices more often (see Table 33).

Table 33. Percentage of respondents with diagnosed hypertension who have sought advice or received treatment from traditional healers.

Age Groups	Men			Women			Both Sexes		
	n	%*	95% CI	n	%*	95% CI	n	%*	95% CI
% seen a traditional healer									
18 – 24	0	0.0	0.0	1	15.4	0.0 -86.1	1	9.2	0.0 -65.9
25 – 34	1	4.7	0.0-46.2	2	11.1	0.0-54.6	3	7.3	0.0-36.7
35 – 44	8	23.4	0.0-52.7	9	16.4	0.0-40.6	17	19.3	0.6-38.1
45 – 54	11	21.4	0.0-45.6	32	27.6	12.1-43.1	43	25.6	12.6-38.6
55 – 64	5	13.0	0.0-42.5	18	23.7	4.1-43.3	23	20.0	3.7-36.4
65 and older	10	20.6	0.0-45.7	18	29.4	8.4-50.5	28	25.3	9.2-41.4
Total	35	16.9	4.5-29.3	80	23.3	14.0-32.6	115	20.7	13.3-28.1
% currently taking herbal or traditional remedy									
18 – 24	1	25.0	0.0-100.0	0	0.0	0.0	1	10.1	0.0-69.2
25 – 34	8	35.2	2.1-68.3	3	17.2	0.0-59.9	11	27.8	1.3-54.3
35 – 44	10	29.3	1.1-57.5	20	37.1	15.9-58.3	30	33.9	17.0-50.8
45 – 54	18	35.0	13.0-57.0	52	44.3	30.8-57.8	70	41.2	29.7-52.7
55 – 64	15	39.6	14.9-64.4	38	48.5	32.6-64.4	53	45.4	32.0-58.8
65 and older	20	42.0	20.4-63.6	30	50.0	32.1-67.9	50	46.3	32.5-60.1
Total	72	35.9	24.8-47.0	143	41.1	33.0-49.2	215	39.0	32.5-45.5

* - weighted percentages

The majority of the respondents (65.6%) reported that their blood sugar had never been measured, around a third of all respondents said that their blood sugar was measured but they had not been diagnosed with diabetes. Overall, 3.4% of all respondents reported being diagnosed with diabetes, including 3.0% in the past 12 months and 0.4% not within the past 12 months. There was no significant difference between men and women in the percentage of respondents diagnosed with diabetes. The greatest proportion of persons with diagnosed diabetes was found among the eldest age group (see Table 34).

Table 34. Diabetes measurement and diagnosis among all respondents.

Age Groups	N	%* Never measured	CI 95%	%* Measured, not diagnosed	CI 95%	%* Diagnosed, but not within past 12 months	CI 95%	%* Diagnosed within past 12 months	CI 95%
Men									
18 – 24	121	79.5	72.3-86.7	20.5	13.3-27.7	0.0	0.0	0.0	0.0
25 – 34	211	68.4	62.1-74.7	31.6	25.3-37.9	0.0	0.0	0.0	0.0
35 – 44	168	62.3	55.0-69.6	35.8	28.6-43.1	0.7	0.0-2.0	1.2	0.0-2.9
45 – 54	224	65.5	59.3-71.7	30.2	24.2-36.2	0.0	0.0	4.4	1.7-7.1
55 – 64	102	38.8	29.3-48.3	49.9	40.2-60.0	1.1	0.0-3.1	10.2	4.3-16.1
65 and older	87	49.1	80.5-93.5	39.0	29.5-48.5	2.3	0.0-5.2	9.5	3.8-15.2
Total	913	65.0	61.9-68.1	31.9	28.9-34.9	0.4	0.0-0.8	2.7	1.7-3.8
Women									
18 – 24	133	86.4	80.6-92.2	13.6	7.8-19.4	0.0	0.0	0.0	0.0
25 – 34	200	73.3	67.2-79.4	26.7	20.6-32.8	0.0	0.0	0.0	0.0
35 – 44	219	68.2	62.0-74.4	30.9	24.8-37.0	0.0	0.0	0.8	0.0-2.0
45 – 54	287	56.9	51.2-62.6	38.3	32.7-43.9	0.0	0.0	4.7	2.3-7.2
55 – 64	148	40.2	32.3-48.1	46.5	38.5-54.5	2.8	0.1-5.5	10.5	5.6-15.4
65 and older	100	51.1	41.3-60.9	32.0	22.9-41.1	2.0	0.0-4.7	14.8	7.8-21.8
Total	1087	66.2	63.4-69.0	30.0	27.3-32.7	0.5	0.1-0.9	3.0	2.3-4.5
Both sexes									
18 – 24	254	82.9	78.3-87.5	17.1	12.5-21.7	0.0	0.0	0.0	0.0
25 – 34	411	70.7	66.3-75.1	29.3	24.9-33.7	0.0	0.0	0.0	0.0
35 – 44	387	65.5	60.8-70.2	33.2	28.5-37.9	0.3	0.0-0.8	1.0	0.0-2.0
45 – 54	511	60.9	56.7-65.1	34.6	30.5-38.7	0.0	0.0	4.6	2.8-6.4
55 – 64	250	39.6	33.5-45.7	48.0	41.8-54.2	2.0	0.3-3.7	10.4	6.6-14.2
65 and older	187	50.2	43.0-57.4	35.4	28.6-42.3	2.2	0.1-4.3	12.2	7.5-16.9
Total	2000	65.6	63.5-67.7	30.9	28.9-32.9	0.4	0.1-0.7	3.0	2.3-3.8

* - weighted percentages

Almost 87.1% of the respondents diagnosed with diabetes reported that they had been registered in their local polyclinic. Around 10% of them were on insulin at the time of the interview and 87.2% took oral drugs in the past two weeks (see Table 35).

Table 35. Diabetes treatment results.

Age Groups	Men			Women			Both Sexes		
	n	%*	95%CI	n	%*	95%CI	n	%*	95%CI
% registered as a diabetic patient in local polyclinic									
18 - 24	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
25 - 34	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
35 - 44	2	64.7	0.0 - 100.0	1	50.0	0.0 - 100.0	3	59.6%	4.1 - 100.0
45 - 54	7	71.7	38.3 - 100.0	9	63.5	32.0 - 94.5	16	67.1%	44.1 - 90.1
55 - 64	9	91.1	72.5 - 100.0	16	78.3	58.1 - 98.5	25	83.0%	68.3 - 97.7
65 and older	10	100.0	100.0	15	94.1	82.2 - 100.0	25	96.6%	89.5 - 100.0
Total	28	85.7	72.7 - 98.37	41	78.5	65.9 - 91.0	69	81.5%	72.3 - 90.7
% currently taking insulin									
18 - 24	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
25 - 34	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0

