Republic of Rwanda
Ministry of Health

Rwanda Biomedical Centre
Healthy People, Wealthy Nation

# PREVALENCE OF NONCOMMUNICABLE DISEASE RISK FACTORS IN THE REPUBLIC OF RWANDA

## Findings from the 2022 Population-based National Survey

# STEPS

## PREVALENCE OF NONCOMMUNICABLE DISEASE RISK FACTORS

## THE REPUBLIC OF RWANDA _ 2022

**Publication Details:**

Published by: Non-Communicable Diseases Division, Rwanda Biomedical Centre, Ministry of Health, Rwanda

**With the technical and financial support from:**

World Health Organization, Enabel and University of Rwanda

**Publication date: June 2023**

# Contents

Republic of Rwanda

# Foreword

Non-communicable diseases (NCDs) are the leading causes of death worldwide. According to the World Health Organization (WHO), NCDs are responsible for 71% of all deaths globally, with around 85% of premature deaths from NCDs occurring in low- and middle- income countries (LMICs).

Like other developing countries, Rwanda is experiencing an epidemiological transition in its disease burden from infectious to non-communicable conditions, resulting in a double burden of disease. Non-communicable diseases are a major public health concern with significant.
social and economic implications in terms of health care-needs, loss of productivity and premature death. They constitute a serious setback to our attainment of social, health and economic targets if no proper interventions are put in place.

As a way of assessing the prevalence of NCDs risk factors in the country, this second national NCDs risk factor survey using the WHO STEPwise Approach (STEPS) was carried out to assess the status and trends of major NCDs risk factors in Rwanda. The report provides the very essential information on NCDs risk factors, injuries and oral health among adults aged 18-69 years, which will serve as an evidence base to strengthen NCDs prevention and control initiatives in the country. It will also serve as an important reference source for planners, Policymakers, public health professionals and other stakeholders concerned with NCDs prevention and control in Rwanda. Findings of this survey will help to monitor and evaluate different NCDs prevention and control interventions in the country as well as a good baseline for different indicators included in the National NCDs strategy and costed action plan 2020-2025.

The Ministry of Health (MoH) is grateful to the World Health Organization for the technical and financial support. We are equally grateful for the generous funding from Enabel that allowed us to complete this important activity. The technical expertise given by the University of Rwanda, College of Medicine and Health Sciences, School of Public Health (UR-CMHS-SPH), NCDs Division in Rwanda Biomedical Centre, STEPS Survey Technical and Steering Committees, was key for this survey and the MoH is very much appreciative.

The STEPS results demonstrate the big challenge that NCDs present to our country, both the strengths and challenges of Rwanda's response to NCDs, injuries and oral health. In line with the multi-sectoral nature of the NCDs determinants, I call upon all Ministries and Institutions, Partners and Stakeholders to work closely with the MoH to embrace this report as a call to action and lend us their support towards halting and reversing the burden of NCDs in Rwanda.


**Prof. Claude Mambo MUVUNYI**
**Director General**
**Rwanda Biomedical Centre**

# Acknowledgments

The Rwanda Biomedical Center would like to acknowledge the efforts of the individuals and organizations that contributed to the success of this second WHO STEPwise Survey in Rwanda.

In the first place, we are very thankful to the men and women who generously agreed to participate in the survey for their time responding to all questions and providing samples for laboratory investigations. Our gratitude also goes to the Community Health Workers from selected study villages who voluntarily accepted to guide our enumerators to the selected households.

The technical and financial support from World Health Organization and Enabel in all phases of the survey is very much appreciated. We wish also to thank the STEPS investigation team, the survey technical and steering committee for their time, knowledge, and skills in writing the study protocol,
overseeing the implementation of the study as well as report writing and dissemination.

Special thanks go to the University of Rwanda, College of Medicine and Health Sciences, School of Public Health that dedicated a team of experienced researchers to lead the implementation of the study, especially hiring and training enumerators, collecting data, data cleaning, analysis and report writing. We highly appreciate the support from the Ministry of Local Government, the National Institute of Statistics of Rwanda, for their swift facilitation and collaboration that contributed to having a smooth data collection.

We owe the success of this survey to the sacrifice of the field team that collected data in the entire country surmounting numerous challenges and setbacks; their professionalism and dedication contributed to having quality data. Finally, though certainly not least, a deep acknowledgment is given to the Non-Communicable Diseases Division team in RBC and the Planning, Monitoring and Evaluation and Health Financing Department team in the Ministry of Health for their dedication and excellent coordination throughout the entire process of this study implementation.

# List of acronyms

| | |
|---|---|
| **BMI** | body mass index |
| **CHW** | community health worker |
| **CI** | confidence interval |
| **CVD** | cardiovascular disease |
| **DBP** | diastolic blood pressure |
| **DHS** | Demographic and Health Survey |
| **EA** | enumeration area |
| **HDL** | high-density lipoprotein |
| **IFG** | impaired fasting glycaemia |
| **MET** | metabolic equivalent |
| **MOH** | Ministry of Health |
| **n** | number of respondents |
| **NCD** | noncommunicable disease |
| **NISR** | National Institute of Statistics of Rwanda |
| **RBC** | Rwanda Biomedical Center |
| **RNEC** | Rwanda National Ethics Committee |
| **SBP** | systolic blood pressure |
| **STEPS** | WHO STEP-wise approach to surveillance |
| **UR-CMHS-SPH** | University of Rwanda College of Medicine and Health \Sciences School of Public Health |
| **WHO** | World Health Organization |
| **WHR** | waist–hip ratio |

# Executive summary

## Background

The Rwanda National STEPs survey 2022 is the second nationally representative survey to collect comprehensive information on risk factors for NCDs, injuries and oral health in adults aged 18-69 years. The study was conducted on a representative sample of 5,776 people randomly selected
across the country. The study aimed to assess the magnitude of risk factors of selected non- communicable diseases (NCDs) in the Rwandan population using the WHO Stepwise approach to NCDs risk factors surveillance.

The specific objectives of the study were:

- To assess the distribution of lifestyle factors such as physical inactivity, tobacco and alcohol use, and anthropometric measurements (e.g.: body mass index and central obesity) which may impact on the occurrence of diabetes, cardiovascular risk factors and injuries.
- To identify dietary practices which are risk factors for selected NCDs.
- To determine the prevalence of hypertension, diabetes, raised cholesterol, albuminuria, asthma and injuries.
- To provide reliable and up-to-date information on NCDs risk factors for planning and evaluating public health initiatives, and for identifying future demands for health services in managing and treating NCDs.

## Key findings

### STEP 1: Behavioral risk factors

The STEP 1 involved the data collection on socio-demographic (age, sex, marital status,
education, occupation and housing) and behavioral characteristics (tobacco use, alcohol consumption, diet, physical activity, history of raised blood pressure, history of diabetes, history of raised total cholesterol, history of cardiovascular diseases, lifestyle advice,
history of diabetes, cervical cancer screening, injury and oral health) of the study participants.

Seven percent of Rwandans currently consume some form of tobacco products with a significantly higher prevalence among men (10.4%) than women (3.7%). Additionally, 5.7% of Rwandans smoke tobacco on a daily basis with the mean number of manufactured cigarettes smoked per day of 2 sticks per smoker.

Overall, 48.1 percent of Rwandans currently drink alcohol, 61.9% for males and 34.3% for females. In both sexes, 3.4% of respondents had binged on alcohol in the past 30 days, with higher prevalence in males (4.5%) than females (2.2%). On the other hand, 22.8% of Rwandans are lifetime abstainers with the percentage of abstinence among women being almost twice that among men. Furthermore, 1 in 5 people abstained from alcohol in the past 12 months.

Fruits are consumed on average on 1.8 days a week and vegetables on 4.2 days a week among Rwandans. In addition, the results show that 89.4% of Rwandans are consuming less than five servings of vegetables and fruits per day, much lower than WHO recommendations of at least 5 servings of fruits and vegetables a day.

Almost one in ten (8.8%) of Rwandans always add salt always or often to their food before eating or as they are eating and a further 2.8% always or often consume processed food high in salt.

Overall, 4.6% of Rwandans do not engage in the WHO recommended amount of physical activity. It was found that 61.5% of total physical activity is work-related, 31.1% transport-related and 7.4% recreation-related (leisure time).

Nearly half (52.1%) of Rwandans have never been measured for raised blood pressure. Among those who reported to have been previously diagnosed with hypertension, only 26.2% were currently on medication prescribed by doctor or health worker. However, 11.4% consulted a traditional healer among those previously diagnosed and 8.6% are taking herbal or traditional remedies for raised blood pressure.
Overall, 88.7% of Rwandans had never been measured for raised blood sugar. Among those diagnosed with elevated blood sugar, less than half (43.1%) were currently taking medications for diabetes, 4% had consulted a traditional healer while 1.8 were taking herbal or traditional treatment for diabetes.

The vast majority of Rwandans (97.6%) have never been measured for cholesterol levels with only 11.9% of people who reported. to have been diagnosed with elevated cholesterol levels being on medications. On the other hand, 15.4% among those previously diagnosed with elevated cholesterol consulted a traditional healer and 3.3% are taking herbal or traditional treatments.

Only nine percent of women have ever been screened for cervical cancer. In the age group 30-49 years which is the recommended age for screening, 11.7% have ever been screened for cervical cancer.

### *Oral Health*

Overall, 57% of Rwandans have never received dental care or visited a dentist and only 11.5% have seen a dentist in the last 12 months. The history of pain or trouble with teeth or gums was reported by 92.8% of respondents as the main reason they visited a dentist in the past 12 months while less than 1% visited a dentist for routine check-up treatment. Sixty-seven of Rwandans clean their teeth at least once a day, the percentage falls to 19.3% for those cleaning their teeth at least twice a day, and toothpaste is the most used product to clean teeth (86% of those who clean their teeth).

### *Injury and Violence*

Thirty percent of drivers or passengers of motorcycles or motor-scooters do not always use protective helmets. In both sexes, 6.7% of respondents were involved in a road traffic crash during the past 12 months of which 43.9% were serious enough to necessitate medical attention. The study findings indicate that 10.3%

of all respondents got seriously injured in other accidents other than road traffic crashes such as falls (43%) and cuts (35.8%).

## STEP 2: Physical measurements

• Physical measurements that were collected for STEP 2 are height and weight, blood pressure, waist and hip circumference.

• The mean body mass index (BMI) for Rwandans is 22.4 kg/m2, with no significant variation between sexes. In addition, 18.6 % of Rwandans are overweight or obese, more in women (26%) than men (11.5%). Obesity was observed in 4.3% of respondents with a higher prevalence in females (7.4%) than in males (1.3%).

• The mean waist circumference for men and women is 77.5 cm and 80.5 cm respectively. The mean waist–hip for men is 0.9 and 0.8 for women. (The Waist–hip ratio (WHR) is an index used to identify individuals at increased risk of obesity related morbidity due to accumulation of abdominal fat. Women whose WHR is ≥0.85 and men with a WHR ≥0.9 are considered to be at increased risk of obesity-related morbidity).

## STEP 3: Biochemical measurements

• Biochemical measurements concerned testing for fasting blood glucose, blood cholesterol and urine creatinine and Sodium to estimate the sodium intake.

• The Mean fasting blood glucose, including those currently on medication for raised blood glucose was found to be 83.7 mg/dl. The proportion of Rwandans with raised fasting blood glucose or currently on medication for raised blood glucose (plasma venous value ≥ 126 mg/dl) was 2.9%.

• The Mean total blood cholesterol, including those currently on medication for raised cholesterol (mg/dl) is 120.4 mg/dl and 3% of respondents have raised total cholesterol (≥ 190 mg/dl or currently on medication for raised cholesterol).

• The estimated 24-hour sodium (Na) intake was 8.8 grams which is higher than recommended quantity by WHO (less than 5 grams of salt or 2 grams of sodium per person per day).

### *Cardiovascular diseases risk*

The survey results showed that 7.0% of Rwandans aged 40-69 years have a 10-year cardiovascular disease (CVD) risk ≥ 20% or have an existing CVD.
A 10-year CVD risk of ≥20% is defined according to age, sex, blood pressure, smoking status, total cholesterol, and diabetes status.

### *Combined NCDs Risk Factors*

An assessment of the risk posed by combined risk factors was also determined. The five common and major risk factors for NCDs including current daily smokers, overweight or obese (BMI>25kg/m2), raised blood pressure (SBP>140 and/or DBP>90 mmHg or currently on medication for raised BP), less than 5 servings of fruit and vegetables per day and low level of physical activity were used.

• Only 6% of Rwandans have none of the above Risk factors.
• Among the age group 18-44 years, 5.4% have three or more of the above risk factors.
• In the age group 45 to 69 years, 12.8% have three or more of the above risk factors while the percentage with three or more of the above risk factors among the age group 18-69 years is 7.1.

# > RWANDA STEPS SURVEY 2022 FACTSHEET

The STEPS survey of noncommunicable disease (NCDs) risk factors in Rwanda was carried out from November 2021 to January 2022. Rwanda carried out Step 1, Step 2, and Step 3.

Socio-demographic and behavioral information was collected in Step 1. Physical measurements such as height, weight and blood pressure were collected in Step 2. Biochemical measurements were collected to assess blood glucose and cholesterol levels in Step 3.

The survey was a population-based survey of adults aged 18-69. A multi-stage cluster sample design was used to produce representative data for that age range in Rwanda. A total of 5,776 adults participated in the survey. The overall response rate was 96.3%. A repeat survey is planned for 2026.

**Table 1: Rwanda STEPS Survey 2022 factsheet**

| Results for adults aged 18-69 years (incl. 95 CI) (Adjust if necessary) | Both Sexes | Males | Females |
|---|---|---|---|
| **Step 1: Tobacco Use** | | | |
| Percentage who currently smoke tobacco | 7.1 (6.2-7.9) | 10.4 (8.9-11.9) | 3.7 (3.0-4.4) |
| Percentage who currently smoke tobacco daily | 5.7 (4.9-6.4) | 8.2 (6.9-9.5) | 3.1 (2.5-3.8) |
| For those who smoke tobacco daily | | | |
| Average age started smoking (years) | 18.8 (18.0-19.6) | 18.6 (17.6-19.6) | 19.4 (. - .) |
| Percentage of daily smokers smoking manufactured cigarettes | 60.2 (54.4-65.9) | 74.9 (68.4-81.4) | 22.4 (9.9-34.9) |
| Mean number of manufactured cigarettes smoked per day (by smokers of manufactured cigarettes) | 2.4 (1.9-2.9) | 3.0 (2.4-3.6) | 1.0 (. - .) |
| **Step 1: Alcohol Consumption** | | | |
| Percentage who are lifetime abstainers | 22.8 (21.1-24.5) | 15.2 (12.9-17.5) | 30.3 (28.2-32.5) |
| Percentage who are past 12-month abstainers | 20.3 (18.7-21.8) | 15.3 (13.2-17.4) | 25.2 (23.2-27.2) |
| Percentage who currently drink (drank alcohol in the past 30 days) | 48.1 (46.1-50.0) | 61.9 (59.0-64.9) | 34.3 (32.1-36.4) |
| Percentage who engages in heavy episodic drinking (6 or more drinks on any occasion in the past 30 days) | 3.4 (2.7-4.1) | 4.5 (3.3-5.7) | 2.2 (1.5-3.0) |
| **Step 1: Diet** | | | |
| Mean number of days fruit consumed in a typical week | 1.8 (1.8-1.9) | 2.0 (1.8-2.1) | 1.7 (1.6-1.8) |
| Mean number of servings of fruit consumed on average per day | 0.7 (0.6-0.8) | 0.7 (0.7-0.8) | 0.7 (0.6-0.7) |
| Mean number of days vegetables consumed in a typical week | 4.2 (4.1-4.3) | 4.0 (3.9-4.1) | 4.5 (4.4-4.6) |
| Mean number of servings of vegetables consumed on average per day | 1.6 (1.5-1.7) | 1.5 (1.4-1.6) | 1.8 (1.7-1.9) |
| Percentage who ate less than 5 servings of fruit and/or vegetables on average per day | 89.4 (88.0-90.8) | 90.2 (88.3-92.1) | 88.6 (87.0-90.1) |
| Percentage who always or often add salt or salty sauce to their food before eating or as they are eating | 8.8 (7.6-10.0) | 12.0 (9.9-14.1) | 5.7 (4.5-6.8) |
| Percentage who always or often eat processed foods high in salt | 2.8 (2.0-3.6) | 2.3 (1.3-3.2) | 3.4 (2.4-4.4) |
| **Step 1: Physical Activity** | | | |
| Percentage with insufficient physical activity (defined as < 150 minutes of moderate-intensity activity per week, or equivalent) * | 4.6 (3.7-5.5) | 3.5 (2.3-4.7) | 5.6 (4.4-6.8) |
| Median time spent in physical activity on average per day (minutes) (Presented with inter-quartile range) | 334.3 (145.7-514.3) | 360.0 (161.4-531.4) | 321.4 (126.4-492.9) |
| Percentage not engaging in vigorous activity | 33.1 (31.0-35.2) | 22.8 (20.2-25.5) | 43.2 (40.5-46.0) |