35 - 44	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
45 - 54	0	0.0	0.0	1	8.1	0.0-71.3	1	4.5%	0.0-45.1
55 - 64	2	21.4%	0.0 - 78.2	2	9.4	0.0-51.2	4	13.9%	0.0-47.8
65 and older	1	10.7%	0.0 - 71.3	3	18.8	0.0-63.1	4	15.4%	0.0-50.8
Total	3	9.6%	0.0-42.9	6	11.8	0.0-37.6	9	10.9%	0.0-31.2
% currently taking oral drugs									
18 - 24	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
25 - 34	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
35 - 44	2	64.7	0.0-100.0	2	100.0	0.0	4	76.9	35.6-100.0
45 - 54	9	90.6	71.5-100.0	11	78.4	54.1-100.0	20	83.8	67.7-99.9
55 - 64	8	78.6	50.1-100.0	17	84.0	66.6-100.0	25	82.0	66.9-97.0
65 and older	10	100.0	100.0	15	94.1	82.2-100.0	25	96.6	89.5-100.0
Total	29	87.2	75.0-99.4	45	86.6	76.7-96.6	74	86.9	79.2-94.6

* - weighted percentages

In addition to medical treatment, the respondents with known diabetes were advised to have special diet (86.6%), to lose weight (36.3%), to stop smoking (23.7%), and to start or do more exercise (32.5%). With regards to gender, men were more likely to receive advice on smoking and exercising (see Table 36).

Table 36. Percentage of respondents with diagnosed diabetes who received lifestyle advice from a doctor or health worker.

Age Groups	Men			Women			Both Sexes		
	n	%*	95%CI	n	%*	95%CI	n	%*	95%CI
% advised to have special diet									
18 - 24	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 - 34	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35 - 44	1	35.3	0.0-100.0	2	100.0	100.0	3	57.8	1.9-100.0
45 - 54	8	81.1	60.0-100.0	12	86.5	67.2-100.0	20	84.1	68.1-100.0
55 - 64	10	100.0	100.0	17	84.0	66.6-100.0	27	89.9	78.5-100.0
65 and older	10	100.0	100.0	14	85.9	67.7-100.0	24	91.8	80.8-100.0
Total	29	87.4	75.3-99.5	45	86.0	75.9-96.1	74	86.6	78.8-94.4
% advised to lose weight									
18 - 24	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
25 - 34	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
35 - 44	1	35.3	0.0-100.0	2	100.0	100.0	3	57.8	1.9-100.0
45 - 54	4	41.5	0.0-89.9	5	36.5	0.0-78.7	9	38.7	6.9-70.5
55 - 64	5	50.0	6.2-93.8	9	45.3	12.8-77.8	14	47.0	20.9-73.1
65 and older	2	19.6	0.0-74.6	3	17.6	0.0-60.7	5	18.5	0.0-52.5
Total	12	36.1	8.9-63.3	19	36.4	14.8-58.0	31	36.3	19.4-53.2
% advised to stop smoking									
18 - 24	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 - 34	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35 - 44	2	64.7	0.0-100.0	0	0.0	0.0	2	42.2	0.0-100.0
45 - 54	6	58.5	19.1-97.9	0	0.0	0.0	6	25.8	0.0-60.8
55 - 64	3	30.4	0.0-82.5	3	15.1	0.0-55.6	6	20.7	0.0-53.1
65 and older	4	39.3	0.0-87.2	1	7.1	0.0-57.4	5	20.6	0.0-56.1
Total	15	44.9	19.7-70.1	4	7.9	0.0-34.3	19	23.7	4.6-42.8
% advised to start or do more exercise									

18 - 24	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
25 - 34	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
35 - 44	0	0.0	0.0	1	50.0	0.0-100.0	1	17.4	0.0-91.7
45 - 54	6	62.3	23.5-100.0	6	41.9	2.4-81.4	12	50.9	22.6-79.2
55 - 64	5	51.8	8.0-95.6	5	24.5	0.0-62.2	10	34.6	5.1-64.1
65 and older	2	19.6	0.0-74.6	3	18.8	0.0-63.0	5	19.2	0.0-53.7
Total	13	38.2	11.8-64.6	15	28.2	5.4-51.0	28	32.5	15.2-49.9

* - weighted percentages

Among the respondents previously diagnosed with diabetes, 23.2% sought advice from traditional healers and 30.3% took herbal or traditional (see Table 37).

Table 37. Percentage of respondents with diagnosed diabetes who have sought advice or received treatment from traditional healers.

Age Groups (years)	Men			Women			Both sexes		
	n	%*	95%CI	n	%*	95%CI	n	%*	95%CI
% saw a traditional healer									
18 - 24	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25 - 34	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35 - 44	1	29.4	0.0-100.0	1	50.0	0.0-100.0	2	36.5	0.0-100.0
45 - 54	3	30.2	0.0-82.2	4	27.0	0.0-70.5	7	28.4	5.01-61.8
55 - 64	1	10.7	0.0-71.3	5	24.5	0.0-62.2	6	19.4	0.0-51.0
65 and older	2	19.6	0.0-74.6	3	20.0	0.0-65.3	5	19.9	0.0-54.9
Total	7	21.1	0.0-51.3	13	24.8	1.3-48.3	20	23.2	4.7-41.7
% currently taking herbal or traditional remedy									
18 - 24	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
25 - 34	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
35 - 44	0	0.0	0.0	1	50.0	0.0-100.0	1	17.4	0.0-91.7
45 - 54	4	39.6	0.0-87.5	7	48.6	11.6-85.6	11	44.6	15.2-74.0
55 - 64	3	30.4	0.0-82.5	6	29.2	0.0-65.6	9	29.7	0.0-59.6
65 and older	2	19.6	0.0-74.6	4	24.7	0.0-67.0	6	22.6	0.0-56.1
Total	9	25.9	0.0-54.5	18	33.6	11.8-55.4	27	30.3	0.0-47.6

* - weighted percentages

4.8. Physical measurements

Overweight and obesity are risk factors of a number of medical conditions including diabetes, heart disease and stroke. They are characterized by abnormal or excessive fat accumulation. Physical measurements were used to categorize respondents as overweight or obese according to their weight and height, and as centrally or peripherally overweight or obese according to their waist and hip circumference.

The men were substantially taller and heavier than women (171 cm and 77 kg vs. 160 cm and 71 kg respectively). The mean body mass index (BMI) was 27.0 with women having higher BMI than men (27.6 vs. 26.5 respectively) (see Table 38).

Table 38. Mean height, weight, and body mass index among all respondents.

Age Groups (years)	Men			Women			Both sexes		
	n	Mean*	95% CI	n	Mean*	95% CI	n	Mean*	95% CI
Mean height (cm)									
18 - 24	121	172.2	171.1-173.4	133	161.3	160.3-162.3	254	166.8	165.5-167.5
25 - 34	210	172.4	171.7-173.3	200	161.3	160.4-162.3	410	167.3	166.2-167.8
35 - 44	168	172.5	171.5-173.6	219	160.5	159.8-161.4	387	166	164.9-166.6
45 - 54	224	171.0	170.3-172.0	287	160.4	159.8-161.2	511	165.3	164.4-165.9
55 - 64	102	170.8	169.8-172.0	148	159.6	158.4-160.8	250	164.4	163.1-165.3
65 and older	87	167.0	165.6-168.8	99	157.6	156.0-159.2	186	162.3	160.8-163.4
Total	912	171.0	170.7-171.8	1086	160.1	159.9-160.4	1998	165.4	164.8-165.6
Mean weight (kg)									
18 - 24	121	71.0	69.1-73.0	133	59.8	57.3-60.5	254	65.0	63.3-66.1
25 - 34	210	74.9	73.3-76.8	200	66.2	64.4-68.6	410	71.0	69.4-72.3
35 - 44	168	78.7	76.9-81.0	219	72.0	70.3-73.9	387	75.1	73.7-76.5
45 - 54	224	79.1	77.6-81.0	287	76.8	75.2-78.7	511	77.9	76.7-79.1
55 - 64	102	83.2	80.8-86.0	148	78.0	75.5-80.4	250	80.3	78.3-82.0
65 and older	87	77.1	74.3-79.7	98	71.0	68.3-73.9	185	74.0	72.0-75.9
Total	912	77.3	75.3-78.8	1085	70.6	69.3-71.8	1997	73.9	72.9-74.8
Mean BMI (kg/m2)									
18 - 24	121	23.9	23.4-24.5	133	22.6	22.0-23.1	254	23.3	22.8-23.7
25 - 34	210	25.2	24.7-25.8	200	25.4	24.7-26.1	410	25.3	24.9-25.8
35 - 44	168	26.4	25.8-27.0	219	27.9	27.3-28.6	387	27.2	26.8-27.8
45 - 54	224	27.0	26.5-27.6	287	29.8	29.2-30.5	511	28.5	28.2-29.1
55 - 64	102	28.6	27.7-29.5	148	30.7	29.7-31.7	250	29.8	29.1-30.6
65 and older	87	27.7	26.6-28.6	98	28.6	27.6-29.8	185	28.1	27.4-28.9
Total	912	26.5	26.1-26.8	1085	27.6	27.2-28.1	1997	27.0	26.8-27.3

* - weighted values

All respondents (except pregnant women) were grouped into four categories according to BMI value. Underweight is defined as having a BMI less than 18.5kg/m², normal weight is defined as a BMI ranging from 18.5 to 24.9kg/m², overweight is defined as having a BMI greater than or equal to 25 kg/m² and below 30kg/m² whereas obesity is defined as having a BMI greater than or equal to 30 kg/m². The proportion of the respondents classified as overweight and obese was 35.8% and 21.9% respectively. The obesity was substantially more prevalent among women than men (27.2% vs. 16.4%). The two youngest age groups of respondents (18-24 and 25-34 years) were found to have the least prevalence of overweight and obesity as compared to other age groups. When examined by residence, significantly higher proportion of rural residents had normal weight and significantly smaller proportion of them was found overweight in comparison with urban residents (44.4% and 32.5% vs. 35.2% and 38.6% respectively) (see Table 39).

Table 39. Percentage of respondents in each BMI category.

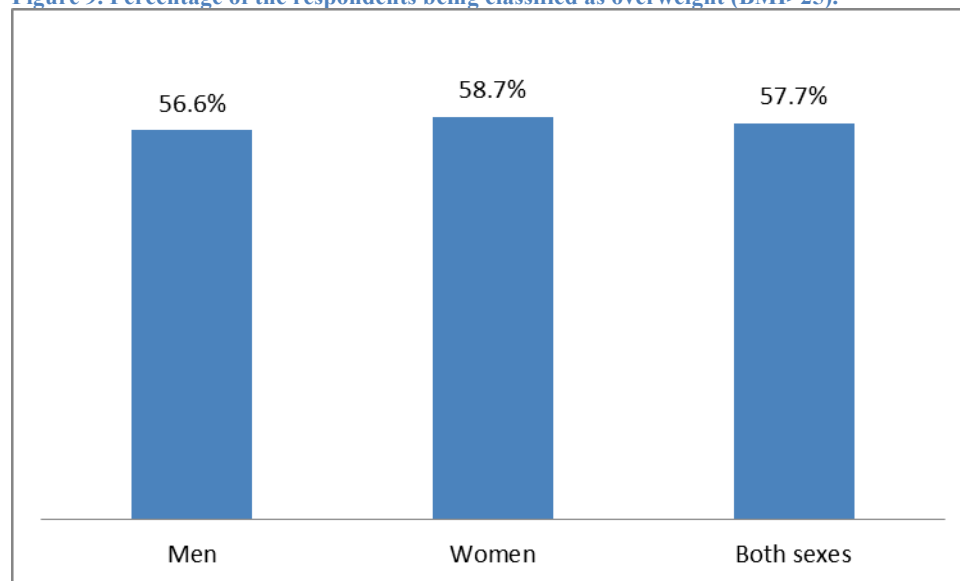
	n	Underweight: <18.5	Normal weight: 8.5-24.9	Overweight: 25.0-29.9	Obese: ≥30
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		%*	95%CI	%*	95%CI	%*	95%CI	%*	95%CI
Men by age groups									
18 - 24	121	2.4	0.0-5.1	64.2	55.7-72.7	27.7	19.7-35.7	5.7	1.6-9.8
25 - 34	210	1.8	0-3.6	48.2	41.4-55.5	36.6	30.1-43.1	13.5	8.9-18.1
35 - 44	168	1.3	0.4-3.0	36.5	29.2-43.8	47.5	40.0-55.1	14.7	9.4-20.1
45 - 54	224	0.0	0.0	32.7	26.6-38.8	43.1	36.6-49.6	24.2	18.6-29.8
55 - 64	102	2.0	0.0-4.7	15.7	8.6-22.8	48.8	39.1-58.5	33.5	24.3-42.7
65 and older	87	1.1	0.0-3.3	25.0	15.9-34.1	52.1	41.6-62.6	21.8	13.1-30.5
Total	912	1.4	0.6-2.2	41.9	38.7-45.1	40.2	37.0-43.4	16.4	14.0-18.8
Women by age groups									
18 - 24	122	9.5%	4.3-14.7	72.7	64.8-80.6	16.1	9.6-22.6	1.7	0.0-4.0
25 - 34	189	5.4%	2.2-8.6	48.8	41.7-55.9	32.5	25.8-39.2	13.4	8.5-18.3
35 - 44	219	1.0%	0.0-2.3	30.3	24.2-36.4	35.4	29.1-41.7	33.3	27.1-39.5
45 - 54	286	0.4%	0.0-1.1	20.3	15.6-24.9	36.5	30.9-42.1	42.9	37.2-48.6
55 - 64	148	1.9%	0.0-4.1	14.0	8.4-19.6	37.8	30.0-45.6	46.3	38.3-54.3
65 and older	98	0.0%	0.0	31.2	22.0-40.4	31.2	22.0-40.4	37.6	28.0-47.2
Total	1062	3.3%	2.2-4.4	38.0	35.1-40.9	31.4	28.6-34.2	27.2	24.5-29.9
Both sexes by age groups									
18 - 24	243	5.8	2.9-8.7	68.2	62.3-74.1	22.2	17.0-27.4	3.8	1.4-6.2
25 - 34	399	3.4	1.6-5.2	48.4	43.5-53.3	34.7	30.0-39.4	13.5	10.2-16.9
35 - 44	387	1.2	0.1-2.3	33.1	28.4-37.8	40.9	36.0-45.8	24.8	20.5-29.1
45 - 54	510	0.2	0.0-0.6	26.0	22.2-29.8	39.5	35.3-43.7	34.3	30.2-38.4
55 - 64	250	1.9	0.2-3.6	14.8	10.4-19.2	42.5	36.4-48.6	40.8	34.7-46.9
65 and older	185	0.5	0.0-1.5	28.1	21.6-34.6	41.6	34.5-48.7	29.8	23.2-36.4
Total	1974	2.4	1.7-3.1	39.9	37.7-42.1	35.8	33.7-37.9	21.9	20.1-23.7
Residence									
Urban	1138	3.3	2.3-4.3	35.2	32.4-37.9	38.6	35.8-41.4	22.9	20.5-25.3
Rural	836	2.7	1.6-3.8	44.4	41.0-47.8	32.5	29.3-35.7	20.4	17.7-23.1