| | | | |
|---|---|---|---|
| **Step 1: Cervical Cancer Screening** | | | |
| Percentage of women aged 30-49 years who have ever had a screening test for cervical cancer | | | 11.7 (9.8-13.6) |
| **Step 2: Physical Measurements** | | | |
| Mean body mass index - BMI (kg/m²) | 22.4 (22.3-22.5) | 21.6 (21.4-21.8) | 23.3 (23.1-23.4) |
| Percentage who are overweight (BMI ≥ 25 kg/m²) | 18.6 (17.1-20.1) | 11.5 (9.7-13.3) | 26.0 (23.9-28.1) |
| **Step 1: Tobacco Use** | | | |
| Percentage who are obese (BMI ≥ 30 kg/m²) | 4.3 (3.6-4.9) | 1.3 (0.8-1.8) | 7.4 (6.3-8.5) |
| Average waist circumference (cm) | | 77.5 (77.0-78.1) | 80.5 (80.0-81.0) |
| Mean systolic blood pressure - SBP (mmHg), including those currently on medication for raised BP | 120.7 (120.2-121.2) | 122.3 (121.7-123.0) | 119.0 (118.4-119.6) |
| Mean diastolic blood pressure - DBP (mmHg), including those currently on medication for raised BP | 79.2 (78.9-79.6) | 78.7 (78.2-79.3) | 79.7 (79.3-80.1) |
| Percentage with raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP) | 16.8 (15.6-18.0) | 15.7 (13.8-17.5) | 17.9 (16.4-19.4) |
| Percentage with raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP) who are not currently on medication for raised BP | 89.2 (87.1-91.3) | 94.5 (92.1-96.9) | 84.6 (81.3-88.0) |
| **Step 3: Biochemical Measurement** | | | |
| Mean fasting blood glucose, including those currently on medication for raised blood glucose [choose accordingly: mmol/L or mg/dl] | 83.7 (82.2-85.3) | 82.5 (81.1-83.9) | 84.9 (82.7-87.1) |
| Percentage with impaired fasting glycaemia as defined below (plas- ma venous value ≥110 mg/dl and <126 mg/dl) | 4.7 (3.8-5.5) | 4.3 (3.1-5.5) | 5.0 (3.9-6.0) |
| Percentage with raised fasting blood glucose or currently on medication for raised blood glucose (plasma venous value ≥ 126 mg/dl) | 2.9 (2.1-3.8) | 2.6 (1.4-3.8) | 3.3 (2.3-4.2) |
| Mean total blood cholesterol, including those currently on medication for raised cholesterol (mg/dl) | 120.4 (118.8-121.9) | 117.1 (114.6-119.7) | 123.6 (122.1-125.1) |
| Percentage with raised total cholesterol (≥ 190 mg/dl or currently on medication for raised cholesterol) | 3.0 (2.3-3.6) | 2.3 (1.3-3.3) | 3.6 (2.8-4.4) |
| Mean intake of salt per day (in grams) | 8.8 (8.7-8.9) | 9.0 (8.8-9.1) | 8.7 (8.6-8.8) |
| **Cardiovascular disease (CVD) risk** | | | |
| Percentage aged 40-69 years with a 10-year CVD risk ≥ 20%, or with existing CVD** | 7.0 (5.8-8.5) | 4.6 (3.2-6.6) | 9.1 (7.4-11.2) |
| **Summary of combined risk factors** | | | |
| • Current daily smokers<br>• Less than 5 servings of fruits & vegetables per day<br>• Insufficient physical activity<br>• Overweight (BMI ≥ 25 kg/m²)<br>• Raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP) | | | |
| Percentage with none of the above risk factors | 6.0 (5.0-7.0) | 6.3 (4.9-7.8) | 5.7 (4.5-6.9) |
| Percentage with three or more of the above risk factors, aged 18 to 44 years | 5.4 (4.5-6.2) | 4.2 (3.0-5.5) | 6.6 (5.3-7.8) |
| Percentage with three or more of the above risk factors, aged 45 to 69 years | 12.8 (11.0-14.7) | 10.5 (7.9-13.2) | 14.9 (12.5-17.3) |
| Percentage with three or more of the above risk factors, aged 18 to 69 years | 7.1 (6.3-7.9) | 5.6 (4.4-6.8) | 8.7 (7.5-9.8) |

* For complete definitions of insufficient physical activity, refer to the GPAQ Analysis Guide (http://www.who.int/chp/steps/GPAQ/en/ index.html) or to the WHO Global recommendations on physical activity for health (http://www.who.int/dietphysicalactivity/factsheet_ recommendations/en/index.html)
** A 10-year CVD risk of ≥30 is defined according to age, sex, blood pressure, smoking status (current smokers OR those who quit smoking less than 1 year before the assessment), total cholesterol, and diabetes (previously diagnosed OR a fasting plasma glucose concentration >7.0 mmol/l (126 mg/dl).

For additional information, please contact:
STEPS Survey Principal Investigator: **Dr. Francois UWINKINDI:** francois.uwinkindi@rbc.gov.rw

# Introduction

Rwanda is located on the borders of East and Central Africa. It is surrounded by Uganda in the North, Tanzania in the East, Democratic Republic of Congo in the West, and Burundi in the South. With a population that was estimated at 12.9 million people in 2021 on a land area of 26,338 square kilometers, Rwanda is one of the most densely populated countries in Africa.

For the last twenty years since 2000, Rwanda invested many efforts in the diseases control and prevention, with a special focus on infectious diseases. Notable achievements have been observed in the prevention and control of infectious diseases, but evidences in diseases global trends and experiences from the diseases control and preventions have convinced the Government of Rwanda that non-communicable diseases are increasingly becoming a national issue that required immediate attention. Since 2012, NCDs
have become a national priority, and the country has put in place different measures to implement the surveillance of risk factors for NCDs in the Rwandan population. This prioritization of NCDs prevention and control is highlighted in high level national policies and plans, namely the National Vision 2050, with a goal of reaching middle income status by 2035 and high-income status by 2050; and the National Strategy for Transformation (NST1) 2017-2024, where NCDs are considered as cross cutting issues that need a whole of government, whole of society and life course approach in order to achieve a sustainable response.

The Rwanda Health Sector has committed to extend the prevention, care, treatment, and rehabilitation for non-communicable diseases (NCDs) to all health facilities and the community; and to equip doctors, nurses and community health workers with the capacity to provide appropriate care to the aging population. This strategic commitment is based
on the evidence that the Rwanda epidemiological profile has started shifting from one dominated by communicable diseases to one where NCDs will be dominant, with concomitant demands on the health system for tackling such demands.

The health sector commitment on NCDs is further detailed in the 5-year National NCD Strategy and costed action plan, with a goal to reduce premature
mortality from NCDs by 25 percent, by 2025. The actions that need to be taken to achieve this goal are organized into four strategic objectives:

- Preventing NCDs through health promotion and reduction of risk factors

- Strengthening health systems for quality NCD early detection, care and treatment at all levels

- Strengthening disease surveillance and research, alongside robust monitoring and evaluation, for evidence-based intervention

- Strengthening intersectoral coordination, advocacy and resource mobilization for the prevention and control of NCDs. (NCD strategic plan 2020-2025)

Within this particular context, a constant check on trends of NCDs risk factors is very important for Rwanda to inform the decision making and allow policymakers to design interventions and programs that ensure the wellbeing of the population at
all ages. In this regard, the use of up-to-date data remains crucial. However, as Rwanda has not
yet managed to set up a comprehensive system which regularly tracks and consolidates data on the surveillance and management of NCDs, and periodic studies are still needed to assess the progress being made on NCDs surveillance and management. This is the reason why the Ministry of Health, in collaboration with several other stakeholders, has conducted the second study on risk factors for NCDs in Rwanda.

The first Rwanda Non-Communicable Diseases Risk factors study was conducted in 2012-2013. It provided the information on NCDs selected risk factors in Rwanda; and gave information against
which progress on national and global NCDs targets can be measured. It also provided evidence from which NCDs prevention and control policy and strategies can be developed.

The second Rwanda Non-Communicable Diseases Risk factors study was conducted in 2021-2022 and was aimed at assessing the magnitude of risk factors of selected non-communicable diseases

in the Rwandan population using the WHO Stepwise approach to NCD risk factor surveillance. Specifically, it sought:

• To assess the distribution of lifestyle factors (physical inactivity, tobacco and alcohol use, and anthropometric measurements (body mass index and central obesity) which may impact on cancers, diabetes, cardiovascular risk factors and injuries.

• To identify dietary practices that are risk fac- tors for selected NCDs.

• To determine the prevalence of raised blood pressure, raised blood glucose, raised choles- terol, salt consumption level and injuries.

• To provide reliable and up-to-date information on NCD risk factors for planning and evaluating public health initiatives, and for identifying future demands for health services in managing and treating NCDs.

Generated data will support and inform all efforts to (**1**) Strengthen the implementation of the national NCDs policy and strategy targeting high risk groups for NCDs, (**2**) Promote community education and awareness on practices to prevent NCD risk factors, and (**3**) Ensure rigorous application of evidence-based treatment guidelines used by the health care providers dealing with NCDs.

# 1 Study methodology

## 1.1 Study Design

The second Rwanda Non-Communicable Diseases Risk factors study was a population-based nationally representative cross-sectional survey. It was conducted between October 2021 and January 2022. The sampling frame was provided by the National Institute of Statistics Rwanda (NISR), based on the Demographic and Health Survey sample (DHS) 2019-2020.

## 1.2 Population study

The survey targeted males and females aged 18 to 69 years, who were living in Rwanda by the survey date. Eligible participants had to be able to speak Kinyarwanda, English or French. Males and females with mental disabilities, who did not have the capacity to understand the survey questions, and those with hearing and speech impairment that prevented the interviewer from oral administration of the study, were excluded from the study. During the eligibility phase, disabilities were determined. The survey acknowledges that people living with disabilities may have the risk of developing NCDs like the general population and that this was an important epidemiologic question. However, since this study was not designed to produce statistically stable estimates of NCDs in this sub-population, there was a belief this issue would be best addressed in a separate study.

## 1.3 Sample Size

The sample size for the NCDs Risk Factors Study was determined from the following standard cluster sample formula: The sample size was calculated by using the formula:

**$n= Z^2 P (1-P)/e^2$**, where:

- n= sample size,
- z= level of confidence,
- p= baseline levels of the indicators
- e= margin of error.

Given the estimated prevalence risk factors, p= 0.50, the 95% Confidence Interval (z= 1.96), the margin of Error set at 0.05, the estimated sample size was:
$n= 1.96^2 \times 0.5(1-0.5)/0.05^2=$ **384.16**

Adjusting for:
- Design effect for complex sample design = 1.50
(multiply)
- Age-sex estimates 18-69 age range (8 year- intervals)
= 8 (multiply)

• The estimated required sample size was therefore adjusted for design effect and age-sex reporting groups:
N=**384.16* 1.5*8= 4,610**

• Assuming a conservative non-response rate of 20% for STEPs surveys, the final sample size was therefore adjusted upward to:
**4610 /0.8 = 5,762**

Assuming that the non-response rate in the urban areas would be a double of the overall non- response rate of 0.20 percent, the sample of size in urban areas was increased by additional 0.20 urban non-response rate) * 0.2 (estimated urban population in Rwandan) = 0.4%: A total of 230 additional respondents (5762*0.4) were planned to be interviewed in urban areas. Additional urban 15 EAs (230/15) were also be added on.
The final sample for the second STEPs in Rwanda was, therefore, 6000 people. The study was be conducted in 400 EAs.

## 1.4 Sampling Strategy

This survey used a multi-stage cluster sampling strategy: in the first stage of sampling, a total of 400 enumeration areas (EAs), the primary sampling unit based on geographical subdivisions determined by NISR, was selected using probability proportional to size (PPS) from the list of 14,837 urban and rural natural villages that was provided by NISR. The sample frame file contained the administrative belongings for each village and the village population. A total of 280 EAs were allocated to rural areas, and a total of 120 EA were allocated to urban areas. In the second stage, a fixed number of 15 households were selected using random systematic sampling. This was done prior to data collection to avoid the selection bias. The sampling of household was technically supported by the NISR. They used the DHS 2019-2020 sampling frame. In the third stage, one eligible respondent was randomly selected from the list of all eligible respondents (females or males) aged 18-69 years in each household.

The list of 15 selected households per each EA was given to team leaders of data collectors. Upon entering a selected household, interviewers had to confirm that they were in the right sampled household by asking the first name of the head of household and comparing this to the list of sampled households. Once the interview team had correctly identified the sampled household, they asked to speak with the head of household, or the person representing the head of household to introduce the study and confirm that there is one or more eligible respondent living in the household.

When there was more than one eligible participant, the eligible participants in a household were listed into the tablet, STEPS app then randomly selected the participant to be interviewed. If the selected respondent was not available after three attempts or refused to participate, the household was skipped regardless of whether another eligible respondent existed in the household. The selected household participant was not replaced.

## 1.5 Data collection

### 1.5.1 Questionnaire Development and customization

The WHO Instruments for a Stepwise approach for NCD risk factor surveillance was adapted and used by the Rwanda. The Stepwise approach for NCD risk factor surveillance is a sequential three-step process, starting with gathering information on key risk factors with an interview-based questionnaire (STEP 1). STEP 2 tops up the questionnaire with physical measurements such as blood pressure; waist circumference, height, and weight to generate the Body Mass Index. STEP 3 includes biochemical measurements: fasting blood glucose, blood lipids, and spot urine. At each step, there are core and optional modules available (WHO). As a consequence of this incremental implementation of the STEPS approach's cost and complexity increase from STEP 1 to STEP 3(**4**).

#### *Step 1: Questionnaire-based assessment*

The study questionnaire was administered to all consenting study participants. Contents of the questionnaire are highlighted in Table 1. The questionnaire was translated from English to Kinyarwanda and French and back translated from Kinyarwanda and French to English.

#### *Step 2: Physical measurements*

The physical assessment included blood pressure (BP), height, weight, waist and hip circumference measurements.

- **Blood pressure:** Blood pressure measurements were taken using a battery powered digital blood pressure machine (e.g., OMRON BP Monitor). During day 1 encounter with study participants, three readings were taken 3 minutes apart after the participant has rested 15 minutes. All three BP readings were recorded into the tablet.

- **Heart rates:** Heart rates were recorded simultaneously with the blood pressure measurements using the digital automatic blood pressure monitor. Similarly, the average of the last two of the three measurements was recorded.

- **Waist circumference:** The waist circumference was measured using a tape- measure in centimeters. Measurement was made in the mid- axillary line midway between the last rib and the superior iliac crest. Measurements were made to the nearest 0.1 cm.

- **Hip circumference:** Hip measurement was be taken using a tape-measure placed horizontally at the point of maximum circumference over the buttocks. Measurements will be taken to the nearest 0.1 cm.

- **Height:** The Study participant height was measured with ultrasonic height measuring devices. Height was recorded in centimeters.

- **Weight:** Weight measurements were taken on a pre-calibrated weighing scale. Participants were asked to stand still, face forward, and place arms on the sides of the body. Weight was recorded in kilograms.

#### *Step 3: Biochemical assessment*

The primary intent of the Rwanda NCD risk factor study was to determine the magnitude of the population at risk of the selected non- communicable disease. Therefore, the intent was not to diagnose disease. It was similar to a screening program. Those individuals presenting the risk factor were referred to the appropriate nearest hospital for in depth check and care. The sensitivity and specificity of the biochemical tests were therefore concerns for the study team in order to obtain reliable and accurate data from the Study participants.

On the first day of the study after STEP 1 and part of STEP 2, participants were asked to fast overnight. i.e., study participants were asked not to consume any food except for clear water after taking super/ dinner of that day until the study team came again in the morning of the following day (day 2). On the second day, the study team checked for whose participants who fasted and perform finger-prick blood samples. Total cholesterol, HDLc, and fasting blood glucose were measured using Cardio Check PA (Glucose, Cholesterol, and HDL). This finger- prick measurement device was recommended by WHO and is used in many other countries for the STEPS Study.

For a better management of STEP 3 (Biochemical assessment) the following steps were undertaken:

• Participants were provided with a small container (50 ml), a plastic bag to carry the sample and instructions for the urine collection that was done in the evening before fasting for the blood measurements;

• Participants were given a schedule and ap- pointment for the blood measurements;

• They were provided with a copy of the ap- pointment card and the fasting instructions;

• They were reminded to bring the appointment card and the urine sample to the appointment the next day.

The urine samples collected from participants during STEP 3 were sent to the NRL for sodium and creatinine measurements. This standardized population-based study promoted by the WHO and adopted by many countries allows comparison across countries. STEPS approach aims at providing countries with the data on the prevalence of chronic diseases, distribution of risk factors among the population groups, and trends of chronic diseases over time. Data collected from this Study paves the way for chronic disease surveillance system initiation in low and middle-income countries. The Rwanda NCD risk factor assessment opted for the STEP 3 to gather the required data that can inform NCDs program.

### *NCDs risk factors questionnaire, tools, and data collection*

The generic questionnaire developed by WHO was adapted to the Rwanda context. The questionnaire is built around three major elements aligned with the STEP approach including the behavioral risk factors, physical measurements, and biochemical measurements. All the core items in the WHO STEP tool will be applied. Additionally, selected expanded items of the STEP tool complemented
the questionnaire. The table below presents the key elements in the questionnaire used by the 2021- 2022 Rwanda STEPs survey.

### 1.5.2 Data collectors

Interviewers were males and females who were Rwandan and could fluently speak Kinyarwanda, English or French, with a background of nursing, clinical medicine, community health, or biomedical laboratory sciences, with experience on complex public health or clinical studies. Candidates with high performance from the training were recruited as team leaders. The interviewers and supervisors were selected by the UR-CMHS-SPH with guidance from the steering committee as requested. We selected 15 teams of three people (1 team leader, who also collected data, and 2 data collectors).

Team leaders were responsible for providing direct supervision of the overall study implementation in the field. In addition to collection data from a few of households, team leaders were responsible for firstly, contacting the local administration for authorization to enter the study area, getting in with community health workers and assigning households to enumerators, using the EAs list and households list provided by the core team prior to field visit. During data collection, the team leaders were responsible for ensuring that interviewers have followed appropriate procedures for obtaining consent and providing information to all respondent and direct referrals for those who need them (those with abnormal lab tests). Team leaders supervised teams for data collection.

As for interviewers, they were responsible for collecting data on all three STEPs of the Study: conducting interviews with respondents (Step 1), and taking respondents physical and biochemical measurements (STEP 1& 2).

Training sessions was held for approximately five days for the team leaders and enumerators. Sessions were conducted by experts from MoH/RBC, UR-CMHS-SPH, and WHO.
The training sessions covered the following topics:
• Background on the purpose of the study and on data collection and design;
• A participatory review of the questionnaire and practice interview techniques in class, including role playing;
• Enumeration procedures;
• Sampling procedures and assignment of sampling areas;
• The procedures for and importance of maintaining confidentiality;
• Sensitivity toward study subjects;

• The importance of securing and maintaining privacy during the interview;
• Identify and refer respondents with raised blood pressure or other risks factors requiring medical attention to the nearest peripheral health unit (PHU) or hospital.
• Discussions about interviewers' attitudes and beliefs towards NCDs Risk Factors,
• Learn interviewing techniques like asking questions in a non-judgmental manner, seek clarification, probe, when necessary, provide feedback, record information, edit and check the Tablets for its completeness;
•Take physical measurements in accordance with the laid down protocols;
• Collect blood samples (lab technicians)
• Quality assurance and quality control of data;
• Informed consent and assent and other human subjects research protection
• Electronic data collection procedures; and
• Rwandan legal and policy framework, as it pertains to research
• Conduct interviews in the field and be able to administer the questionnaire appropriately.

### 1.5.3 Sample transportation

Urine samples were analyzed in the National Reference Laboratory. The transportation of sample to the laboratory was coordinated by the UR-CMHS-SPH in close collaboration with the National Reference Laboratory (NRL) where samples were analyzed. The UR-CMHS-SPH availed cars and other necessary equipment for the samples' shipment.
Stickers with bar codes (unique identifiers on
the sample containers, STEPs 1 and 2 of the participants in the electronic database) were used to link samples with the rest of the records per participants.

### 1.5.4 Electronic data collection

Given the complexity of the skip patterns and logic sequencing, it has been recommended to use Tablets as electronic data collection would eliminate routing error, reduce training on skip pattern sequencing, and eliminate the need for data entry and thus data entry errors. All data collection tools (questionnaires, consent forms, etc.) were translated to Kinyarwanda and French. During training and pilot testing, the translation was tested for cultural competence and applicability to the target age-group and adjusted as necessary prior to data collection.

## 1.6 Ethical considerations

The Rwanda NCD risk factors study protocol involved human subjects as human fluid was collected as well as physical measurements. The study's protocol was reviewed and approved by the Rwanda National Ethics Committee (RNEC), with the approval Ref number: 553/RNEC/2021 of May 18, 2021. Study materials, including the questionnaire and consents, were translated from English into Kinyarwanda and French, three official languages in Rwanda.

### *Confidentiality*

Prior to administering the questionnaire and collecting any lab test sample, a formal informed written consent from the interviewee was requested. Two types of consent form tailored to the STEP tool level (e.g., one for STEP 1 and 2; One for STEP 3) were provided and administered. Only those study participants who accepted to go for step 3 filled out the step 3 consent form. Names, age and sex were collected during the interview process but names were not displayed in the final data for analysis and report as participant ID numbers were used instead of names. Only answers to the questions and test results were be analyzed. As an additional precaution to ensure confidentiality and trust, team composition and assignments were such that team members would not be assigned to administer the study in a community where they are likely to know or be known by any of the respondents.

### *Compensation of study participants*

Study participants diagnosed with NCD symptoms were directed to the nearest health care facility qualified to address the issue with clear instructions to ensure the follow up. There was no monetary or incentives of any kind during the survey.

### *Feedback to participants*

All study participants received immediate feedback on their biochemical and physical measurements. The study teams filled out the feedback form and gave it to the study participants. The data provided through the feedback constituted point estimates for the study participant who could use it as a reference for future consultation at the health facility.

### *Referral system of study participants with abnormal results*

All study participants who presented with abnormal test results or sub-standard physical measurements were referred to the nearest health facility that can care for them. The Rwanda referral system is built on three layers that start at the community level with the community health workers (CHW). In fact, CHWs refer patients to health centers who in turn refer them to the district hospital if they fail to provide the appropriate care and treatment. The national reference hospitals are the highest level of referral for tertiary care complementing the gaps from the district hospitals.
During the STEP study, the community health workers continued to play their role as entry point for referral. A community health worker identified in the village where the study is conducted was part of the study team. He/She was there to direct the study team to the selected households.

### *Ownership and access to data*

Data collected for this evaluation belongs to the Govern- ment of Rwanda (GoR) and will be made available for all stakeholders.

## 1.7 Data Management

The entire data collection process was done electronically using the eSTEPS. It used electronic devices for STEPS data collection in connection with the STEPS online data management platform. The eSTEPS provides the following benefits: Immediate error-checking during data collection (e.g., inadvertently skipped questions or out-of- range responses); significantly reduced data entry errors; marked reduction of materials to be carried by data collectors (one tablet vs. Hundreds of paper instruments); and no additional data entry needed. The eSTEPS also allows for remote data submission using Wi-Fi or mobile data connections. This not only ensures greater data security but allows for closer monitoring of field work by the local STEPS Coordinating Committee.

# 2 Results

## 2.1 Demographic and response information

A number of demographic indicators were analyzed, such as age, sex, education, employment of the respondents and household characteristics like family size, wealth index (Ubudehe) socioeconomic category, etc. The Step 1 and 2 consisted of lifestyle and physical measurements. In total, 5,776 participants aged 18– 69 years were interviewed from all 30 districts of Rwanda (i.e., a response rate of 96.3%, n=6000).

Step 3 consisted in biochemical measurement that was done the next day to step 1&2. Out of 5,776 participants from step 1&2, 5,512 participated in Step 3 (i.e., 95.4% from step 1-2 and overall response rate of 92%).

Of the 5,676 respondents, 2,130 (37.5%) were men and 3546 (62.5%) were women (Table 2). In terms of age groups, 1,310 individuals were aged 18–29 years, 2,383 were aged 30–44 years, 1,293 were aged 45–59 years and 690 were aged 60–69 years (**Table 2**).

**Table 2: Distribution of study population, by age and sex**

| Age group and sex of respondents | | | | | | |
|---|---|---|---|---|---|---|
| Age Group (years) | Men | | Women | | Both Sexes | |
| | n | % | n | % | n | % |
| 18-29 | 497 | 23.3 | 813 | 22.9 | 1310 | 23.1 |
| 30-44 | 936 | 43.9 | 1447 | 40.8 | 2383 | 42.0 |
| 45-59 | 468 | 22.0 | 825 | 23.3 | 1293 | 22.8 |
| 60-69 | 229 | 10.8 | 461 | 13.0 | 690 | 12.2 |
| **18-69** | **2130** | **100.0** | **3546** | **100.0** | **5676** | **100.0** |
| **Age group and sex of respondents** | | | | | | |
| Age Group (years) | Men | | Women | | Both Sexes | |
| | n | % | n | % | n | % |
| 18-29 | 497 | 37.9 | 813 | 62.1 | 1310 | 100.0 |
| 30-44 | 936 | 39.3 | 1447 | 60.7 | 2383 | 100.0 |
| 45-59 | 468 | 36.2 | 825 | 63.8 | 1293 | 100.0 |
| 60-69 | 229 | 33.2 | 461 | 66.8 | 690 | 100.0 |
| **18-69** | **2130** | **37.5** | **3546** | **62.5** | **5676** | **100.0** |

Survey results showed that about 29.2% of the population had no formal schooling, with a higher proportion among women. Additionally, 6.8% had less than primary education-with uneven gender distribution, while 49.5% had completed primary school-with a slightly higher proportion among men. Moreover, 3.6% had completed technical/ vocational training-with a higher proportion among men; 8.7% had completed secondary school-with a higher distribution among women; and 2.2% had completed college/ university-with a higher distribution among men (**Annex 1**).

Comparison of education level by age groups denoted that the proportion of respondents who had completed secondary school was higher in the youngest group (18-29 years) and lower in the older group (60-69 years). Respondents aged 30-44 years had the highest proportion with college/university completed and those aged 60-69 years had the lowest (**Table 3**).

**Table 3: Distribution of the highest level of education, both sexes,by age**

| Highest level of education | | | | | | | |
|---|---|---|---|---|---|---|---|
| Age Group (years) | Both Sexes | | | | | | |
| | n | % No formal schooling | % Less than primary school | % Primaryschool completed | % Technical/ vocational completed | % Secondaryschool completed | % College/University completed |
| 18-29 | 1309 | 11.8 | 6.5 | 56.9 | 4.4 | 18.6 | 1.8 |
| 30-44 | 2362 | 28.0 | 8.1 | 50.9 | 2.5 | 7.6 | 2.9 |
| 45-59 | 1290 | 34.7 | 5.4 | 48.8 | 5.0 | 3.9 | 2.2 |
| 60-69 | 685 | 56.4 | 5.5 | 31.5 | 3.5 | 2.2 | 0.9 |
| **18-69** | **5646** | **29.2** | **6.8** | **49.5** | **3.6** | **8.7** | **2.2** |

Among the survey respondents, majority were self-employed (70.7%). Only 2.1% were government employees, 12.4% were not government employees and 14.9% were unpaid (students, homemakers, retired, and unemployed) (**Table 4**). In regard to gender, there was a higher proportion of non-government employees in men and a higher proportion of unpaid in women (**Annex 2**).

**Table 4: Distribution of employment status, both sexes, by age**

| Employment status | | | | | |
|---|---|---|---|---|---|
| Age Group (years) | Both Sexes | | | | |
| | N | % Governmentemployee | % Non- governmentemployee | % Self- employed | % Unpaid |
| 18-29 | 1310 | 2.0 | 13.7 | 52.5 | 31.8 |
| 30-44 | 2383 | 2.0 | 14.9 | 75.6 | 7.5 |
| 45-59 | 1293 | 2.9 | 10.1 | 79.2 | 7.9 |
| 60-69 | 690 | 1.0 | 5.7 | 72.0 | 21.3 |
| **18-69** | **5676** | **2.1** | **12.4** | **70.7** | **14.9** |

Out of the 14.9% who were not paid (n=571), 67.6% were unemployed and the majority (47.0%) was able to work -, with a higher proportion in women (49.6%) (Annex 3). The other categories of unpaid work included students (22.0%)-among which men were more represented (33.2%) (Annex 3). Comparison of the age groups showed a higher proportion of people who could not work in the oldest group (70.1%), while 77.1% of those who could work were aged 30-44 years. Most of the students were aged 18-29 years (**Table 5**)

**Table 5: Unpaid work and unemployment, both sexes, by age group**

| Unpaid work and unemployed | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Both Sexes | | | | | | |
| Age Group (years) | n | % Non-paid | % Student | % Home-maker | % Retired | Unemployed | |
| | | | | | | % Able to work | % Not ableto work |
| 18-29 | 417 | 1.2 | 43.6 | 6.0 | 0.0 | 46.8 | 2.4 |
| 30-44 | 179 | 4.5 | 1.7 | 6.1 | 0.6 | 77.1 | 10.1 |
| 45-59 | 102 | 6.9 | 0.0 | 0.0 | 2.9 | 48.0 | 42.2 |
| 60-69 | 147 | 1.4 | 0.7 | 0.0 | 17.7 | 10.2 | 70.1 |
| **18-69** | **845** | **2.6** | **22.0** | **4.3** | **3.6** | **47.0** | **20.6** |

## 2.1 STEP 1: Behavioral risk factors

### 2.1.1 Tobacco use

**Box 1:** Tobacco use

- In Rwanda 7.1% of the population were current smokers. This shows a decrease in the prevalence of smoking since the last STEPS survey conducted in 2012-13, which indicated that 12.3 % of respondents were current smokers. The proportion of male smokers (10.4%) was higher than the females (3.7%); and he study found a gradual increase in the proportion of smokers with the age for both the male and female respondents.
- Eight out of 10 smokers (80.4%) were daily smokers and the share of daily smokers among men (84.7%) was higher than among women (78.8%).
- Manufactured cigarettes were the most commonly used tobacco product; used by 60.2% of respondents; and male daily smokers smoked more cigarettes (3.0 cigarettes) than females (1.0 cigarette).
- One in three individuals (32.3%) were exposed to second-hand smoke at home and one in three in their workplace (30.0%), with more men (34.2%) exposed to second-hand smoke in their workplace than women (26.5%); which increases the risk of NCDs among the exposed individuals.

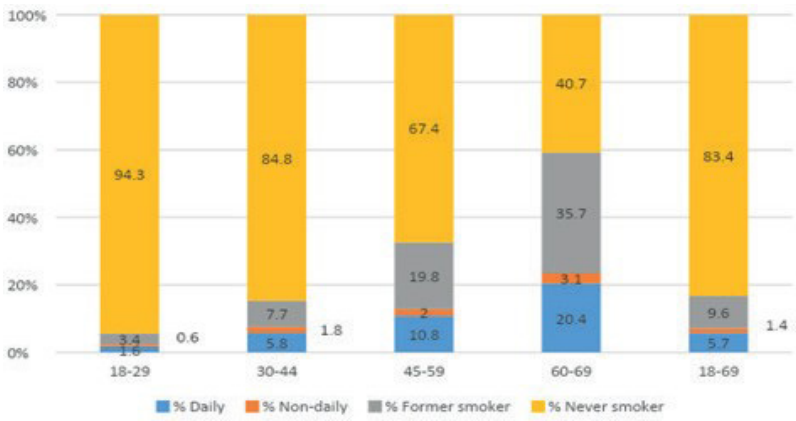
The survey respondents were asked questions about their current smoking status, previous smoking experience, the age they started smoking, duration of smoking, the quantity of tobacco smoked daily, use of smokeless tobacco, types of tobacco products used, frequency of daily cigarette smoking, tobacco cessation, and duration of exposure to second-hand smoke. The percentage of current smokers (daily and non-daily smokers) of all tobacco products among all respondents was 7.1% (95% CI: 6.2-7.9). There were more male smokers (10.4%) among the respondents than female (3.7%). The study found a gradual increase in the proportion of smokers with age for both male and female respondents. There was a statistically significant difference in prevalence of smoking between men and women: 10.4% (95%CI: 8.9-11.9) and 3.7% (95%CI: 3.0-4.4), respectively (**Table 6**).

**Table 6: Percentage of current smokers, by age and sex**

| Percentage of current smokers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % Current smoker | 95% CI | n | % Currentsmoker | 95% CI | n | % Current smoker | 95% CI |
| 18-29 | 497 | 3.4 | 1.9-5.0 | 813 | 1.0 | 0.0-1.9 | 1310 | 2.2 | 1.3-3.1 |
| 30-44 | 936 | 12.5 | 10.2-14.8 | 1447 | 2.6 | 1.8-3.5 | 2383 | 7.5 | 6.2-8.9 |
| 45-59 | 468 | 17.4 | 13.6-21.1 | 825 | 8.8 | 6.5-11.2 | 1293 | 12.8 | 10.6-15.0 |
| 60-69 | 229 | 34.0 | 26.9-41.1 | 461 | 13.1 | 9.8-16.4 | 690 | 23.6 | 19.4-27.8 |
| **18-69** | **2130** | **10.4** | **8.9-11.9** | **3546** | **3.7** | **3.0-4.4** | **5676** | **7.1** | **6.2-7.9** |

The proportion of current daily and non-daily smokers was higher in older age groups of the study population (45–69) (**Figure 1**).

**Fig 1:** Smoking status, by age group




Among all current smokers (n=506), 80.4% smoked daily (Table 8), higher among men was 84.7%, than among women (78.8%) (**Table 7**).

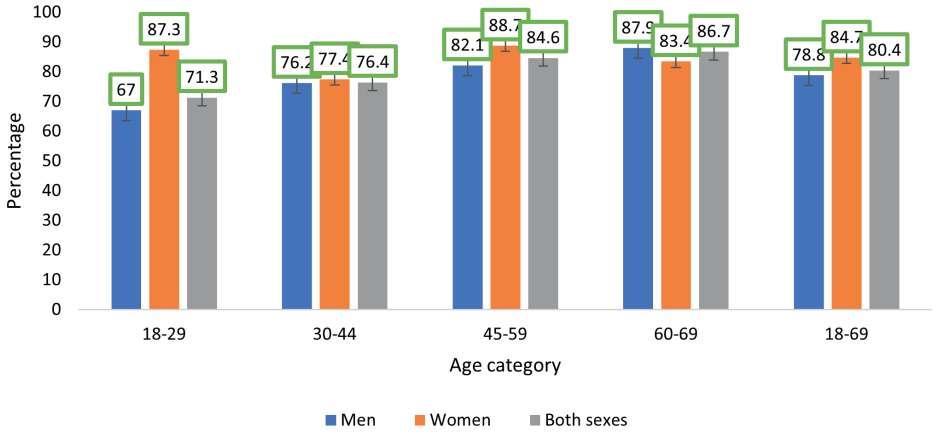
**Table 7:** Percentage of current daily smokers among smokers

| Current daily smokers among smokers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % Daily smokers | 95% CI | n | % Daily smokers | 95% CI | n | % Dailysmokers | 95% CI |
| 18-29 | 23 | 67.0 | 43.4-90.6 | 6 | 87.3 | 62.4-100.0 | 29 | 71.3 | 51.5-91.0 |
| 30-44 | 120 | 76.2 | 68.6-83.9 | 44 | 77.4 | 64.0-90.7 | 164 | 76.4 | 69.2-83.7 |
| 45-59 | 91 | 82.1 | 73.6-90.7 | 76 | 88.7 | 80.3-97.2 | 167 | 84.6 | 78.2-90.9 |
| 60-69 | 71 | 87.9 | 79.8-96.0 | 75 | 83.4 | 74.3-92.4 | 146 | 86.7 | 80.3-93.0 |
| **18-69** | **305** | **78.8** | **73.2-84.4** | **201** | **84.7** | **78.5-91.0** | **506** | **80.4** | **75.8-84.9** |

The population group with the highest prevalence of daily smokers was females aged 45-59 years (88.7%).

The percentage of daily smokers increased gradually with the age of participants (**Figure 2**).

**Fig 2:** Percentage of current daily smokers among smokers, by sex and age group



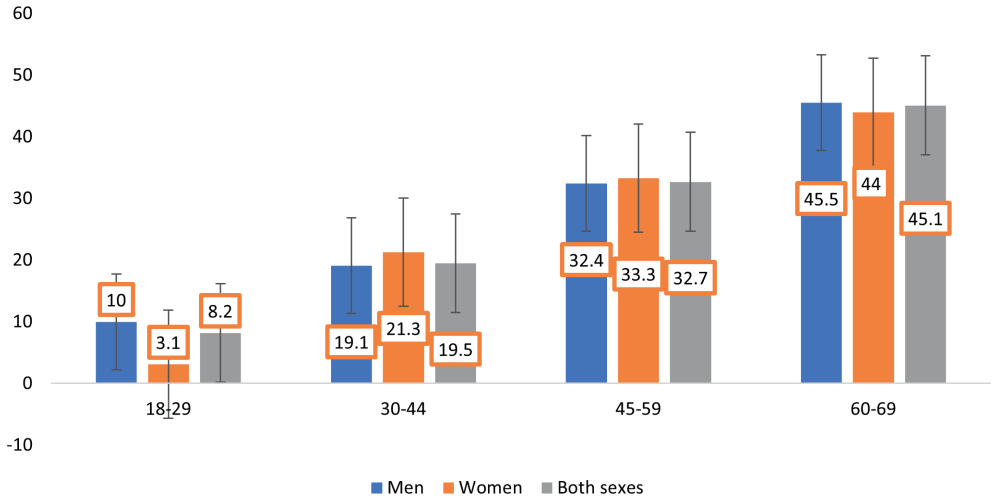

The survey revealed that men started smoking earlier than women with the mean age of 18.6 years in mean versus 19.4 years in women and the mean age for both sexes 18.8 years (table 8) (add Table with all age groups). There was almost no difference between male age groups in terms of the mean age of starting smoking and it varied from 15.8 years old in the group of 18-29 years to 19.6 years old in the age group 45-59 years. There was a regular increase of the mean age of starting smoking among women from 18.4 years old in the age group 30-44 years to 20.3 years old among the age group 60-69 years (**Table 8**).