* - weighted percentages

The percentage of the respondents having above-normal weight ($BMI \geq 25$) was 57.7% with little difference between men and women (56.6% and 58.7% respectively) (see Figure 9).

Figure 9. Percentage of the respondents being classified as overweight (BMI>25).



Among physical measures taken was waist circumference. The results revealed that the mean waist circumference was 89.2 and 85.0 cm respectively for men and women. The circumference tended to increase with age (see Table 40).

Table 40. Mean waist circumference among all respondents (excluding pregnant women).

Age Groups	Men			Women		
	n	Mean*	95% CI	n	Mean*	95% CI
18 - 24	108	81.9	79.7-83.8	122	71.5	68.7-74.0
25 - 34	197	85.3	83.5-87.3	188	79.0	77.2-80.8
35 - 44	154	90.7	88.7-93.0	219	86.6	84.5-88.5
45 - 54	206	93.9	91.7-95.9	285	92.7	91.1-94.5
55 - 64	95	96.1	92.8-99.5	146	95.6	93.0-98.0
65 and older	80	95.6	92.3-98.2	93	91.6	88.2-95.1
Total	840	89.2	86.4-91.5	1053	85.0	83.5-87.4

* - weighted values

The survey found that the mean blood pressure among all respondents, including those currently on medications for raised blood pressure, was 135 mmHg for the systolic and 83 mmHg for the diastolic with no substantial gender differences. Interestingly, rural residents were found to have higher both systolic and diastolic blood pressures in comparison to urban residents (141.7mm Hg and 86.2mmHg vs. 133.4mm Hg and 81.8mm Hg respectively) (see Table 41).

Table 41. Mean blood pressure among all respondents.

	Men			Women			Both sexes		
	n	Mean*	95% CI	n	Mean*	95% CI	n	Mean*	95% CI
Mean systolic blood pressure by age groups									
18 - 24	120	124.3	121.0-126.5	133	119.3	116.2-121.3	253	121.8	119.3-122.9
25 - 34	210	126.3	124.0-128.2	197	120.0	118.1-121.4	407	123.4	121.7-124.4
35 - 44	167	135.9	132.5-138.6	218	134.6	128.7-133.8	385	133.6	131.2-135.1
45 - 54	223	141.2	138.1-143.7	287	144.5	141.2-147.0	510	143.0	140.7-144.7
55 - 64	102	148.6	143.2-143.7	147	151.4	146.8-154.9	249	150.2	146.6-152.9
65 and older	87	163.1	157.0-168.1	100	164.4	158.3-168.9	187	163.8	159.4-166.9
Mean systolic blood pressure by residence									
Urban	523	134.0	132.0-135.9	633	132.9	131.0-134.7	1156	133.4	132-134.4
Rural	386	141.3	139.0-143.6	449	142.1	139.6-144.7	835	141.7	140-143.4
Total	909	135.3	133.8-136.8	1082	134.1	132.6-135.6	1991	134.7	133.7-135.7
Mean diastolic blood pressure by age groups									
18 - 24	120	76.7	74.8-78.2	132	75.7	73.3-77.3	252	76.1	74.5-77.2
25 - 34	211	79.3	77.6-80.8	200	76.9	75.5-78.2	411	78.2	77.0-79.1
35 - 44	167	85.1	83.0-86.9	219	82.7	81.1-84.0	386	83.8	82.4-84.8
45 - 54	224	87.3	85.5-88.7	287	87.6	85.7-88.9	511	87.4	86.1-88.4
55 - 64	101	88.6	85.8-91.1	148	88.7	86.2-90.5	249	88.7	86.7-90.1
65 and older	87	91.3	87.9-94.4	100	90.9	87.6-93.6	187	91.1	88.7-93.0
Mean diastolic blood pressure by residence									
Urban	523	82.8	81.6-83.9	633	80.9	80.0-81.8	1156	81.8	81.0-82.5
Rural	387	85.6	84.3-86.9	453	86.8	85.4-88.2	840	86.2	85.3-87.2
Total	910	83.0	82.2-83.8	1086	82.4	81.6-83.2	1996	82.7	82.1-83.2

* - weighted values

When those currently on medication for hypertension were excluded, the respondents with mild to severe raised blood pressure (SBP \geq 140 and/or DBP \geq 90mmHg) and moderate to severe raised blood pressure (SBP \geq 160 and/or DBP \geq 100 mmHg) represented 36.4% and 17.8% respectively. The share of respondents with mild to severe and severe raised blood pressure or currently taking medication was respectively 39.4% and 24.9%. When examined by residence, significantly greater share of rural respondents had mild to severe raised blood pressure or was on medication for raised blood pressure in comparison to urban residents (45.8% vs. 33.7% respectively) (see Table 42).

Table 42. Percentage of the respondents with raised blood pressure.

	Men			Women			Both Sexes		
	N	%*	95%CI	n	%*	95%CI	N	%*	95%CI
SBP\geq140 and/or DBP\geq90, excluding those on medication by age groups									
18 - 24	119	17.4	10.6-24.1	129	12.7	7.0-18.5	248	15.1	10.7-19.5
25 - 34	199	22.0	16.4-27.6	187	11.7	7.3-16.1	386	17.2	13.5-20.8
35 - 44	149	38.1	30.7-45.4	185	29.4	23.4-35.4	334	33.4	28.7-38.1
45 - 54	189	47.1	40.6-53.6	203	54.9	49.1-60.6	392	51.3	46.9-55.6
55 - 64	73	61.2	51.7-70.6	86	67.6	60.0-75.2	159	64.9	58.9-70.8
65 and older	47	82.4	74.4-90.4	46	84.6	77.5-91.6	93	83.6	78.3-88.9

Total	776	36.8	33.7-39.9	836	36.1	33.2-38.9	1612	36.4	34.3-38.5
SBP>=140 and/or DBP>=90 or currently on medication by age groups									
18 - 24	121	17.4	10.6-24.1	133	14.2	8.3-20.1	254	15.8	11.3-20.3
25 - 34	211	25.0	19.2-30.8	200	15.3	10.3-20.3	411	20.6	16.7-24.5
35 - 44	168	39.2	31.8-46.6	219	35.8	29.5-42.1	387	37.3	32.5-42.1
45 - 54	224	50.0	43.4-56.5	287	59.0	53.3-64.7	511	54.9	50.6-59.2
55 - 64	102	64.4	55.1-73.7	148	72.8	65.6-79.9	250	69.2	63.5-74.9
65 and older	87	84.5	76.9-92.1	100	86.7	80.0-93.3	187	85.6	80.6-90.6
SBP>=140 and/or DBP>=90 or currently on medication by residence									
Urban	523	33.0	28.9-37.0	634	34.3	30.0-38.0	1157	33.7	31.0-36.4
Rural	390	44.9	40.0-50.0	453	46.8	42.2-51.4	843	45.8	42.4-49.1
Total	913	38.7	35.5-41.8	1087	40.0	37.1-42.9	2000	39.4	37.3-41.5
SBP>=160 and/or DBP>=100, excluding those on medication									
18 - 24	119	2.5	0.0-5.2	129	3.8	0.5-7.2	248	3.1	0.9-5.2
25 - 34	199	5.2	2.2-8.2	187	1.4	0.0-3.0	386	3.5	1.7-5.2
35 - 44	149	18.1	12.3-23.9	185	12.5	8.1-16.9	334	15.1	11.5-18.6
45 - 54	189	24.6	18.9-30.2	203	26.5	21.4-31.6	392	25.6	21.8-29.3
55 - 64	73	34.0	24.8-43.2	86	41.4	33.5-49.3	159	38.2	32.2-44.2
65 and older	47	58.5	48.1-68.8	46	62.0	52.5-71.5	93	60.3	53.3-67.3
Total	776	17.3	14.8-19.7	836	18.3	16.0-20.3	1612	17.8	16.1-19.5
SBP>=160 and/or DBP>=100 or currently on medication									
18 - 24	121	2.5	0.0-5.2	133	6.1	2.1-10.5	254	4.3	1.8-6.8
25 - 34	211	10.2	6.0-14.3	200	6.5	3.0-9.2	411	8.5	5.8-11.2
35 - 44	168	22.2	15.9-28.5	219	21.1	15.7-26.5	387	21.6	17.5-25.7
45 - 54	224	32.2	26.0-38.3	287	41.5	35.8-47.2	511	37.3	33.1-41.5
55 - 64	102	45.0	35.4-54.6	148	55.5	47.5-63.5	250	50.9	44.7-57.1
65 and older	87	70.1	60.5-79.2	100	73.9	65.3-82.5	187	72.1	65.7-78.5
Total	913	22.6	19.9-25.3	1087	27.1	24.5-29.7	2000	24.9	23.0-26.8

* - weighted percentages

Overall, 872 out of 2000 respondents had raised blood pressure or were taking medicines for hypertension. Of them, 7.5% were on medication and had their blood pressure controlled, 34.6% were taking drugs for raised blood pressure but did not have it controlled, and, finally, 57.9% were not taking any anti-hypertensive medicines and did not have their blood pressure under control. Around half of women were on medication, whereas only slightly about the third of men were on treatment. When examined by age groups, the share of patients on treatment tended to increase with age (see Table 43).

Table 43. Percentage of respondents with treated and/or controlled raised blood pressure among those with raised blood pressure or currently on medication for raised blood pressure

Age Groups	N	% On medication and SBP<140 and/or DBP<90		% On medication and SBP>140 and/or DBP>90		% Not on medication and SBP>140 and/or DBP>90	
		%*	95%CI	%*	95%CI	%*	95%CI
Men							
18 - 24	20	0.0	0.0	0.0	0.0	100.0	100.0

25 – 34	52	11.9	3.1-20.7	9.4	1.5-17.3	78.7	67.5-89.8
35 – 44	64	3.3	0.0-7.8	24.5	13.9-35.0	72.2	61.2-83.1
45 – 54	111	5.5	1.3-9.7	25.1	17.0-33.2	69.4	60.8-77.9
55 – 64	65	4.1	0.0-8.9	40.4	28.5-52.3	55.5	43.4-67.5
65 and older	73	3.1	0.0-7.0	50.1	38.6-61.6	46.8	35.4-58.2
Total	385	5.1	2.9-7.3	29.1	24.5-33.6	65.8	61.0-70.5
Women							
18 – 24	18	11.3	0.0-25.9	5.6	0.0-16.2	83.1	67.8-100.0
25 – 34	30	23.8	8.6-39.0	10.0	0.0-20.2	66.2	45.2-82.3
35 – 44	77	18.8	10.4-27.8	24.0	14.5-33.5	57.2	45.9-68.0
45 – 54	168	6.9	3.0-10.4	42.8	35.6-50.2	50.3	42.0-57.8
55 – 64	107	7.5	2.5-12.3	50.0	40.5-59.4	42.5	33.1-51.8
65 and older	86	2.5	0.0-5.8	60.6	50.2-70.9	36.9	26.7-47.1
Total	486	9.5	6.9-12.1	41.0	36.6-45.3	49.5	45.3-53.1
Both Sexes							
18 – 24	38	5.5	0.0-12.5	2.5	0.0-7.5	92.0	83.4-100.0
25 – 34	82	16.1	8.1-24.0	9.7	3.3-16.5	74.2	65.0-84.2
35 – 44	142	11.6	6.3-16.2	24.3	17.2-31.3	64.1	56.2-71.9
45 – 54	279	7.1	4.0-10.3	34.9	29.4-40.6	58.0	52.1-63.8
55 – 64	172	6.3	2.6-9.9	45.6	38.1-53.2	48.1	40.5-55.4
65 and older	159	2.2	0.0-4.5	56.4	48.7-64.1	41.4	33.7-49.0
Total	872	7.5	5.7-9.2	34.6	31.4-37.7	57.9	54.6-61.1

* - weighted values

Interestingly, that among 377 respondents taking medication for raised blood pressure only 64 or 17.0% had their blood pressure controlled. This indicates to poor management of hypertensive patients by health care system.

Mean heart rate was 81 and 84 beats per minutes respectively for men and women (see Table 44).

Table 44. Mean heart rate (beats per minutes).

Age Groups	Men			Women		
	n	Mean	95% CI	n	Mean	95% CI
18 - 24	121	82.4	79.6-84.2	132	86.7	83.0-89.2
25 - 34	210	81.2	79.5-82.5	200	84.0	82.0-85.5
35 - 44	168	81.0	79.2-82.5	216	85.6	83.5-86.8
45 - 54	224	81.4	79.8-82.6	287	85.1	83.5-86.2
55 - 64	102	82.7	80.1-84.6	148	83.1	81.0-84.7
65 and older	87	82.1	79.3-84.8	99	83.2	81.0-85.3
Total	912	81.4	80.6-82.1	1082	84.4	83.6-85.2

4.9. Biochemical measurements

With no substantial difference between men and women, the mean fasting glucose level was 5.4 mmol/l. There was no significant difference in glucose level between men and women (see Table 45).

Table 45. Mean fasting glucose among all respondents.