**Table 8: Mean age of initiation of smoking, in years, among daily smokers**

| Mean age started smoking | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | Mean age | 95% CI | n | Mean age | 95% CI | n | Mean age | 95% CI |
| 18-29 | 15 | 15.8 | 13.8-17.8 | 5 | 18.5 | .-. | 20 | 16.5 | 14.8-18.1 |
| 30-44 | 91 | 8.6 | 17.2-20.1 | 34 | 18.4 | .-. | 125 | 18.6 | 17.4-19.8 |
| 45-59 | 70 | 19.6 | 17.7-21.5 | 64 | 19.7 | .-. | 134 | 19.6 | 18.2-21.0 |
| 60-69 | 59 | 18.8 | 16.3-21.2 | 60 | 20.3 | .-. | 119 | 19.2 | 17.0-21.3 |
| **18-69** | **235** | **18.6** | **17.6-19.6** | **163** | **19.4** | **.-.** | **398** | **18.8** | **18.0-19.6** |

There was a gradual increase in terms of how long since smoking, with a bit longer duration among men (**Figure 3**).

**Fig 3: Mean duration of smoking, in years, among daily smoker, by sex and age group**




Among daily smokers, the majority of men (74.9%) smoked manufactured cigarettes, compared to 22.4% among women and 60.2% for both sexes, and the age group 18-29 years was the most user (100% for men and 85% for women). Among current smokers, 74.6% of men smoked manufactured cigarettes compared to 20.9% of women and 60.3% for both sexes. Still the age group 18-29 years was the most user for men (97.4%) and women (74.2%) (**Table 9**).

**Table 9: Percentage of smokers who use manufactured cigarettes among daily smokers and amongcurrent smokers**

| Manufactured cigarette smokers among daily smokers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % Manufactured cigarette smoker | 95% CI | n | % Manufactured cigarette smoker | 95% CI | n | % Manufactured cigarette smoker | 95% CI |
| 18-29 | 15 | 100.0 | 100.0-100.0 | 5 | 85.0 | 55.1-100.0 | 20 | 96.1 | 88.5-100.0 |
| 30-44 | 86 | 85.5 | 77.3-93.7 | 34 | 21.5 | 3.9-39.2 | 120 | 73.4 | 63.7-83.1 |
| 45-59 | 70 | 70.2 | 58.8-81.6 | 66 | 12.7 | 3.1-22.2 | 136 | 47.9 | 37.9-58.0 |
| 60-69 | 60 | 51.1 | 36.6-65.5 | 62 | 9.5 | 1.6-17.4 | 122 | 39.9 | 28.9-51.0 |
| **18-69** | **231** | **74.9** | **68.4-81.4** | **167** | **22.4** | **9.9-34.9** | **398** | **60.2** | **54.4-65.9** |

| Manufactured cigarette smokers among current smokers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group(years) | Men | | | Women | | | Both Sexes | | |
| | n | %Manufactured cigarette smoker | 95% CI | n | % Manufactured cigarette smoker | 95% CI | n | % Manufactured cigarettesmoker | 95% CI |
| 18-29 | 23 | 97.4 | 92.3-100.0 | 6 | 74.2 | 38.6-100.0 | 29 | 92.5 | 84.0-100.0 |
| 30-44 | 114 | 82.7 | 75.4-90.0 | 44 | 24.0 | 10.2-37.9 | 158 | 71.8 | 63.7-79.9 |
| 45-59 | 91 | 68.1 | 57.1-79.1 | 76 | 11.9 | 3.3-20.5 | 167 | 47.4 | 38.1-56.6 |
| 60-69 | 71 | 52.2 | 39.4-65.0 | 75 | 7.9 | 1.3-14.6 | 146 | 39.9 | 30.0-49.8 |
| **18-69** | **299** | **74.6** | **68.7-80.5** | **201** | **20.9** | **10.1-31.7** | **500** | **60.3** | **55.1-65.5** |

The mean number of manufactured cigarettes smoked per day by daily smokers was 2.4 for all age groups (95% CI: 1.9-2.9). Men smoked on average of 3.0 cigarettes and women 1.0 cigarette per day. The highest number of manufactured cigarettes smoked per day was 4.2; and was found in the age group 18-29 years, for both sexes (**Table 10**).

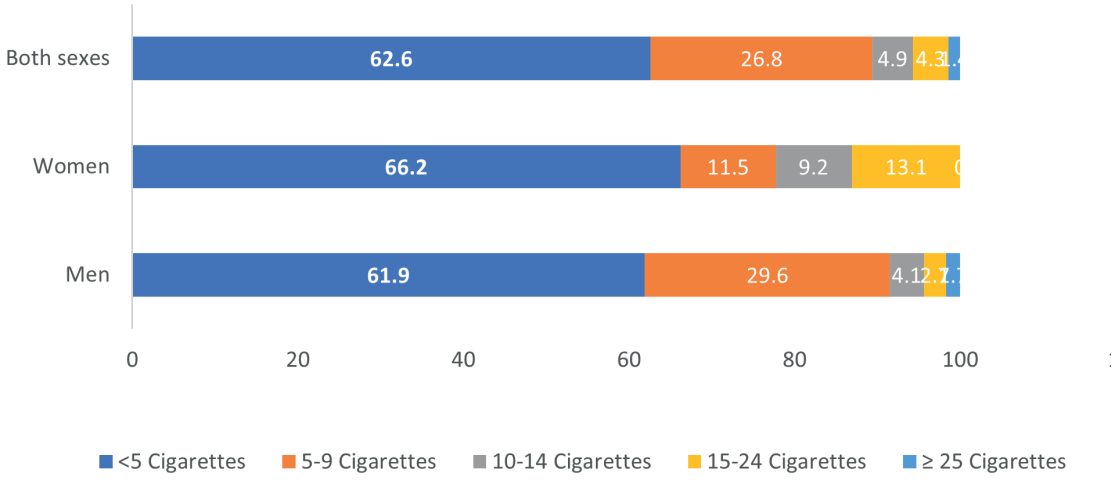
**Table 10: Mean amount of tobacco used by daily smokers per day, by type**

| Mean amount of tobacco used by daily smokers by type | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group(years) | Both Sexes | | | | | | | | |
| | n | Mean # of manu-factured cig. | 95% CI | n | Mean # of handrolled cig. | 95% CI | n | Mean # ofpipes of tobacco | 95% CI |
| 18-29 | 20 | 4.2 | 2.6-5.8 | 19 | 1.7 | 0.5-2.9 | 20 | 0.0 | .-. |
| 30-44 | 120 | 2.5 | 1.9-3.0 | 124 | 1.3 | 0.6-1.9 | 125 | 0.4 | 0.0-0.8 |
| 45-59 | 136 | 1.9 | 1.1-2.6 | 134 | 2.1 | 1.3-2.8 | 135 | 0.8 | 0.4-1.3 |
| 60-69 | 122 | 2.2 | 0.9-3.5 | 121 | 1.6 | 1.2-2.1 | 122 | 0.5 | 0.2-0.8 |
| **18-69** | **398** | **2.4** | **1.9-2.9** | **398** | **1.7** | **1.3-2.0** | **402** | **0.5** | **0.3-0.7** |

| Mean amount of tobacco used by daily smokers by type | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group(years) | Both Sexes | | | | | | | | |
| | n | Mean # of cigars, cheerots,ciga-rillos | 95% CI | n | Mean # of shisha sessions | 95% CI | n | Mean # of other type of tobacco | 95% CI |
| 18-29 | 20 | 0.0 | --- | 20 | 0.0 | 0.0-0.1 | 20 | 0.3 | 0.0-0.5 |
| 30-44 | 124 | 0.4 | 0.1-0.7 | 125 | 0.0 | 0.0-0.0 | 125 | 0.1 | 0.0-0.1 |
| 45-59 | 135 | 0.7 | 0.0-1.4 | 136 | 0.1 | 0.0-0.2 | 136 | 0.0 | 0.0-0.1 |
| 60-69 | 118 | 0.4 | 0.2-0.6 | 122 | 0.0 | .-. | 121 | 0.1 | 0.0-0.1 |
| **18-69** | **397** | **0.5** | **0.2-0.7** | **403** | **0.0** | **0.0-0.1** | **402** | **0.1** | **0.0-0.1** |

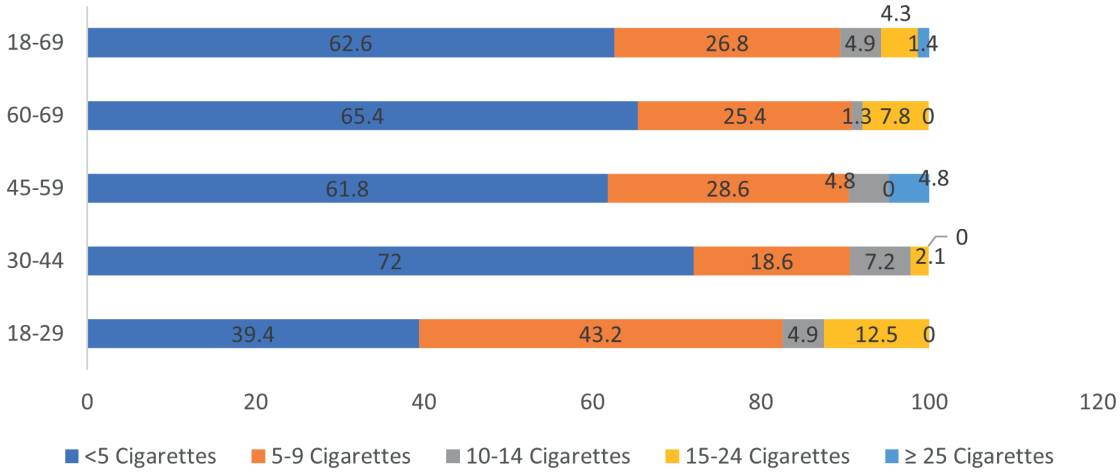
The majority of daily smokers (62.6%) smoked less than 5 cigarettes per day in both sexes. The percentage daily smokers who smoked less than 5 cigarettes per day was 61.9% (95% CI: 54.0-69.9) among men, compared with 66.2% of women (95% CI: 42.3-90.1) (**Figure 4**).

**Fig 4: Percentage of daily smokers by quantity of manufactured or hand-rolled cigarettes smoked per day, by sex**




In terms of age, smoking less than 5 cigarettes was more prevalent among participants aged 30-44 years; smoking 10-14 cigarettes was more prevalent among the age group 18-29 years, 15-24 cigarettes was more reported in 18-29 years and more or 25 cigarettes was more reported in 45-59 years (**Figure 5)**.

**Fig 5: Percentage of daily smokers by quantity of manufactured or hand-rolled cigarettes smoked per day, by age group**




Among all the respondents, the prevalence of former daily smoking was 6.5% in both sexes, 8.4% among men and 4.6% among women (Table 11). Former daily smokers (n=916) accounted for 53.4% among ever daily smokers in both sexes, 50.7% among men and 59.3% among women. The mean time since cessation for former daily smokers was 19.0 years for both sexes, 17.6% in men and 21.6% in women (**Table 11**).

**Table 11: Percentage of former daily smokers among all respondents and among ever daily smokers, and the mean duration, in years, since former smokers quit smoking**

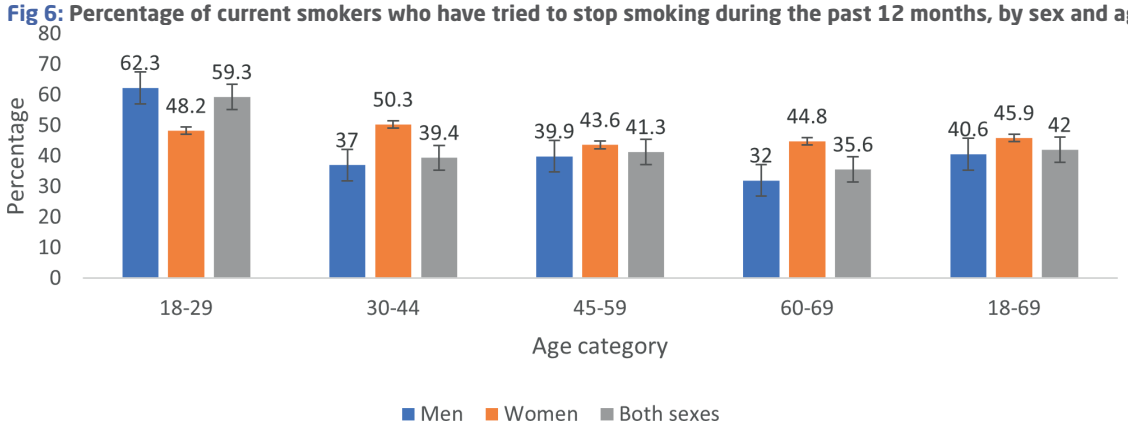
| Former daily smokers (who don't smoke currently) among all respondents | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % Former daily smokers | 95% CI | n | % Formerdaily smokers | 95% CI | n | % Formerdaily smokers | 95% CI |
| 18-29 | 497 | 2.5 | 0.7-4.2 | 813 | 0.0 | 0.0-0.0 | 1310 | 1.3 | 0.4-2.2 |
| 30-44 | 936 | 7.4 | 5.6-9.2 | 1447 | 1.4 | 0.7-2.0 | 2383 | 4.4 | 3.4-5.3 |
| 45-59 | 468 | 18.3 | 14.5-22.1 | 825 | 12.0 | 9.4-14.6 | 1293 | 14.9 | 12.6-17.3 |
| 60-69 | 229 | 33.0 | 26.1-39.9 | 461 | 30.7 | 25.5-35.8 | 690 | 31.8 | 27.4-36.3 |
| **18-69** | **2130** | **8.4** | **7.2-9.7** | **3546** | **4.6** | **3.8-5.3** | **5676** | **6.5** | **5.7-7.3** |

| Former daily smokers (who don't smoke currently) among ever daily smokers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % Former daily smokers | 95% CI | n | % Formerdaily smokers | 95% CI | n | % Formerdaily smokers | 95% CI |
| 18-29 | 25 | 51.9 | 28.0-75.9 | 5 | 0.0 | 0.0-0.0 | 30 | 44.5 | 22.1-66.9 |
| 30-44 | 159 | 43.6 | 35.1-52.1 | 58 | 40.5 | 24.7-56.2 | 217 | 43.1 | 35.4-50.7 |
| 45-59 | 157 | 56.2 | 47.5-64.9 | 170 | 60.5 | 51.5-69.4 | 327 | 58.0 | 51.5-64.4 |
| 60-69 | 143 | 52.4 | 43.2-61.6 | 199 | 73.7 | 66.9-80.6 | 342 | 60.9 | 54.2-67.6 |
| **18-69** | **484** | **50.7** | **45.1-56.3** | **432** | **59.3** | **52.6-66.0** | **916** | **53.4** | **48.8-58.0** |

| Mean years since cessation | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % Former daily smokers | 95% CI | n | % Former daily smokers | 95% CI | n | % Former daily smokers | 95% CI |
| 18-29 | 29 | 7.2 | 5.0-9.4 | 4 | 3.8 | 1.0-6.6 | 33 | 6.9 | 4.9-9.0 |
| 30-44 | 112 | 15.4 | 14.0-16.9 | 51 | 19.9 | 16.0-23.9 | 163 | 16.4 | 15.0-17.8 |
| 45-59 | 105 | 22.6 | 19.8-25.3 | 148 | 21.0 | 18.8-23.2 | 253 | 21.8 | 20.1-23.6 |
| 60-69 | 92 | 26.6 | 23.0-30.3 | 159 | 24.8 | 22.0-27.7 | 251 | 25.7 | 23.5-28.0 |
| **18-65** | **338** | **17.6** | **15.9-19.3** | **362** | **21.6** | **19.7-23.4** | **700** | **19.0** | **17.7-20.2** |

Of the total number of currently smoking respondents, about 42.0% had tried to stop smoking during the last year, among Which 40.6% of men (95% CI: 34.5-46.7) and 45.9% (95% CI: 37.3-46.7) of women. The difference between both sexes in terms of proportion of those who tried to stop smoking does not appear to be statistically significant (**Figure 6**).

**Fig 6: Percentage of current smokers who have tried to stop smoking during the past 12 months, by sex and age group**




Among current smokers, 33.6% of the male respondents and 28.1% of female respondents had been advised to stop smoking by a doctor or a health care provider in the past 12 months (**Table 12**).

**Table 12: Percentage of current smokers who have been advised by a doctor or other health worker to stop smoking, among those smokers who have had a visit to a doctor or other health worker in the past 12 months**

| Current smokers who have been advised by doctor to stop smoking | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % Advised to stop smoking | 95% CI | n | % Advised to stop smoking | 95% CI | n | % Advisedto stop smoking | 95% CI |
| 18-29 | 17 | 45.2 | 16.6-73.9 | 6 | 28.2 | 0.0-66.3 | 23 | 40.8 | 16.5-65.2 |
| 30-44 | 82 | 28.0 | 17.7-38.3 | 37 | 18.7 | 2.5-34.9 | 119 | 26.0 | 17.6-34.4 |
| 45-59 | 65 | 34.1 | 21.3-46.9 | 61 | 32.2 | 18.3-46.1 | 126 | 33.3 | 24.1-42.5 |
| 60-69 | 55 | 33.1 | 17.5-48.7 | 57 | 30.0 | 17.3-42.7 | 112 | 32.3 | 20.9-43.6 |
| **18-69** | **219** | **33.6** | **25.8-41.3** | **161** | **28.1** | **19.0-37.2** | **380** | **32.0** | **25.8-38.2** |

Of all the respondents, the current users of smokeless tobacco were 0.4% in males, 1.4% in females and 0.9% in both sexes (**Table 13**).

**Table 13: Percentage of current users of smokeless tobacco among all respondents**

| Current users of smokeless tobacco | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % Current users | 95% CI | n | % Current users | 95% CI | n | % Current users | 95% CI |
| 18-29 | 497 | 0.6 | 0.0-1.4 | 813 | 0.2 | 0.0-0.6 | 1310 | 0.4 | 0.0-0.9 |
| 30-44 | 936 | 0.2 | 0.0-0.5 | 1447 | 1.2 | 0.6-1.9 | 2383 | 0.7 | 0.4-1.1 |
| 45-59 | 468 | 0.1 | 0.0-0.4 | 825 | 3.4 | 1.9-4.9 | 1293 | 1.9 | 1.1-2.7 |
| 60-69 | 229 | 0.6 | 0.0-1.7 | 461 | 5.1 | 3.0-7.2 | 690 | 2.8 | 1.6-4.1 |
| **18-69** | **2130** | **0.4** | **0.0-0.8** | **3546** | **1.4** | **1.1-1.8** | **5676** | **0.9** | **0.6-1.2** |

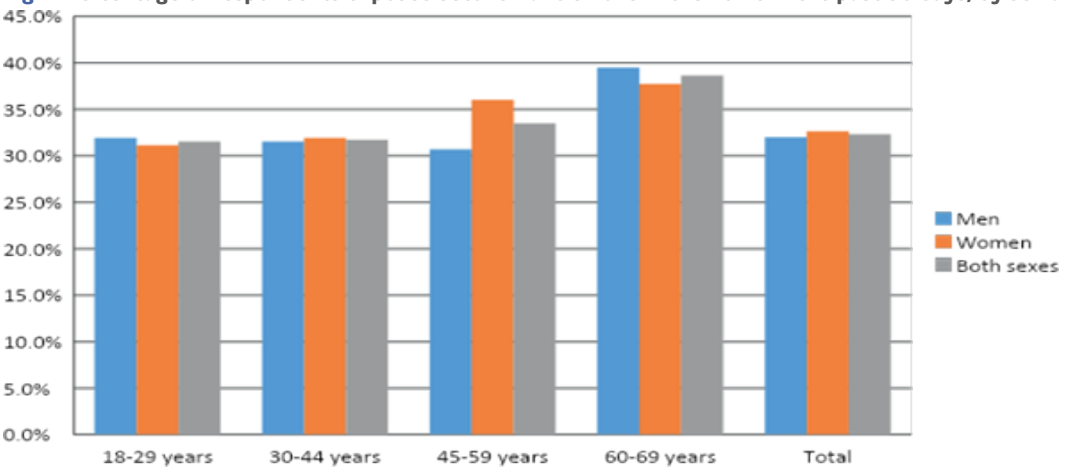
About 97.4% of all respondents had never used smokeless tobacco, while 1.7% of them are past users of smokeless tobacco, and 0.5% were daily users while remaining 0.4% were non-daily users of smokeless tobacco (**Table 14**).

**Table 14: Status of using smokeless tobacco among all respondents, both sexes by age group**

| Smokeless tobacco use | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Both Sexes | | | | | | | | |
| | | Current user | | | | Non user | | | |
| Age Group (years) | n | % Daily | 95% CI | % Non-daily | 95% CI | % Pastuser | 95% CI | % Never used | 95% CI |
| 18-29 | 1310 | 0.2 | 0.0-0.6 | 0.2 | 0.0-0.5 | 0.6 | 0.0-1.2 | 99.0 | 98.2-99.8 |
| 30-44 | 2383 | 0.4 | 0.1-0.7 | 0.3 | 0.1-0.6 | 1.1 | 0.5-1.6 | 98.2 | 97.6-98.8 |
| 45-59 | 1293 | 1.3 | 0.6-2.0 | 0.6 | 0.1-1.1 | 3.9 | 2.8-5.0 | 94.2 | 92.9-95.6 |
| 60-69 | 690 | 1.5 | 0.6-2.4 | 1.3 | 0.4-2.2 | 6.4 | 4.2-8.6 | 90.8 | 88.3-93.3 |
| **18-69** | **5676** | **0.5** | **0.3-0.7** | **0.4** | **0.2-0.6** | **1.7** | **1.3-2.1** | **97.4** | **96.9-97.9** |

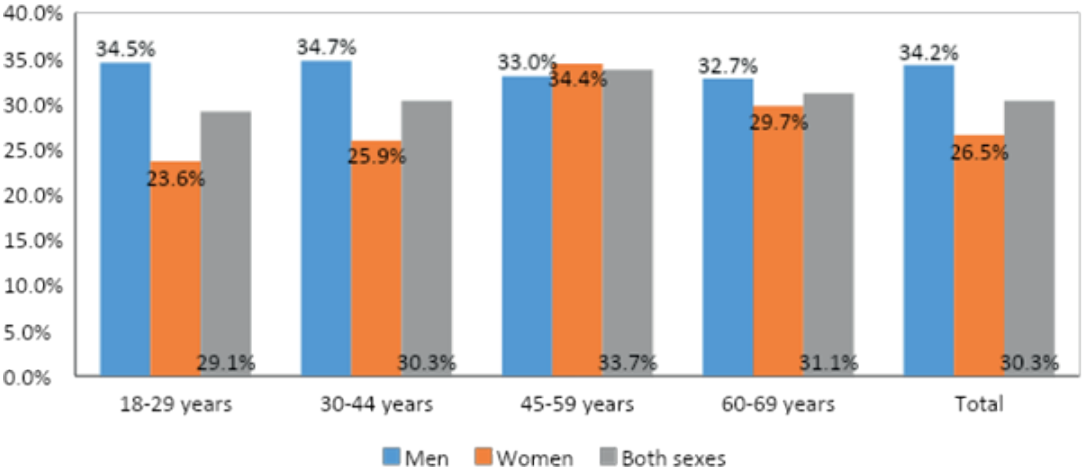
About 32.3% of respondents in the study population were exposed to second-hand smoke at home. There was no difference in the exposure among men and women (32.0% for men (95% CI: 29.1-35.0) and 32.6% for females (95% CI: 30.6-34.7) (**Figure 7**).

**Fig 7: Percentage of respondents exposed second-hand smoke in the home in the past 30 days, by sex and age group**




Of all participants, 30.3% (95%CI: 28.1-32.6) had been exposed to second-hand smoking in their workplace in the past 30 days. There was a significant difference in the exposure to second-hand smoke in the workplace, which was 34.2% (95% CI: 30.6-37.9) among men and 26.5% (95% CI: 24.1-28.9) among women (**Figure 8**).

**Fig 8: Percentage of respondents exposed to second-hand smoke in the workplace in the past 30 days**




The overall prevalence of current tobacco using (smoking and smokeless tobacco users) was 7.4%, 10.6% among men and 4.2% among women. The prevalence of daily tobacco use (tobacco & smokeless tobacco) was 5.8%, 8.2% among men and 3.5% among women (**Table 15**).

**Table 15: Percentage of daily and current (daily plus non-daily) tobacco users, including smoking and smokeless, among all respondents**

| Current tobacco users | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % Current users | 95% CI | n | % Current users | 95% CI | n | % Current users | 95% CI |
| 18-29 | 497 | 3.6 | 2.0-5.3 | 813 | 1.1 | 0.1-2.0 | 1310 | 2.4 | 1.5-3.3 |
| 30-44 | 936 | 12.7 | 10.4-15.1 | 1447 | 2.9 | 2.0-3.8 | 2383 | 7.8 | 6.4-9.1 |
| 45-59 | 468 | 17.4 | 13.6-21.1 | 825 | 10.4 | 7.9-12.9 | 1293 | 13.6 | 11.4-15.9 |
| 60-69 | 229 | 34.0 | 26.9-41.1 | 461 | 15.3 | 11.7-18.9 | 690 | 24.6 | 20.5-28.8 |
| **18-69** | **2130** | **10.6** | **9.1-12.1** | **3546** | **4.2** | **3.5-5.0** | **5676** | **7.4** | **6.5-8.3** |

| Daily tobacco users | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % Daily users | 95% CI | n | % Daily users | 95% CI | n | % Daily users | 95% CI |
| 18-29 | 497 | 2.3 | 1.0-3.6 | 813 | 0.9 | 0.0-1.8 | 1310 | 1.6 | 0.8-2.4 |
| 30-44 | 936 | 9.5 | 7.5-11.6 | 1447 | 2.3 | 1.4-3.1 | 2383 | 5.9 | 4.7-7.0 |
| 45-59 | 468 | 14.3 | 10.6-17.9 | 825 | 9.0 | 6.6-11.4 | 1293 | 11.5 | 9.3-13.6 |
| 60-69 | 229 | 29.9 | 22.9-36.9 | 461 | 11.4 | 8.3-14.4 | 690 | 20.6 | 16.6-24.7 |
| **18-69** | **2130** | **8.2** | **6.9-9.5** | **3546** | **3.5** | **2.7-4.2** | **5676** | **5.8** | **5.1-6.6** |

Passive smoking or second-hand smoking is harmful, either in home or at workplace. Almost one third of the study participants were exposed to second-hand smoke in home during the past 30 days (32.3%), with almost a similar proportion among men (32%) and women (32.6%). In general, second-hand smoking was in gradual increase with age (**Table 16**).

**Table 16: Percentage of respondents exposed second-hand smoke in the home in the past 30 days**

| Exposed to second-hand smoke in home during the past 30 days | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | | | |
| | n | % Exposed | 95% CI | n | % Exposed | 95% CI | n | % Exposed | 95% CI |
| 18-29 | 497 | 31.9 | 26.8-36.9 | 813 | 31.1 | 27.4-34.8 | 1310 | 31.5 | 28.1-34.9 |
| 30-44 | 936 | 31.5 | 27.9-35.0 | 1447 | 31.9 | 28.9-34.9 | 2383 | 31.7 | 29.2-34.1 |
| 45-59 | 468 | 30.7 | 26.2-35.3 | 825 | 36.0 | 31.4-40.5 | 1293 | 33.5 | 30.2-36.9 |
| 60-69 | 229 | 39.5 | 32.4-46.6 | 461 | 37.7 | 32.1-43.3 | 690 | 38.6 | 34.4-42.8 |
| **18-69** | **2130** | **32.0** | **29.1-35.0** | **3546** | **32.6** | **30.6-34.7** | **5676** | **32.3** | **30.3-34.4** |

Almost one third of the study participants were exposed to second-hand smoke in the workplace during the past 30 days (30.3%), with a higher proportion among men (34.2%) and women (26.5%). Second-hand smoking was higher in male participants aged 18-44 years and women aged 45-59 years (**Table 17**).

**Table 17. Percentage of respondents exposed to second-hand smoke in the workplace in the past 30 days**

| Exposed to second-hand smoke in the workplace during the past 30 days | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % Exposed | 95% CI | n | % Exposed | 95% CI | n | % Exposed | 95% CI |
| 18-29 | 386 | 34.5 | 28.3-40.7 | 636 | 23.6 | 19.6-27.5 | 1022 | 29.1 | 25.3-32.9 |
| 30-44 | 732 | 34.7 | 30.7-38.8 | 1118 | 25.9 | 22.5-29.3 | 1850 | 30.3 | 27.5-33.1 |
| 45-59 | 374 | 33.0 | 26.7-39.4 | 603 | 34.4 | 29.1-39.7 | 977 | 33.7 | 29.8-37.7 |
| 60-69 | 152 | 32.7 | 22.8-42.6 | 335 | 29.7 | 23.1-36.3 | 487 | 31.1 | 25.6-36.7 |
| **18-69** | **1644** | **34.2** | **30.6-37.9** | **2692** | **26.5** | **24.1-28.9** | **4336** | **30.3** | **28.1-32.6** |

## 2.1.2 Alcohol consumption

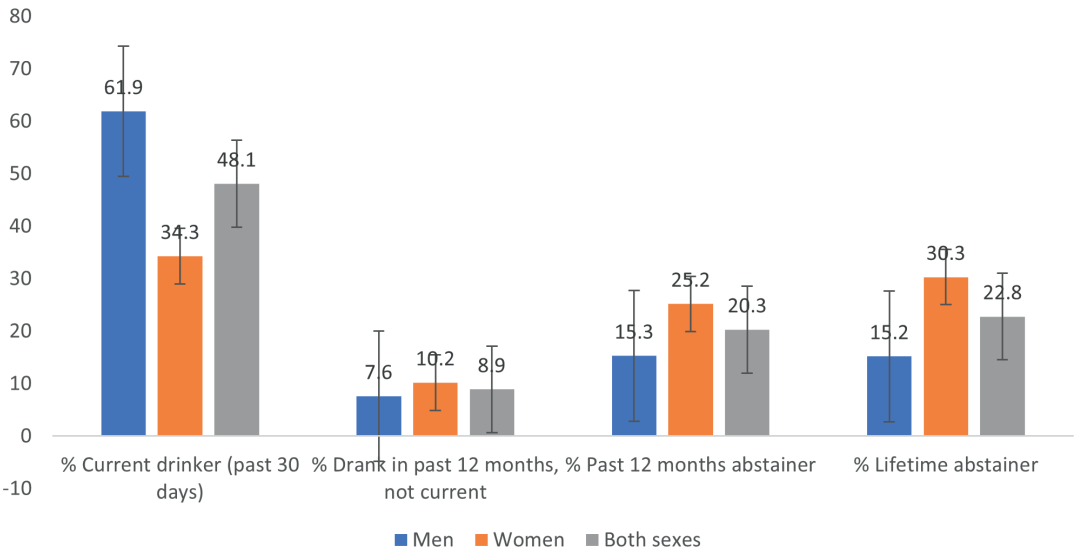
Alcohol consumption patterns, frequency of alcohol drinking and risks associated with alcohol consumption were studied according to age, sex of the survey respondents.

**Box 2:** Alcohol consumption

- Among all the respondents in the age group 18-69 years, 48.1% (95% CI: 46.1-50.0) consumed alcohol during the past 30 days. Considering all participants, 8.9% of both sexes drank alcohol in the past 12 months but are not current drinkers, 7.6% of males and 10.2% of females. Of all participants, 22.8% (95%CI: 21.1-24.5) are lifetime abstainers and 20.3% (95% CI: 18.7-21.8) abstained in the past 12 months.
- The frequency of alcohol consumption was higher in men (61.9%) than in women (34.3%) with a significant difference. At least one in two individuals consumed unrecorded alcohol. Among those, the majority consumed home-brewed spirits.
- Over 15% of study respondents indicated a high level (≥60 grams of pure alcohol, or six standard alcoholic drinks for men and ≥40 grams for women) of alcohol consumption on a single occasion during the past 30 days. This shows a reduction from the previous STEPS survey conducted in 2012-13, which indicated that 23.5% of the study participants were heavy drinkers, but is still alarming. Heavy episodic drinking increased to 20.7 among men.
- Nearly 13% of participants consuming alcohol reported failing to do their duties at least once a month due to alcohol
- Furthermore, 7.2% of participants needed a first alcoholic drink to be able to get going at least once a month.
- More concerning, more than one participant over five (21.4%) mentioned not being able to stop drinking once started. This figure rose to 26% among men.

Among all the respondents in the age group 18-69 years, 48.1% (95% CI: 46.1-50.0) consumed alcohol during the past 30 days, with a gradual increase with the age. The proportion of males (61.9%, 95% CI: 59.0-64.9) was significantly higher than that of females (34.3%, 95% CI: 32.1-36.4) (Table 18). Considering all participants, 8.9% of both sexes drank alcohol in the past 12 months but are not current drinkers, 7.6% of males and 10.2% of females. Of all participants, 22.8% (95%CI: 21.1-24.5) are lifetime abstainers and 20.3% (95% CI: 18.7-21.8) abstained in the past 12 months (**Figure 9**).

**Fig 9: Alcohol consumption status, by sex**



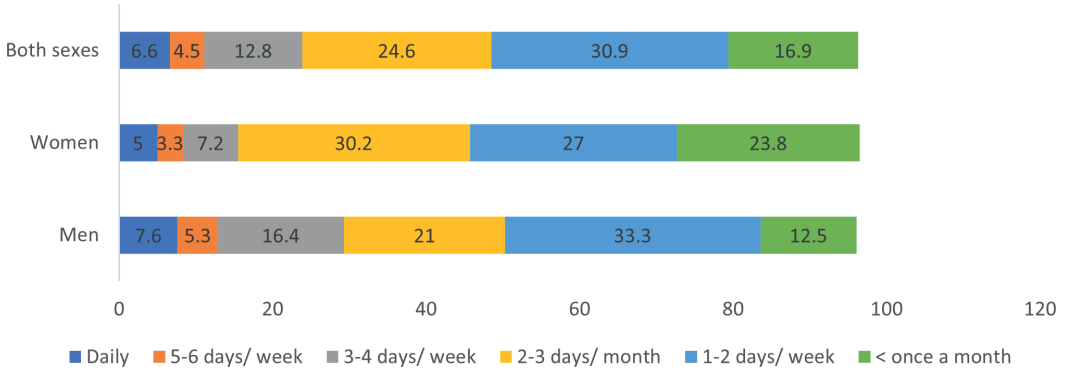
Among former drinkers (those who did not drink during the past 12 months), 12.4% stopped drinking due to health reasons, such as a negative impact of drinking on your health or as per advice of a doctor or other health worker. This proportion was 13.3% among females and 11% among men (**Table 18**).

**Table 18. Percentage of former drinkers (those who did not drink during the past 12 months) by sex and age group**

| Stopping drinking due to health reasons | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % Stopping due to health reasons | 95% CI | n | % Stopping due to health reasons | 95% CI | n | % Stopping due to health reasons | 95% CI |
| 18-29 | 76 | 8.4 | 0.0-18.1 | 188 | 9.6 | 4.6-14.7 | 264 | 9.1 | 4.2-14.0 |
| 30-44 | 119 | 11.5 | 5.5-17.6 | 355 | 10.4 | 6.8-14.0 | 474 | 10.8 | 7.6-14.0 |
| 45-59 | 84 | 10.5 | 3.0-17.9 | 269 | 16.8 | 11.7-22.0 | 353 | 14.6 | 10.4-18.8 |
| 60-69 | 50 | 25.0 | 11.7-38.4 | 158 | 29.4 | 21.0-37.8 | 208 | 27.8 | 20.6-35.1 |
| **18-69** | **329** | **11.0** | **5.8-16.3** | **970** | **13.3** | **10.8-15.8** | **1299** | **12.4** | **9.9-15.0** |

Furthermore, 6.6% of participants drank alcohol every day, higher among men. Those who consumed alcohol 5-6 days per week represented 4.5%, while 12.8% of the total study population consumed alcohol 3-4 days per week, while those drinking alcohol 1-2 days per week accounted for 30.9%, and those who drank 2-3 days per week made 24.6%. Those who consumed alcohol less than once a month constituted 16.9% (Figure 10). In terms of age, alcohol was most daily consumed among those aged 60-69 years (9.2% for both sexes and 6.6% among women). Men aged 30-44 years are the most drinking alcohol on a daily basis (11.7%) (**Figure 10**).