Age Groups	Men			Women			Both Sexes		
	n	Mean*	95% CI	n	Mean*	95% CI	n	Mean*	95% CI
Mean fasting glucose (mg/dl)									
18 - 24	121	87.0	85.0-88.9	133	90.0	87.9-91.9	254	88.5	87.1-89.9
25 - 34	209	90.0	88.3-91.6	200	91.5	89.9-92.9	409	90.7	89.5-91.8
35 - 44	166	95.9	91.5-100.6	219	95.5	92.2-98.9	385	95.7	93.0-98.5
45 - 54	224	100.5	96.1-104.4	286	99.6	96.8-102.5	510	100.0	97.5-102.4
55 - 64	101	105.9	99.2-108.3	148	112.3	105.5-114.6	249	109.6	104.7-113.4
65 and older	87	110.4	98.8-121.1	100	119.2	107.1-130.2	187	114.9	106.6-122.7
Total	908	95.4	94.9-98.7	1086	98.1	97.8-101.4	1994	96.8	94.3-99.6
Mean fasting glucose (mmol/l)									
18 - 24	121	4.8	4.7-4.9	133	5.0	4.9-5.1	254	4.9	4.8-5.0
25 - 34	209	4.9	4.9-5.0	200	5.1	5.0-5.2	409	5.0	4.9-5.1
35 - 44	166	5.3	5.0-5.6	219	5.3	5.1-5.5	385	5.3	5.2-5.5
45 - 54	224	5.6	5.3-5.8	286	5.5	5.4-5.7	510	5.6	5.4-5.7
55 - 64	101	5.9	5.5-6.1	148	6.2	5.9-6.6	249	6.0	5.8-6.3
65 and older	87	6.1	5.4-6.7	100	6.4	6.0-7.2	187	6.3	6.0-6.8
Total	908	5.4	5.3-5.5	1086	5.5	5.4-5.6	1994	5.4	5.3-5.5

* - weighted values

Since capillary whole blood was used for glucose measurement, the following cut-off values for categorization of the respondents into blood glucose level categories were used:

- Normal < 100 mg/dl (<5.6 mmol/l)
- Impaired fasting glucose ≥ 100 mg/dl (≥ 5.6 mmol/l) and <110 mg/dl (<6.1 mmol/l)
- Diabetes ≥ 110 mg/dl (≥ 6.1 mmol/l)

Overall, 16.7% of the respondents had impaired fasting glycaemia, and 10.6% were found to have hyperglycemia (see Table 46).

Table 46. Grouping of respondents into blood glucose level categories.

Age Groups	Men			Women			Both Sexes		
	n	%*	95% CI	n	%*	95% CI	n	%*	95% CI
Impaired fasting glycemia									
18 - 24	11	9.4	0.0-26.5	22	16.9	1.2-32.5	33	13.1	1.6-24.6
25 - 34	30	14.0	1.6-26.4	31	15.4	2.7-28.1	61	14.7	5.8-23.6
35 - 44	22	12.8	0.0-26.7	44	20.0	8.1-31.2	66	16.7	7.7-25.7
45 - 54	39	17.6	5.6-29.5	62	21.7	11.4-31.9	101	19.8	12.0-27.7

55 - 64	19	18.5	1.0-35.9	42	27.8	14.2-41.3	61	23.8	13.1-34.5
65 and older	11	12.7	6.9-32.3	19	19.1	2.1-36.8	30	15.9	2.8-28.9
Total	132	13.8	7.9-19.7	220	19.5	14.2-24.7	352	16.7	12.8-20.6
Hyperglycemia									
18 - 24	2	1.8	0.0-20.3	5	4.0	0.0-21.1	7	2.9	0.0-15.6
25 - 34	9	4.4	0.0-17.8	9	4.7	0.0-18.5	18	4.5	0.0-14.2
35 - 44	15	9.2	0.0-15.3	16	7.5	0.0-20.4	31	8.3	0.0-18.2
45 - 54	31	14.0	1.8-26.2	38	13.1	2.3-23.8	69	13.5	5.4-21.6
55 - 64	22	22.3	4.9-39.2	42	28.4	14.4-41.5	64	25.8	15.1-36.5
65 and older	18	21.4	2.5-40.2	35	35.0	19.2-50.8	53	28.3	16.1-40.2
Total	97	9.4	3.6-15.2	145	11.8	6.5-17.0	242	10.6	6.7-14.5
Currently on medication for diabetes									
18 - 24	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
25 - 34	0	0.0	0.0	0	0.0	0.0	0	0.0	0.0
35 - 44	0	0.0	0.0	1	0.5	0.0-14.3	1	0.3	0.0-11
45 - 54	4	1.8	0.0-15.7	7	2.4	0.0-13.4	11	2.2	0.0-10.8
55 - 64	3	2.9	0.0-21.8	6	4.1	0.0-19.8	9	3.6	0.0-15.7
65 and older	2	2.3	0.0-23.0	4	4.0	0.0-23.5	6	3.2	0.0-18.4
Total	9	1.0	0.0-7.5	18	1.7	0.0-7.6	27	1.4	0.0-5.8

* - weighted percentages

4.10. Summary of combined risk factors

Combined risk factors of NCDs can be summarized as respondents with 0, 1-2, or 3-5 of the following risk factors:

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

The survey found that only one out of twenty respondents did not have any risk factor for NCDs, whereas 62.7% had 1-2 risk factors and the remaining 32.4% had a combination of 3-5 risk factors. Significantly greater proportion of men than women had 3-5 risk factors combined (38.9% and 26.1% respectively), which may be primarily explained by higher prevalence of daily smoking among men. When examined by residence, significantly higher proportion of urban residents did not have any risk factors and significantly smaller proportion of them had 3 and more risk factors in comparison with rural residents (7.3% and 28.4% vs. 3.2% and 36.9% respectively) (see Table 47).

Table 47. Summary of combined risk factors for NCDs.