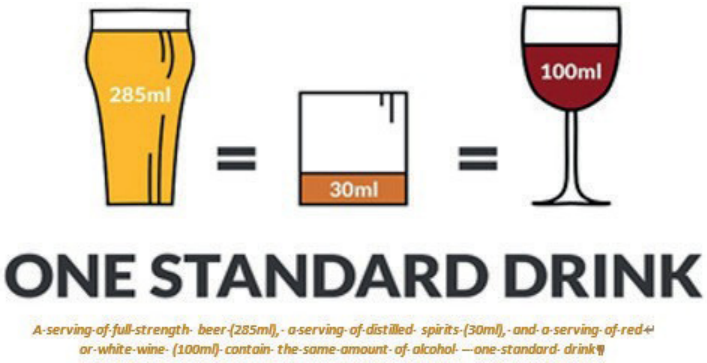
**Fig 10: Frequency of alcohol consumption in the past 12 months by sex and age group**




The alcohol consumption was further analyzed by considering the frequency of drinking in the past 30 days and the number of standard drinks per drinking occasion. Data showed that, on average, the current alcohol drinkers consumed alcohol on 6.6 occasions (95%CI: 6.2-7.1) in the past 30 days. This proportion was higher in men, with 7.6 occasions (95% CI: 7.0-8.3) and lower in women 4.9 occasions (95% CI: 4.4-5.4); and this difference was statistically significant (**Table 19**).

**Table 19: Mean number of occasions with at least one drink in the past 30 days among current drinkers by sex and age group.**

| Mean number of drinking occasions in the past 30 days among current (past 30 days) drinkers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | Mean | 95% CI | n | Mean | 95% CI | n | Mean | 95% CI |
| 18-29 | 262 | 6.0 | 5.1-6.9 | 236 | 4.8 | 3.8-5.8 | 498 | 5.6 | 4.9-6.3 |
| 30-44 | 613 | 8.8 | 7.9-9.7 | 522 | 4.6 | 4.0-5.1 | 1135 | 7.3 | 6.7-7.9 |
| 45-59 | 311 | 8.2 | 7.1-9.2 | 346 | 5.5 | 4.6-6.4 | 657 | 7.0 | 6.3-7.7 |
| 60-69 | 153 | 9.5 | 7.6-11.4 | 191 | 5.2 | 3.9-6.5 | 344 | 7.9 | 6.5-9.2 |
| **18-69** | **1339** | **7.6** | **7.0-8.2** | **1295** | **4.9** | **4.4-5.4** | **2634** | **6.6** | **6.2-7.1** |




The mean number of standard drinks consumed on a drinking occasion among current drinkers was 5.7, 95% CI: 5.3-6.1) drinks for both sexes, with a significant difference between men [6.6 drinks (95% CI: 6.1-7.2)] and women [4.1 drinks (95% CI: 3.6-4.6)] (**Table 20**).

**Table 20: Mean number of standard drinks consumed on a drinking occasion among current drinkers, by sex and age group**

| Mean number of standard drinks per drinking occasion among current (past 30 days) drinkers | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | Mean | 95% CI | n | Mean | 95% CI | n | Mean | 95% CI |
| 18-29 | 260 | 5.4 | 4.5-6.3 | 236 | 4.1 | 3.0-5.3 | 496 | 5.0 | 4.2-5.7 |
| 30-44 | 608 | 7.7 | 6.9-8.6 | 520 | 3.7 | 3.1-4.2 | 1128 | 6.3 | 5.7-6.9 |
| 45-59 | 312 | 7.1 | 6.0-8.2 | 346 | 4.7 | 4.0-5.4 | 658 | 6.1 | 5.3-6.8 |
| 60-69 | 154 | 7.2 | 5.6-8.9 | 190 | 3.9 | 3.0-4.8 | 344 | 6.0 | 4.9-7.1 |
| **18-69** | **1334** | **6.6** | **6.1-7.2** | **1292** | **4.1** | **3.6-4.6** | **2626** | **5.7** | **5.3-6.1** |

The risk associated with alcohol consumption was assessed among current (participants who consumed alcohol in the past 30 days) drinkers based on the average amount of alcohol consumed per drinking occasion.

Results indicated that 15.2% (95% CI: 13.8-16.5) of the study participants were drinking at high-end level (e.g., had consumed an average of ≥60 grams of pure alcohol per drinking occasion for men and ≥40 grams for women during the past 30 days), and this figure was significantly higher among men (20.7%, 95% CI: 18.6-22) than among women (9.8%, 95% CI 8.3-11.2). In terms of age, this proportion was higher among participants aged 45-59 (19.5%) (**Table 21**).

**Table 21: High-, intermediate- and low-volume drinking levels among current (past 30 days) drinkers, by sex and age group**

| Drinking at high-end level among all respondents (≥60g of pure alcohol on average per occasion among menand ≥40g of pure alcohol on average per occasion among women) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % ≥60g | 95% CI | n | % ≥40g | 95% CI | n | % high-end level | 95% CI |
| 18-29 | 477 | 15.7 | 12.0-19.4 | 808 | 7.6 | 5.3-10.0 | 1285 | 11.7 | 9.5-14.0 |
| 30-44 | 901 | 26.1 | 22.8-29.4 | 1424 | 9.0 | 7.4-10.6 | 2325 | 17.4 | 15.5-19.3 |
| 45-59 | 447 | 23.4 | 19.1-27.6 | 813 | 16.2 | 13.0-19.5 | 1260 | 19.5 | 16.8-22.2 |
| 60-69 | 224 | 23.9 | 17.0-30.7 | 451 | 10.5 | 6.9-14.0 | 675 | 17.1 | 13.2-20.9 |
| **18-69** | **2049** | **20.7** | **18.6-22.9** | **3496** | **9.8** | **8.3-11.2** | **5545** | **15.2** | **13.8-16.5** |

There was a significant difference between men and women in the mean maximum number of standard drinks, where men who were current drinkers consumed a maximum of 3.1 standard drinks (95% CI: 2.9-3.3), and 2.0 standard drinks for women (95% CI: 1.8-2.1) making an average of 2.7 drinks for both sexes (95% CI: 2.5-2.8) (**Table 22**).

**Table 22: Largest number of drinks consumed during a single occasion in the past 30 days among current drinkers**

| Mean maximum number of standard drinks consumed on one occasion in the past 30 days | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | Mean maximumnumber | 95% CI | n | Mean maximumnumber | 95% CI | n | Mean maximumnumber | 95% CI |
| 18-29 | 260 | 2.8 | 2.5-3.2 | 229 | 2.0 | 1.7-2.3 | 489 | 2.5 | 2.3-2.8 |
| 30-44 | 593 | 3.5 | 3.1-3.8 | 512 | 1.9 | 1.7-2.1 | 1105 | 2.9 | 2.7-3.2 |
| 45-59 | 308 | 3.0 | 2.7-3.3 | 340 | 2.0 | 1.7-2.2 | 648 | 2.5 | 2.3-2.8 |
| 60-69 | 154 | 2.7 | 2.4-3.1 | 184 | 1.9 | 1.6-2.2 | 338 | 2.4 | 2.2-2.7 |
| **18-69** | **1315** | **3.1** | **2.9-3.3** | **1265** | **2.0** | **1.8-2.1** | **2580** | **2.7** | **2.5-2.8** |

Among the survey respondents, 3.4% of individuals had consumed six or more drinks on a single occasion at least once during the past 30 days, with a significant difference between men and women. A total of 4.5% (95% CI: 3.3-5.7) of men and 2.2% (95% CI: 1.5-3.0) of female reported having consumed six or more drinks at least once in the last 30 days (**Table 23**).

**Table 23: Consumption of six or more drinks on a single occasion at least once during the past 30 days among total population**

| Six or more drinks on a single occasion at least once during the past 30 days among total population | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % ≥ 6 drinks | 95% CI | n | % ≥ 6 drinks | 95% CI | n | % ≥ 6 drinks | 95% CI |
| 18-29 | 482 | 3.7 | 1.7-5.7 | 807 | 1.9 | 0.6-3.3 | 1289 | 2.8 | 1.6-4.0 |
| 30-44 | 897 | 4.9 | 3.5-6.4 | 1427 | 2.6 | 1.6-3.7 | 2324 | 3.8 | 2.8-4.7 |
| 45-59 | 445 | 5.4 | 2.9-7.9 | 811 | 2.6 | 1.2-4.1 | 1256 | 3.9 | 2.5-5.3 |
| 60-69 | 222 | 7.1 | 2.1-12.1 | 452 | 1.4 | 0.0-3.2 | 674 | 4.2 | 1.6-6.8 |
| **18-69** | **2046** | **4.5** | **3.3-5.7** | **3497** | **2.2** | **1.5-3.0** | **5543** | **3.4** | **2.7-4.1** |

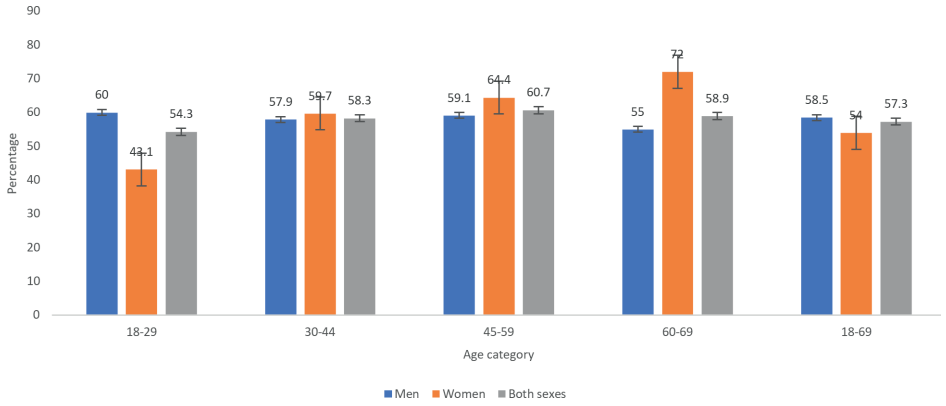
Almost eight of ten current (30 days) drinkers (78.0%) reported consuming unrecorded alcohol (homebrewed alcohol, alcohol brought over the border, not intended for drinking or other untaxed alcohol) during the past seven days: 78.1% among men (95% CI: 74.5-81.7) and 77.8% among women (95% CI: 74.3-81.3) (**Table 24**).

**Table 24: Consumption of unrecorded alcohol by sex and age group**

| Consumption of unrecorded alcohol | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % Consumingunrecorded alcohol | 95% CI | n | % Consumingunrecorded alcohol | 95% CI | n | % Consumingunrecorded alcohol | 95% CI |
| 18-29 | 225 | 78.6 | 71.7-85.6 | 180 | 78.9 | 72.3-85.6 | 405 | 78.7 | 73.5-84.0 |
| 30-44 | 551 | 77.8 | 73.4-82.1 | 416 | 77.9 | 73.0-82.7 | 967 | 77.8 | 74.3-81.3 |
| 45-59 | 281 | 75.6 | 69.0-82.1 | 287 | 74.2 | 67.6-80.8 | 568 | 75.0 | 70.0-80.1 |
| 60-69 | 135 | 83.1 | 75.6-90.6 | 158 | 82.5 | 75.4-89.7 | 293 | 82.9 | 77.6-88.2 |
| **18-69** | **1192** | **78.1** | **74.5-81.7** | **1041** | **77.8** | **74.3-81.3** | **2233** | **78.0** | **75.2-80.8** |

The proportion unrecorded alcohol consumption from the total alcohol use during the past seven days among current drinkers, constituted 58.5% among men; 54.0% among women and 57.3% for both sexes (**Figure 11**).

**Fig 11: Percentage of unrecorded alcohol from all alcohol consumption during the past 7 days among current (past 30 days) drinkers.**




Among all survey respondents who reported unrecorded alcohol consumption, the majority (69.2%) reported to drink home-brewed spirits, while 27.9% drank home-brewed beer/wine; and 1.6% drank unrecorded alcohol brought over the border while 0.6% consumed surrogate alcohol (**Table 25**).

**Table 25: Unrecorded alcohol consumption during the past 7 days, by sex and type**

| Unrecorded alcohol consumption during the past 7 days by type | | | | | | |
|---|---|---|---|---|---|---|
| | Men | | | | | |
| Age Group (years) | n | % Home- brewed spirits | % Home- brewed beer/wine | % Brought over border | % Surrogate alcohol | % other |
| 18-29 | 154 | 65.5 | 31.1 | 1.1 | 2.1 | 0.2 |
| 30-44 | 369 | 63.6 | 34.5 | 1.6 | 0.2 | 0.1 |
| 45-59 | 180 | 77.5 | 19.9 | 1.9 | 0.0 | 0.7 |
| 60-69 | 91 | 78.4 | 19.2 | 1.9 | 0.0 | 0.6 |
| **18-69** | **794** | **67.8** | **29.6** | **1.5** | **0.8** | **0.3** |

| Unrecorded alcohol consumption during the past 7 days by type | | | | | | |
|---|---|---|---|---|---|---|
| | Women | | | | | |
| Age Group (years) | n | % Home- brewed spirits | % Home- brewed beer/wine | % Brought over Border | % Surrogate Alcohol | % Other |
| 18-29 | 127 | 68.2 | 28.4 | 3.4 | 0.0 | 0.0 |
| 30-44 | 294 | 70.2 | 23.9 | 1.0 | 0.0 | 5.0 |
| 45-59 | 192 | 82.9 | 16.0 | 1.1 | 0.0 | 0.0 |
| 60-69 | 125 | 77.8 | 22.2 | 0.0 | 0.0 | 0.0 |
| **18-69** | **738** | **73.2** | **23.5** | **1.8** | **0.0** | **1.6** |

| Unrecorded alcohol consumption during the past 7 days by type | | | | | | |
|---|---|---|---|---|---|---|
| | Both Sexes | | | | | |
| Age Group (years) | n | % Home- brewed spirits | % Home- brewed beer/wine | % Brought over border | % Surrogate Alcohol | % Other |
| 18-29 | 281 | 66.2 | 30.4 | 1.7 | 1.6 | 0.2 |
| 30-44 | 663 | 65.0 | 32.2 | 1.5 | 0.1 | 1.2 |
| 45-59 | 372 | 79.3 | 18.6 | 1.6 | 0.0 | 0.5 |
| 60-69 | 216 | 78.2 | 20.0 | 1.3 | 0.0 | 0.4 |
| **18-69** | **1532** | **69.20** | **27.99** | **1.58** | **0.60** | **0.64** |

Among all past 12 months drinkers, 12.6% (95% CI: 10.7-14.5) reported failing to do what was normally expected from them because of drinking on a monthly or more frequent basis during the past 12 months, especially among those aged 30-44 years (**Table 26**). This was higher among men (16.8%) (Annex 10).

**Table 26: Frequency of failing to do what was normally expected from you because of drinking during the past 12 months among past 12-month drinkers by sex and age group**

| Frequency of failing to do what was normally expected from you during the past 12 months among past 12 month drinkers | | | | | | | |
|---|---|---|---|---|---|---|---|
| Age Group (years) | Both Sexes | | | | | | |
| | n | % Monthly or more frequently | 95% CI | % Less than monthly | 95% CI | % Never | 95% CI |
| 18-29 | 661 | 12.0 | 8.5-15.6 | 10.9 | 8.0-13.7 | 77.1 | 72.7-81.5 |
| 30-44 | 1373 | 14.9 | 12.3-17.5 | 7.6 | 6.0-9.2 | 77.5 | 74.7-80.3 |
| 45-59 | 784 | 11.2 | 8.6-13.8 | 7.2 | 5.1-9.3 | 81.6 | 78.4-84.8 |
| 60-69 | 425 | 8.7 | 4.8-12.5 | 5.2 | 2.3-8.2 | 86.1 | 81.5-90.7 |
| **18-69** | **3243** | **12.6** | **10.7-14.5** | **8.7** | **7.4-10.1** | **78.7** | **76.5-80.9** |

Among the past 12-month drinkers, 7.2% (95% CI: 6.0-8.4) reported needing a first drink in the morning to get going after a heavy drinking session on a monthly or more frequent basis during the past 12 months, especially among those aged 34-59 years (**Table 27**). This proportion was statistically higher among men (9.1%, 95%CI: 7.4-10.9), compared with women (4.35< 95%CI: 2.7-5.8) (Annex 11).

**Table 27: Frequency of needing a first drink in the morning to get going after a heavy drinking session during the past 12 months among past 12-month drinkers**

| Frequency of needing a first drink in the morning to get going during the past 12 months among past 12-monthdrinkers | | | | | | | |
|---|---|---|---|---|---|---|---|
| Age Group (years) | Both Sexes | | | | | | |
| | n | % Monthly or more frequently | 95% CI | % Less than monthly | 95% CI | % Never | 95% CI |
| 18-29 | 661 | 5.7 | 3.5-7.9 | 3.2 | 1.5-4.8 | 91.2 | 88.4-94.0 |
| 30-44 | 1373 | 8.6 | 6.9-10.3 | 3.8 | 2.6-5.0 | 87.6 | 85.5-89.6 |
| 45-59 | 780 | 8.6 | 6.3-10.9 | 2.9 | 1.4-4.3 | 88.5 | 85.7-91.3 |
| 60-69 | 426 | 6.4 | 2.9-9.8 | 3.4 | 0.8-6.0 | 90.2 | 86.0-94.4 |
| **18-69** | **3240** | **7.2** | **6.0-8.4** | **3.3** | **2.5-4.2** | **89.4** | **88.0-90.9** |

Among all the past 12-month drinkers, 21.4% (95% CI: 19.4-23.5) reported not being able to stop drinking once started on a monthly or more frequent basis during the past 12 months, especially among those aged 30-44 years. This proportion was significantly higher among men (25.5%, 95% CI 22.5-28.4) than women (15.2%, 95% CI 12.5-17.9) (**Table 28**).