Age Group	N	% with 0 risk factors		% with 1-2 risk factors		% with 3-5 risk factors	
		%	95% CI	%	95% CI	%	95% CI
Men							
18 - 24	118	9.8	4.4-15.1	76.2	68.5-83.8	14.0	7.7-20.2
25 - 34	208	2.4	0.3-4.5	65.3	58.8-71.7	32.3	25.9-38.6
35 - 44	168	0.5	0.0-1.6	52.8	45.2-60.3	46.6	45.2-60.3
45 - 54	223	1.2	0.0-2.6	47.7	41.1-54.2	51.1	44.5-57.6
55 - 64	102	0.0	0.0	43.3	33.7-52.9	56.7	47.0-66.3
65 and older	87	0.0	0.0	41.7	31.3-52.0	58.3	47.9-68.6
Total	906	2.9	1.8-3.9	58.2	54.9-61.4	38.9	35.7-42.0
Women							
18 - 24	133	15.0	8.9-21.0	82.5	76.0-88.9	2.5	0.0-5.1
25 - 34	200	11.8	7.3-16.2	77.3	71.1-82.8	10.9	6.8-15.2
35 - 44	219	3.5	1.0-5.9	72.3	66.4-78.2	24.2	18.5-29.8
45 - 54	287	2.6	0.8-4.4	55.4	49.6-61.1	42.0	36.3-47.7
55 - 64	148	1.4	0.0-3.3	44.1	36.1-52.1	54.5	46.5-62.5
65 and older	100	1.0	0.0-2.3	48.8	39.0-58.6	50.2	40.4-60.0
Total	1087	6.9	5.4-8.4	67.0	64.2-69.8	26.1	23.5-28.7
Both Sexes							
18 - 24	217	12.4	8.0-16.8	79.3	73.9-84.7	8.3	4.6-11.9
25 - 34	376	6.7	4.1-9.2	70.8	66.2-75.4	22.5	18.3-26.7
35 - 44	375	2.1	0.7-3.6	63.3	58.4-68.2	34.5	29.7-39.3
45 - 54	499	2.0	0.8-3.2	51.8	47.2-56.2	46.2	41.8-50.6
55 - 64	247	0.8	0.0-1.9	43.8	37.6-49.9	55.4	49.2-61.6
65 and older	182	0.5	0.0-1.5	45.3	38.0-52.5	54.2	46.9-61.4
Total	1896	4.9	3.9-5.8	62.7	60.6-64.8	32.4	30.3-34.5
Residence							
Urban	1157	7.3	5.8-8.8	64.3	61.5-67.0	28.4	25.8-31.0
Rural	843	3.2	2.0-4.4	59.9	56.6-63.2	36.9	33.6-40.2

4. Discussion

This is the first nationwide representative survey using the WHO standardized protocol to report the prevalence and risk factors of NCDs in Azerbaijan.

4.1. Noncommunicable diseases

4.1.1. Hypertension

The mean systolic and diastolic blood pressures were found at 135 and 83 mmHg respectively. The survey revealed that the prevalence of hypertension (systolic blood pressure ≥ 140 mmHg and/or diastolic blood pressure ≥ 90 mmHg or currently on medication for raised blood pressure) among the entire sample was very high at 39.4%. There was no significant difference in

hypertension prevalence between men and women. However, a significant difference was observed between urban and rural residents (33.7% and 45.8% respectively). One of the possible explanations for this difference is the lower share of rural residents who were on medication for hypertension (68% and 76% respectively), which can be a result of the greater problem with access to treatment among rural residents who are generally less better off than urban residents.

The prevalence of self-reported diagnosed hypertension was only 58.9% of the actual level (23.2% of the entire sample), which indicates to the poor screening practices at primary health care level to detect hypertension among population. Around 69.1% of those with self-reported hypertension were taking medicines, and only 17.0% of them had their blood pressure controlled, which points to the poor management of hypertension by health care system. The awareness of patients about lifestyle modifications to address raised blood pressure was also not adequate. In particular, only 35.0% of those with diagnosed hypertension received advice to lose weight, whereas more than 80% of them were overweight or obese. Similarly, only 20.0% and 35.9% of the respondents with hypertension were advised to quit smoking and to do more exercise respectively. These findings revealed that awareness raising efforts to modify lifestyle factors contributing to hypertension were generally insufficient.

4.1.2. Diabetes

The survey revealed high level of hyperglycemia among the survey participants (10.6%) with mean capillary fasting blood glucose level of 5.4 mmol/l (97 mg/dl). Both impaired fasting glycemia and hyperglycemia were more prevalent among women than men (19.5% and 11.8% vs. 13.8% and 9.4% respectively). The prevalence of self-reported diabetes was much lower than the prevalence of fasting hyperglycemia (3.5% vs. 10.6% respectively). As with hypertension, these findings indicate to poor screening efforts to detect elevated blood glucose levels with 65.6% of the respondents reporting never having their blood glucose measured. Around 18% of diabetes patients were not registered at local polyclinic and therefore were not eligible for the benefits available through the State Program on Diabetes. The analysis of data revealed that the counseling service for diabetes patients were not adequate with only 36.3% of the patients advised to lose weight, 23.7% advised to stop smoking and 32.5% recommended doing more physical exercise.

4.2. Risk factors for NCDs

4.2.1. Tobacco use

The overall self-reported prevalence of smoking was 22.9% with very high prevalence among men (48.7%) and low prevalence among women (0.5%). However, the possibility of underreporting among female respondents cannot be excluded. For example, among the women diagnosed with hypertension around 5% received advice to stop smoking, including as many as 11% of 55-64 years old.

The vast majority of smoking men smoked daily (93.1%). The mean age of initiating smoking among men was 19 years. The mean duration of smoking was 22 years. Almost all smokers smoked manufactured cigarettes with mean consumption of 20 cigarettes per day. The peak prevalence of smoking (and daily smoking) is amongst men aged 35-44 years at 61.0% (and 58.1%). Smoking prevalence in the 18-24 years age band is only 55% of this rate (at 33.8%). Considering that 88% of the smokers reported initiation of daily smoking before 24 years of age, this finding may possibly indicate that the smoking prevalence amongst young adults now is lower than for the same age band in previous generations and there is a trend that uptake amongst the young is reducing

The survey revealed high prevalence of exposure to environmental tobacco smoke (ETS) or passive smoking with most common exposure site being public places. Almost 77% of men were exposed to ETS at public places and 56% of them at workplace. The greatest exposure for women occurred at home (more than 41%). These findings indicate to the need in additional educational and legislative efforts to reduce exposure to ETS.

The findings correspond to the results of Demographic and Health Survey (DHS) conducted in 2006, which reported that about half of men aged 15-49 were smokers. The State Statistical Committee (SSC) data from 2009 reported 17.1% prevalence of smoking among population above 15 years of age, which is less than the findings of the present survey. NCD survey also confirms SSC data on very low prevalence of smoking among women. However, all comparisons with DHS and SSC data need to be interpreted with caution due to different age range of study populations.

4.2.2. Alcohol consumption

The prevalence of current alcohol drinking (in the past 30 days) was substantially higher among men (29.0%) than among women (1.9%). Additional 18.4% of men were not current drinkers but reportedly drank in the past 12 months. The frequency of drinking in vast majority of those men ranged from 1-3 times a month (46.2%) to less than a month (40.4%). Only 3.9% of current male drinkers drank on four or more days in the past 7 days, around one in every four drank five or more drinks on any day, and less than 5% had 20 or more drinks in past week. Men in rural areas tended to consume more alcohol per drinking occasion. Overall, these findings indicate that anti-alcohol strategies should primarily target specific groups among male population.

DHS from 2006 reported that 47.6% of men 25-44 years of age were current drinkers, whereas the NCD survey found that only 32.2% of the same aged men reported drinking in the past 30 days prior to survey. As for the frequency of drinking, according to DHS and NCD, alcohol from 1-3 days a month to less than once a month was consumed by 86.3% and 90.1% of male respondents of 25-44 years of age respectively. These findings indicate to some reduction in prevalence of current drinking in recent years.