**Table 28: Frequency of not being able to stop drinking once started during the past 12 months among past 12-month drinkers by sex**

| Frequency of not being able to stop drinking once started during the past 12 months among past 12-month drinkers | | | | | | | |
|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | | | | |
| | n | % Monthly or more frequently | 95% CI | % Less than monthly | 95% CI | % Never | 95% CI |
| 18-29 | 321 | 23.5 | 18.0-28.9 | 10.4 | 6.8-13.9 | 66.2 | 60.1-72.2 |
| 30-44 | 701 | 28.2 | 24.5-31.8 | 10.1 | 7.7-12.5 | 61.7 | 57.6-65.9 |
| 45-59 | 353 | 26.6 | 21.2-32.1 | 12.5 | 8.3-16.7 | 60.9 | 55.2-66.6 |
| 60-69 | 174 | 21.7 | 14.8-28.6 | 7.9 | 3.2-12.5 | 70.4 | 62.6-78.2 |
| **18-69** | **1549** | **25.5** | **22.5-28.4** | **10.4** | **8.6-12.2** | **64.1** | **60.9-67.3** |

| Frequency of not being able to stop drinking once started during the past 12 monthsamong past 12-month drinkers | | | | | | | |
|---|---|---|---|---|---|---|---|
| Age Group (years) | Women | | | | | | |
| | n | % Monthly or more frequently | 95% CI | % Less than monthly | 95% CI | % Never | 95% CI |
| 18-29 | 335 | 12.3 | 7.6-16.9 | 5.2 | 2.7-7.6 | 82.6 | 77.2-88.0 |
| 30-44 | 665 | 17.6 | 13.5-21.7 | 6.7 | 4.3-9.2 | 75.6 | 71.2-80.1 |
| 45-59 | 428 | 16.4 | 12.0-20.8 | 5.2 | 2.8-7.5 | 78.5 | 73.6-83.3 |
| 60-69 | 250 | 16.7 | 11.1-22.3 | 5.4 | 1.8-9.1 | 77.9 | 71.5-84.2 |
| **18-69** | **1678** | **15.2** | **12.5-17.9** | **5.7** | **4.4-7.1** | **79.1** | **76.1-82.0** |

| Frequency of not being able to stop drinking once started during the past 12 monthsamong past 12-month drinkers | | | | | | | |
|---|---|---|---|---|---|---|---|
| Age Group (years) | Both Sexes | | | | | | |
| | n | % Monthly or more frequently | 95% CI | % less than monthly | 95% CI | % Never | 95% CI |
| 18-29 | 656 | 19.3 | 15.6-23.0 | 8.4 | 6.0-10.9 | 72.3 | 68.0-76.5 |
| 30-44 | 1366 | 24.1 | 21.2-27.0 | 8.8 | 7.0-10.5 | 67.1 | 64.0-70.3 |
| 45-59 | 781 | 22.1 | 18.5-25.7 | 9.2 | 6.6-11.9 | 68.7 | 64.7-72.6 |
| 60-69 | 424 | 19.7 | 15.0-24.3 | 6.9 | 3.8-9.9 | 73.5 | 68.2-78.7 |
| **18-69** | **3227** | **21.4** | **19.4-23.5** | **8.6** | **7.3-9.8** | **70.0** | **67.7-72.3** |

## 2.1.3 Diet: Fruit and vegetable consumption

**Box 3:** Diet: Fruit and vegetable consumption

- The overall average number of days per week on which fruits were consumed was 1.8 (95% CI: 1.8-1.9).
- The average number of days per week on which vegetables were consumed was 4.2 (95% CI: 4.1-4.3).
- The mean number of servings of fruits and/or vegetables per day for the survey respondents was 2.3 in both sexes.

The consumption of fruits and vegetables was assessed in the survey population by sex and age of survey respondents.
The overall average number of days per week on which fruits were consumed was 1.8 (95% CI: 1.8-1.9). The reported average number of days of fruit consumption was more in men 2.0 days per week (95% CI: 1.8-2.1) than in women, for 1.7 days per week (95% CI: 1.6-1.8) and in younger age groups (**Table 29**).

**Table 29:** Mean days fruit consumed in a typical week by sex and age group

| Mean number of days fruit consumed in a typical week | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | Mean number of days | 95% CI | n | Mean number of days | 95% CI | n | Mean number of days | 95% CI |
| 18-29 | 495 | 2.3 | 2.1-2.5 | 807 | 1.9 | 1.7-2.0 | 1302 | 2.1 | 1.9-2.2 |
| 30-44 | 928 | 1.8 | 1.6-1.9 | 1434 | 1.6 | 1.5-1.8 | 2362 | 1.7 | 1.6-1.8 |
| 45-59 | 464 | 1.6 | 1.4-1.8 | 817 | 1.6 | 1.4-1.8 | 1281 | 1.6 | 1.5-1.8 |
| 60-69 | 228 | 1.4 | 1.1-1.6 | 452 | 1.5 | 1.3-1.7 | 680 | 1.4 | 1.3-1.6 |
| **18-69** | **2115** | **2.0** | **1.8-2.1** | **3510** | **1.7** | **1.6-1.8** | **5625** | **1.8** | **1.8-1.9** |

The average number of days per week on which vegetables were consumed was 4.2 (95% CI: 4.1-4.3). Vegetable consumption was more frequent in women at 4.5 days per week (95% CI: 4.4-4.6) than in men, at 4.0 days per week (95% CI: 3.9-4.1) with a statistically significant difference. The consumption of vegetables was nearly equally distributed across age groups (**Table 30**).

**Table 30:** Mean number of days on which vegetables are consumed in a typical week by sex and age group.

| Mean number of days vegetables consumed in a typical week | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | Mean number of days | 95% CI | n | Mean number of days | 95% CI | n | Mean number of days | 95% CI |
| 18-29 | 496 | 3.9 | 3.7-4.1 | 810 | 4.5 | 4.3-4.7 | 1306 | 4.2 | 4.0-4.4 |
| 30-44 | 936 | 4.0 | 3.8-4.1 | 1445 | 4.4 | 4.3-4.6 | 2381 | 4.2 | 4.1-4.3 |
| 45-59 | 467 | 4.2 | 4.0-4.4 | 823 | 4.6 | 4.4-4.8 | 1290 | 4.4 | 4.3-4.6 |
| 60-69 | 224 | 4.2 | 3.8-4.5 | 458 | 4.4 | 4.1-4.6 | 682 | 4.3 | 4.1-4.5 |
| **18-69** | **2123** | **4.0** | **3.9-4.1** | **3536** | **4.5** | **4.4-4.6** | **5659** | **4.2** | **4.1-4.3** |

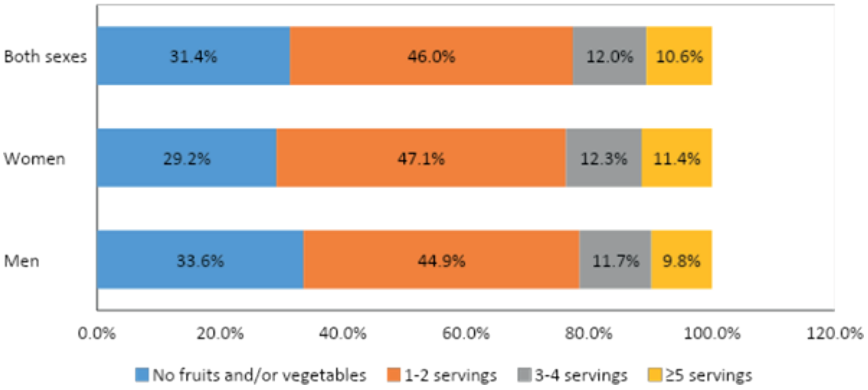
The mean number of servings of fruits and/or vegetables per day for the survey respondents was 2.3 in both sexes, a bit higher among women (2.4%, 95%CI: 2.3-2.6) than men (2.2%, 95%CI: 2.1-2.4), decreasing and the age increases (**Table 31**).

**Table 31:** Mean number of servings of fruit and vegetable consumption by sex and age group

| Mean number of servings of fruit and/or vegetables on average per day | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | Mean number of servings | 95% CI | n | Mean number of servings | 95% CI | n | Mean number of servings | 95% CI |
| 18-29 | 497 | 2.3 | 2.0-2.6 | 812 | 2.5 | 2.2-2.7 | 1309 | 2.4 | 2.2-2.6 |
| 30-44 | 934 | 2.2 | 2.0-2.5 | 1445 | 2.4 | 2.2-2.6 | 2379 | 2.3 | 2.2-2.5 |
| 45-59 | 465 | 2.1 | 1.8-2.4 | 823 | 2.4 | 2.2-2.7 | 1288 | 2.3 | 2.1-2.5 |
| 60-69 | 229 | 1.8 | 1.5-2.0 | 459 | 2.1 | 1.8-2.4 | 688 | 1.9 | 1.7-2.1 |
| 18-69 | 2125 | 2.2 | 2.1-2.4 | 3539 | 2.4 | 2.3-2.6 | 5664 | 2.3 | 2.2-2.4 |

Of all survey respondents 31.4% (95% CI: 29.4-33.3) had no fruit and/or vegetables serving per day and 46.0% (95% CI: 44.2-47.9) of the respondents had 1 to 2 servings of fruits and/or vegetables, 12.0% (95% CI: 10.9- 13.2) had 3 to 4 servings of fruits and/or vegetables on the average day and those who receive more than 5 servings are at 10.6% (95% CI: 9.2-12.0) (**Figure 12**, Annex 13)

**Fig 12: Distribution of respondents by number of servings of fruits and/or vegetables per day**




Men who consumed less than five servings of fruits and/or vegetables on average per day were at 90.2% (95% CI: 88.3-92.1) and 88.6% of women (85% CI: 87.0-90.1) and 89.4% (95% CI: 88.0-90.8) for both sexes (**Table 32**).

**Table 32: Percentage of those eating less than five servings of fruit and/or vegetables on average per day by sex and age group**

| Less than five servings of fruit and/or vegetables on average per day | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | | | | Both Sexes | | |
| | n | % < five servings per day | 95% CI | n | % < five servings per day | 95% CI | n | % < five servings per day | 95% CI |
| 18-29 | 497 | 88.5 | 85.2-91.8 | 812 | 87.7 | 85.1-90.4 | 1309 | 88.1 | 85.8-90.4 |
| 30-44 | 934 | 91.7 | 89.6-93.9 | 1445 | 88.1 | 85.9-90.3 | 2379 | 89.9 | 88.1-91.6 |
| 45-59 | 465 | 89.5 | 86.0-93.0 | 823 | 90.2 | 87.5-92.8 | 1288 | 89.9 | 87.7-92.1 |
| 60-69 | 229 | 96.7 | 94.6-98.9 | 459 | 92.4 | 89.6-95.3 | 688 | 94.6 | 92.8-96.4 |
| **18-69** | **2125** | **90.2** | **88.3-92.1** | **3539** | **88.6** | **87.0-90.1** | **5664** | **89.4** | **88.0-90.8** |

## 2.1.4 Dietary Salt

- The average daily intake of fruit and vegetables among the Rwandan population was 2.3 servings with no statistically significant difference between men and women.

**Box 4:** Dietary Salt

- One in twelve individuals (8.8%) (95% CI: 7.6-10.0) reported adding salt while eating, with higher prevalence among men (12.0%) (95% CI: 9.9-14.1) than among women (5.7%) (95% CI: 4.5-6.8).
- The population was not aware of the recommended level of salt consumption and only 9.3% (95% CI: 8.2-10.4) of the total respondents perceived that they consume too much salt and eight out of 10 persons (75. 7%) (95% CI: 74.2-77.2) perceived that they consume just the right amount of salt.

The consumption of salt was analyzed in the study population by asking the individuals that were interviewed questions regarding the frequency, quantity and type of salt used in their household and the attitude towards dietary salt.

A total of 8.8% of respondents reported that they added salt always or often before eating or while eating, with a significant difference between group and sexes. The percentage of men who added salt always or often to their meals was much higher than that of women (12.0%, 95% CI: 9.9-14.1 versus 5.7, 95%CI: 4.5-6.8) (**Table 33**).

**Table 33: Percentage of respondents always or often adding salt before or while eating**

| Add salt always or often before eating or when eating | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group | Men | | | Women | | | Both Sexes | | |
| (years) | n | % | 95% CI | n | % | 95% CI | n | % | 95% CI |
| 18-29 | 497 | 14.5 | 10.7-18.3 | 813 | 7.2 | 4.8-9.6 | 1310 | 11.0 | 8.7-13.2 |
| 30-44 | 936 | 10.9 | 8.3-13.6 | 1447 | 5.2 | 3.9-6.6 | 2383 | 8.1 | 6.5-9.6 |
| 45-59 | 467 | 8.9 | 5.8-12.1 | 825 | 3.2 | 1.5-4.8 | 1292 | 5.8 | 4.1-7.6 |
| 60-69 | 228 | 6.6 | 2.6-10.5 | 460 | 4.0 | 1.5-6.5 | 688 | 5.3 | 3.0-7.6 |
| **18-69** | **2128** | **12.0** | **9.9-14.1** | **3545** | **5.7** | **4.5-6.8** | **5673** | **8.8** | **7.6-10.0** |

The majority of respondents of all ages (78.6, 95% CI: 76.6-80.7) reported adding salt always or often when cooking or preparing food at home, with no substantial difference between sexes. The consumption of added salt (iodized salt) when cooking was found to decrease with age **(Table 34)**.

**Table 34: Percentage of all respondents who always or often add salt to their food when cooking or preparing foods at home, by age and sex**

| Add salt always or often when cooking or preparing food at home | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group | Men | | | Women | | | Both Sexes | | |
| (years) | n | % | 95% CI | n | % | 95% CI | n | % | 95% CI |
| 18-29 | 495 | 80.7 | 76.1-85.2 | 812 | 78.4 | 74.7-82.1 | 1307 | 79.5 | 76.4-82.7 |
| 30-44 | 936 | 80.0 | 76.9-83.1 | 1447 | 78.0 | 75.2-80.8 | 2383 | 79.0 | 76.7-81.2 |
| 45-59 | 467 | 73.4 | 68.4-78.4 | 824 | 78.7 | 74.7-82.7 | 1291 | 76.3 | 73.1-79.5 |
| 60-69 | 229 | 74.2 | 67.1-81.2 | 461 | 79.0 | 74.0-84.0 | 690 | 76.6 | 72.0-81.1 |
| **18-69** | **2127** | **78.9** | **76.0-81.8** | **3544** | **78.4** | **76.2-80.5** | **5671** | **78.6** | **76.6-80.7** |

When respondents were asked how often they consume processed food high in salt, 2.8% of all survey respondents (95% CI: 2.0-3.6) gave an affirmative answer. The percentage of women (3.4%, 95% CI: 2.4-4.4) who reported eating processed food high in salt was higher than that of men (2.3%, 95% CI: 1.3-3.2) and generally, the proportion of respondents eating processed food high in salt decreased with age (**Table 35**).

**Table 35: Percentage of all respondents who always or often eat processed foods high in salt**

| Always or often consume processed food high in salt | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group | Men | | | Women | | | Both Sexes | | |
| (years) | n | % | 95% CI | n | % | 95% CI | n | % | 95% CI |
| 18-29 | 494 | 2.2 | 0.4-4.0 | 805 | 3.7 | 1.7-5.6 | 1299 | 2.9 | 1.4-4.4 |
| 30-44 | 930 | 3.2 | 1.7-4.7 | 1436 | 3.8 | 2.6-4.9 | 2366 | 3.5 | 2.5-4.5 |
| 45-59 | 461 | 1.0 | 0.1-2.0 | 818 | 2.5 | 1.3-3.7 | 1279 | 1.8 | 1.0-2.6 |
| 60-69 | 226 | 1.1 | 0.0-2.3 | 454 | 1.9 | 0.5-3.4 | 680 | 1.5 | 0.5-2.5 |
| **18-69** | **2111** | **2.3** | **1.3-3.2** | **3513** | **3.4** | **2.4-4.4** | **5624** | **2.8** | **2.0-3.6** |

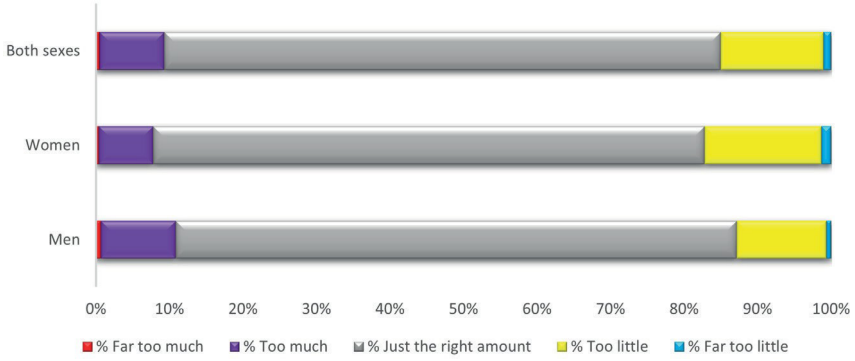
Only 9.3% of all respondents believe that they consume too much or far too much salt. The proportion of men with this perception was higher than that of women with a significant difference (10.9%, 95% CI: 9.1-12.6 versus 7.7%, 95% CI: 6.5-9.0) (**Table 36**)

**Table 36: Self-reported consumers of far too much or too much salt by sex and age**

| Think they consume far too much or too much salt | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group | Men | | | Women | | | Both Sexes | | |
| (years) | n | % | 95% CI | n | % | 95% CI | n | % | 95% CI |
| 18-29 | 497 | 10.6 | 7.5-13.6 | 811 | 8.9 | 6.6-11.2 | 1308 | 9.8 | 7.8-11.7 |
| 30-44 | 934 | 11.6 | 9.2-14.0 | 1445 | 7.4 | 5.8-8.9 | 2379 | 9.5 | 8.0-10.9 |
| 45-59 | 468 | 10.0 | 6.8-13.3 | 822 | 6.3 | 4.4-8.2 | 1290 | 8.0 | 6.2-9.8 |
| 60-69 | 228 | 11.5 | 5.7-17.4 | 460 | 5.5 | 3.1-7.8 | 688 | 8.5 | 5.3-11.7 |
| **18-69** | **2127** | **10.9** | **9.1-12.6** | **3538** | **7.7** | **6.5-9.0** | **5665** | **9.3** | **8.2-10.4** |

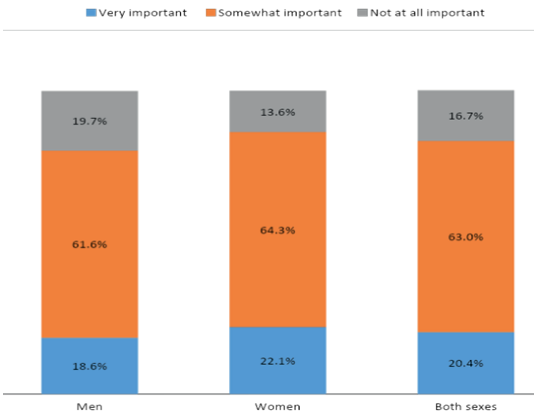
Of all respondents in all ages only 0.5% (95% CI: 0.2-0.8) believed that they consumed far too much salt, 8.8% (95% CI: 7.8-9.8) believed that they consumed to much salt, 75.7% (95% CI: 74.2-77.2) believed that they consumed just the right amount of salt, 14.0% (95% CI: 12.9-15.2) too little amount of salt and 1.0% (95% CI: 0.6-1.3) reported consuming far too little salt. (Figure 15). Far too much salt was more reported among participants aged 18-29 years and too much salt was more reported among those aged 18-44 years (**Figure 13**).