Two-thirds (65.5%) of the population (38.9% of men and 90.9% of women) are lifetime abstainers, and 10.6% have abstained in the past 12 months (15.6% men and 5.8% women); this compares with the global findings of 45% of the population (35% men and 55% women) being lifetime abstainers and 13.1% of the population (13.8% men and 12.5% women) not having drunk alcohol in the past 12 months.⁴ For the WHO European Region, lifetime abstention was 18.9% (men 12.6% and women 24.6%) and past-year abstainers were 31.2% (men 23.5% and women 38.1%).

WHO estimates total adult per capita consumption (APC) of alcohol as 6.13 liters globally (of which 28.7% is unrecorded) and as 12.18 liters for the WHO European Region (of which 21.9% are unrecorded); its estimates for Azerbaijan are 10.6 liters total APC of which 31% is unrecorded.⁵ It is often the case that per drinker consumption is high in countries with moderate APC combined with high abstention rates.

11.5% of drinkers worldwide and 11.0% of drinkers in the WHO European Region (16.8% men and 4.6% women) have weekly heavy episodic drinking occasions (at least 60 grams or more of

pure alcohol on at least one occasion in the past seven days). This survey indicates that amongst the current drinkers, 24.3% of men and 4.8% women had an episode of heavy drinking on any day in the previous week; the average number of drinks consumed at one occasion during the past 30 days was 3 drinks (men 3, women 1), and the mean maximum number of drinks consumed on one occasion in the past 30 days was 5 drinks (men 6, women 2). Heavy episodic drinking is an important indicator for acute consequences of alcohol use such as injuries. The 2006 DHS survey had found alcohol consumption significantly associated with domestic violence. The links between alcohol consumption and injury prevention have already been made⁶ and this new data on patterns of drinking can contribute to that agenda.

4.2.3. Nutrition

Azerbaijan has moderate climate favorable for agriculture. Fresh fruits and vegetables, both locally produced and imported, are available all year long. However, there is a great variability in prices between harvest and non-harvest seasons, which are summer-fall and winter-spring, respectively. Price seasonality affects affordability of fruits and vegetables, which may explain their low consumption reported by the respondents, since the survey was conducted in winter. This notion is supported by a big discrepancy between high percentage of respondents, who indicated that high consumption of fruits and vegetables constituted healthy diet (74%), and low percentage of those, who actually reported their high consumption (21%). Also, rural residents who are generally poorer consumed less amount of fruits and vegetables than urban residents.

In addition to low consumption of fruits and vegetables, the majority of households used saturated oil such as butter and ghee for cooking, which also contributes to unhealthy dietary practices.

28% of respondents reported consuming more than one teaspoon of salt per day, and 19% of respondents consumed pickled foods daily. There is a dose-response and direct relationship between salt and blood pressure, and the survey found that more than three-quarters (78.6%) of those with hypertension received advice to reduce salt intake. The evidence is that decreasing salt intake to 5 grams per day would significantly reduce overall stroke rates and cardiovascular disease rates, and there is additional benefit in reducing salt intake even if the diet is a 'healthy' one.⁷

4.2.4. Physical activity

Approximately twice as many women as men were classified as having low level of physical activity (28.8% and 15.3% respectively). Accordingly, men reported to spent more time on physical activity than women (175 and 115 minutes on average). Significantly higher proportion of women had no transport-related activity (walking or cycling) (29.0% and 14.3% respectively), which may be explained by lower employment level among women that reduces the need in walking to work and back. Almost half of the respondents did not have any recreation-related activity, including those in the youngest age group. Urban residents were generally less physically active than rural residents. These findings indicate to the need for increasing opportunity for adult population to engage in sports and other leisure activities. This suggests that in addition to strategies to promote sport, promotion of enabling environments such as through transport and urban planning would be useful, with action linked to that to make roads safer.⁸

4.2.5. Overweight and obesity

Mean body mass index was 27.8 kg/m² for women and 26.5 kg/m² for men, not dissimilar to WHO estimates.⁹ Approximately 58% of the respondents had above normal weight defined as body mass index (BMI) equal or greater than 25. There was no significant difference in the share of such respondents between sexes. However, the prevalence of obesity was substantially higher among women than men (27.2% and 16.4% respectively). Whereas obesity was equally prevalent among rural and urban residents, significantly smaller share of rural residents was overweight and significantly greater share of them had normal weight in comparison to urban residents.

The obesity levels were higher than had been found in a previous survey five years before (18% of females and 5% of men aged 15-49 years).¹⁰ These findings emphasize the need in improving dietary practices and increasing the level of physical activity to reduce the prevalence of excessive body weight in population.

4.3. Combined risk factors

Finally, the survey revealed that more than 96% of the respondents had at least one risk factor for NCDs. Almost one in every two men had three or more such factors. Rural population was found under greater risk than urban population. Especially alarming is the fact that even the youngest

age group almost nine out of 10 respondents were not free of risk factors. These findings indicate that if no actions are taken the epidemic on NCDs will continue to grow in the future.

4.4. Limitations and strengths

Findings of this survey, on one hand, were subject to limitations seen in any interview surveys, including recall bias, under-reporting and unwillingness to report, and interviewers' bias. For instance, questions on alcohol and cigarette consumption were likely to induce underreporting from some respondents, whereas the estimation of the amount of alcohol, cigarettes, and fruits and vegetables might be under or over reporting. In addition, the fact that the proportion of men enrolled in the survey was lower than that of the parent population (45.7% in the sample vs 49.6% in the general population) suggested that interviewers came across more eligible women than men.

On the other hand, the use of the WHO standardized survey protocol, thorough training of data collectors, and the close supervision of the survey team members during data collection, were undertaken in order to minimize biases and enhance the survey output quality. Furthermore, this survey used a sampling design that allowed deriving representative estimates for the whole country.

5. Conclusions and recommendations

The survey revealed that almost every adult respondent has at least one risk factor and almost a half has a combination of 3-5 factors, which puts them under a great risk of developing NCD. Moreover, substantial share of the respondents already had hypertension or diabetes, which are among the major contributors to national mortality. High prevalence of the risk factors among young adults indicates that an epidemic of NCD will only grow in the future. The findings emphasize the need for development of a comprehensive and integrated strategy for prevention and control of NCD. The strategy should address the following four main goals:

1. To develop and strengthen the institutional management and implementation structure for noncommunicable disease. This will require establishment of a special unit at the Ministry of Health that will be responsible for formulation of national NCD-related policies as well as for coordination of efforts of other stakeholders, both public and private, in their implementation.
2. To develop surveillance system for NCD risk factors and select diseases to measure changes over time and to evaluate effectiveness of NCD prevention and control programs.
3. To stall the epidemic of NCD through the population reduction in the main risk factors of smoking, poor diet, physical inactivity and harmful alcohol use and the aggressive management of high risk individuals.
4. To strengthen and equip health delivery systems to provide affordable, equitable and quality management of noncommunicable diseases to all population.

The development and endorsement of the strategy should be followed by development of a National NCD action plan that will define priorities, resources, time frame and responsible bodies for the implementation of various components of the NCD strategy.

Finally, it is important to disseminate the results of the NCD survey to all stakeholders and the public through all channels of mass media in order to raise awareness on the threat of NCD and facilitate prompt actions on the recommendations set forth in this report.

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