**Fig 13: Self-reported quantity of salt consumed by sex**




Only 20.4% (95% CI: 18.6-22.1) of all respondents reported that they thought that lowering salt in diet is very important, 63.0% (95% CI: 61.0-64.) thought this was somewhat important and 16.7% (95% CI: 15.2-18.2) considered it was not important at all **(Figure 14**).

**Fig 14: Percentage of respondents who think lowering salt in diet is very, somewhat or not at all important**




## 2.1.5 Physical activity

**Box 5:** Physical Activity

- One in thirteen individuals (7.5%) was physically inactive and did not meet WHO recommendations on physical activity for health, resulting in an increased risk for NCDs
- The daily median duration of all physical activities was 334.3 minutes with a significant difference between men and women.
- Almost two-thirds (63.4%) of time spent carrying out physical activity was work-related and 31.1% was transport-related. Women spent more time in work-related physical activity and were equally involved in carrying out transport-related physical activity.

A population's physical activity (or inactivity) can be described in different ways. The two most common ways are (1) to estimate a population's mean or median physical activity using a continuous indicator such as MET- minutes per week or time spent in physical activity, and (2) to classify certain percentages of a population in specific groups by setting up cut-points for a specific amount of physical activity. MET is the ratio of a person's working metabolic rate relative to the resting metabolic rate. One MET is defined as the energy cost of sitting quietly, and is equivalent to a caloric consumption of 1 kcal/kg/hour. Throughout a week, including activity for work, during transport and leisure time, adults should do at least:

- 150 minutes of moderate-intensity physical activity OR
- 75 minutes of vigorous-intensity physical activity OR

An equivalent combination of moderate- and vigorous-intensity physical activity achieving at least 600 MET- minutes.

The three levels of physical activity suggested for classifying populations were low, moderate, and high. The criteria for these levels are shown below:

### *High*

A person reaching any of the following criteria is classified in this category:

- Vigorous-intensity activity on at least 3 days achieving a minimum of at least 1,500 MET-minutes/week

OR

- 7 or more days of any combination of walking, moderate- or vigorous-intensity activities achieving a minimum of at least 3,000 MET-minutes per week.

### *Moderate*

A person not meeting the criteria for the "high" category, but meeting any of the following criteria is classified in this category:

- 3 or more days of vigorous-intensity activity of at least 20 minutes per day OR
- 5 or more days of moderate-intensity activity or walking of at least 30 minutes per day OR
- 5 or more days of any combination of walking, moderate- or vigorous-intensity activities achieving a minimum of at least 600 MET-minutes per week.

### *Low*

A person not meeting any of the above-mentioned criteria falls in this category.

Physical activity in the study population was analyzed using continuous indicators such as cut-off points for specific amounts of physical activity. Total physical activity was recorded taking account all domains namely work-, transport-, and recreation-related activities.

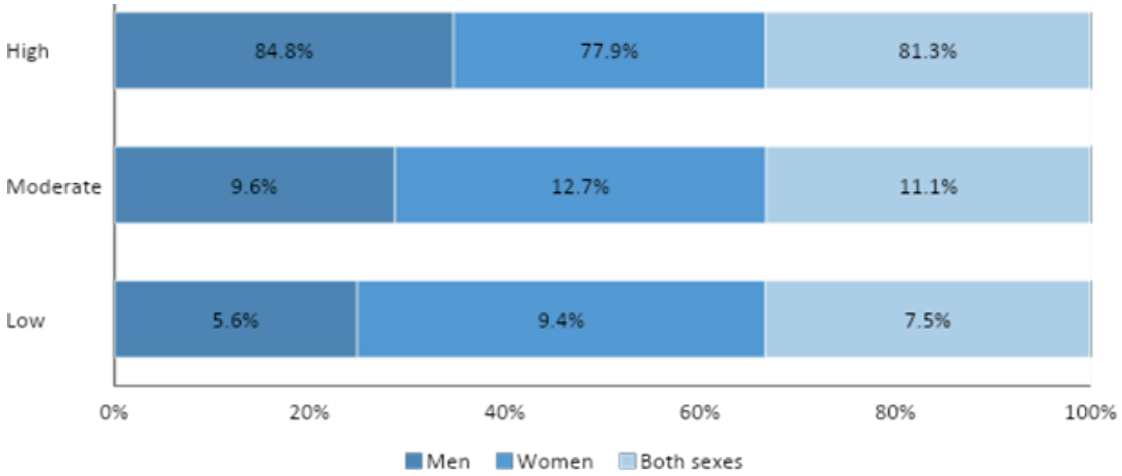
The data showed that 4.6% (95% CI: 3.7-5.5) of the survey respondents did not meet WHO recommendations on physical activity for health; and there was no statistically significant difference between men (3.5%, 95% CI: 2.3-4.7) and women (5.6%, 95% CI: 4.4-6.8). The highest proportion of individuals not meeting WHO recommendations was identified in the age group 60-69 years (8.5%) (**Table 37**).

**Table 37: Proportion of respondents not meeting WHO recommendations on physical activity for health, by age and sex**

| Not meeting WHO recommendations on physical activity for health | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % Not meet-ingrecs | 95% CI | n | % Not meet-ing recs | 95% CI | n | % not meet-ingrecs | 95% CI |
| 18-29 | 479 | 3.3 | 1.1-5.5 | 802 | 5.8 | 3.5-8.0 | 1281 | 4.5 | 2.8-6.2 |
| 30-44 | 907 | 3.6 | 2.3-4.9 | 1409 | 5.2 | 3.6-6.7 | 2316 | 4.4 | 3.4-5.4 |
| 45-59 | 452 | 2.8 | 0.9-4.6 | 806 | 4.4 | 2.6-6.1 | 1258 | 3.6 | 2.4-4.8 |
| 60-69 | 218 | 6.5 | 2.8-10.2 | 446 | 10.6 | 7.1-14.0 | 664 | 8.5 | 6.0-11.1 |
| **18-69** | **2056** | **3.5** | **2.3-4.7** | **3463** | **5.6** | **4.4-6.8** | **5519** | **4.6** | **3.7-5.5** |

According to WHO recommendations, 81.3% (95% CI: 79.5-83.2) of the survey respondents fell into the high level of physical activity category; 11.1% (95% CI: 9.7-12.6) were attributed to the moderate-level activity and 7.5% (95%CI: 6.5-8.6) were in the low level of activity group. A statistically significant difference was recorded between sexes, with 84.8% (95% CI: 82.3-87.3) of men and 77.95 (95% CI: 75.5-80.3) of women in the high- level activity group, while 5.6% (95% CI: 4.2-7.0) of men and 9.4% (95% CI: 8.0-10.8) of women were in the low-level activity category (**Figure 15**).

**Fig 15: Percentage of respondents classified into three categories of total physical activity according to former recommendations**




The total physical activity per day was recorded including work-related, transport-related and recreation- related activities where respondents aged 18-69 years carried out an average of 354.0 minutes of physical activity per day, with a statistically significant difference between men (371.7 minutes, 95% CI: 356.3-387.1) and women (336.7 minutes, 95% CI: 323.3-350.0) (**Table 38**).

**Table 38: Mean minutes of total physical activity on average per day, by age and sex**

| Mean minutes of total physical activity on average per day | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | Mean minutes | 95% CI | n | Mean minutes | 95% CI | n | Mean minutes | 95% CI |
| 18-29 | 479 | 358.0 | 329.9-386.0 | 802 | 309.4 | 289.3-329.4 | 1281 | 334.2 | 317.1-351.2 |
| 30-44 | 907 | 401.0 | 381.9-420.0 | 1409 | 372.5 | 355.4-389.6 | 2316 | 386.5 | 373.1-399.9 |
| 45-59 | 452 | 380.7 | 356.7-404.7 | 806 | 361.7 | 341.4-382.0 | 1258 | 370.5 | 354.3-386.6 |
| 60-69 | 218 | 305.1 | 268.7-341.5 | 446 | 275.5 | 251.0-300.1 | 664 | 290.2 | 268.2-312.2 |
| **18-69** | **2056** | **371.7** | **356.3-387.1** | **3463** | **336.7** | **323.3-350.0** | **5519** | **354.0** | **343.5-364.6** |

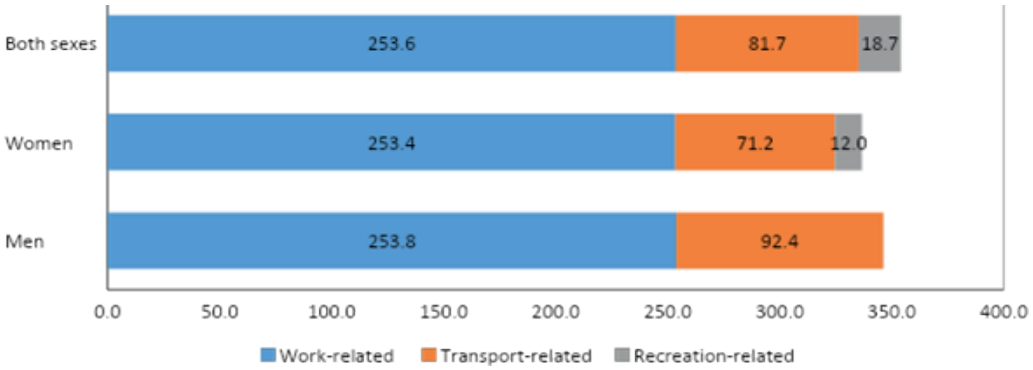
The median duration of all physical activity carried out daily recorded by respondents of all ages was 334.3 minutes; 360.0 minutes for men and 321.4 minutes for women with a significant difference between men and women (**Table 39**).

**Table 39: Median minutes of total physical activity on average per day, by age and sex**

| Median minutes of total physical activity on average per day | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | Median minutes | Inter- quar-tile range (P25-P75) | n | Median minutes | Inter-quar-tilerange (P25-P75) | n | Median minutes | Inter- quar-tile range (P25-P75) |
| 18-29 | 479 | 330.0 | 125.7-528.6 | 802 | 268.6 | 102.9-454.3 | 1281 | 300.0 | 120.0-492.9 |
| 30-44 | 907 | 385.7 | 192.9-570.0 | 1409 | 371.4 | 175.7-540.0 | 2316 | 377.1 | 184.3-546.4 |
| 45-59 | 452 | 360.0 | 210.0-514.3 | 806 | 352.9 | 180.0-514.3 | 1258 | 360.0 | 197.1-514.3 |
| 60-69 | 218 | 284.3 | 111.4-432.9 | 446 | 240.0 | 85.7-428.6 | 664 | 257.1 | 90.0-432.9 |
| **18-69** | **2056** | **360.0** | **161.4-531.4** | **3463** | **321.4** | **126.4-492.9** | **5519** | **334.3** | **145.7-514.3** |

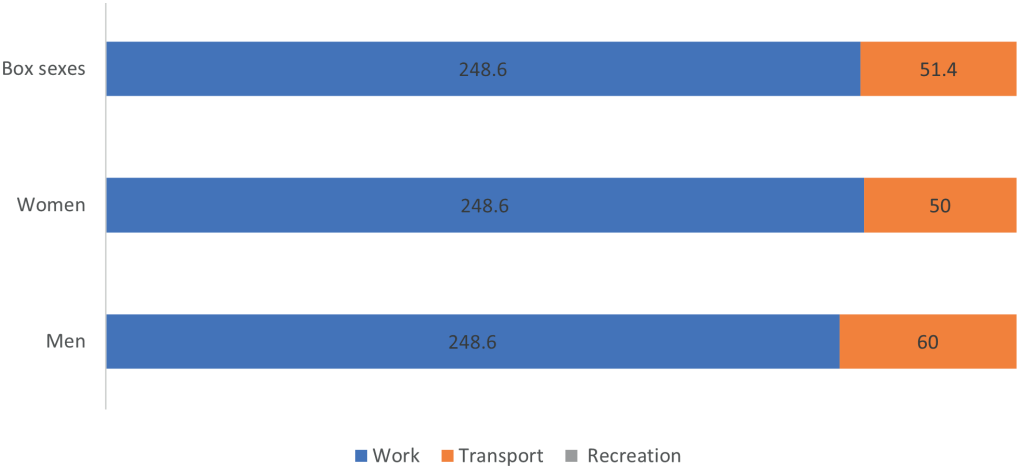
The mean minutes spent in work-related physical activity on average per day for both sexes and all ages was 253.6 minutes and there was no significant difference in the mean minutes of work-related physical activity between men and women. The greatest differences between sexes were found in recreation-related and recreation-related physical activities (**Figure 16**).

**Fig 16: Mean minutes spent in work-, transport- and recreation-related physical activity on average per day, by sex**



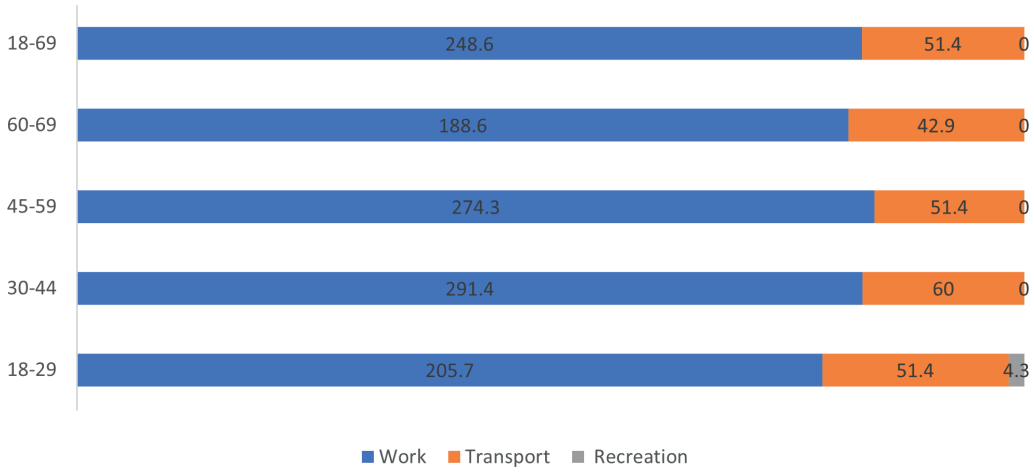

According to WHO recommendations, 81.3% (95% CI: 79.5-83.2) of the survey respondents fell into the high level of physical activity category; 11.1% (95% CI: 9.7-12.6) were attributed to the moderate-level activity and 7.5% (95%CI: 6.5-8.6) were in the low level of activity group. A statistically significant difference was recorded between sexes, with 84.8% (95% CI: 82.3-87.3) of men and 77.95 (95% CI: 75.5-80.3) of women in the high- level activity group, while 5.6% (95% CI: 4.2-7.0) of men and 9.4% (95% CI: 8.0-10.8) of women were in the low-level activity category (**Figure 17**).

**Fig 17: Median minutes spent in work-, transport- and recreation-related physical activity on average per day, by sex**



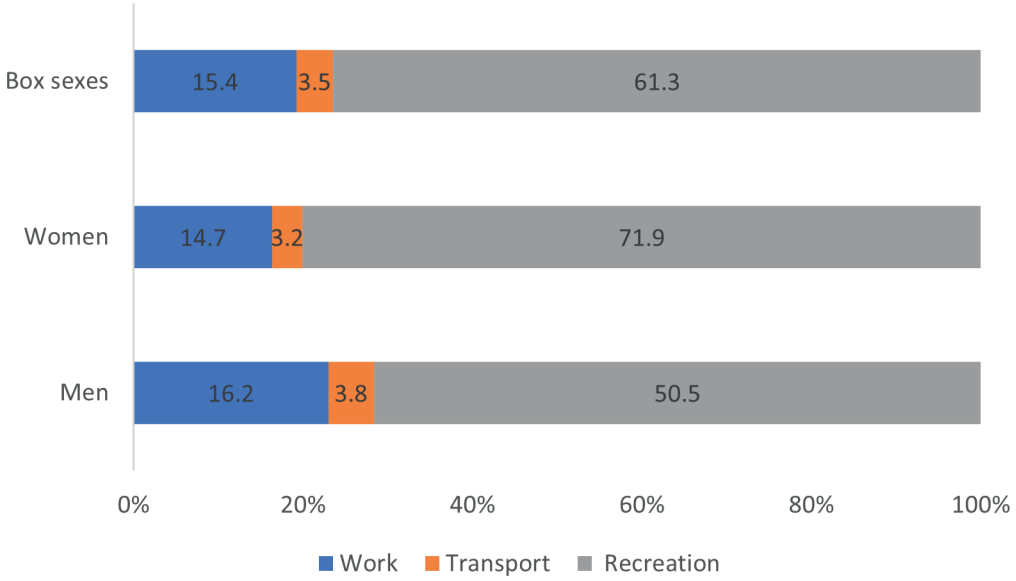

In terms of age group, work-related physical activity was more prevalent in 30–44-year-old people and less prevalent in 60-69 age group. Transport-related physical activity was more prevalent in 30-34 age group and less prevalent in 60.69 age group (**Figure 18**).

**Fig 18: Median minutes spent in work-, transport- and recreation-related physical activity on average per day, by sex**



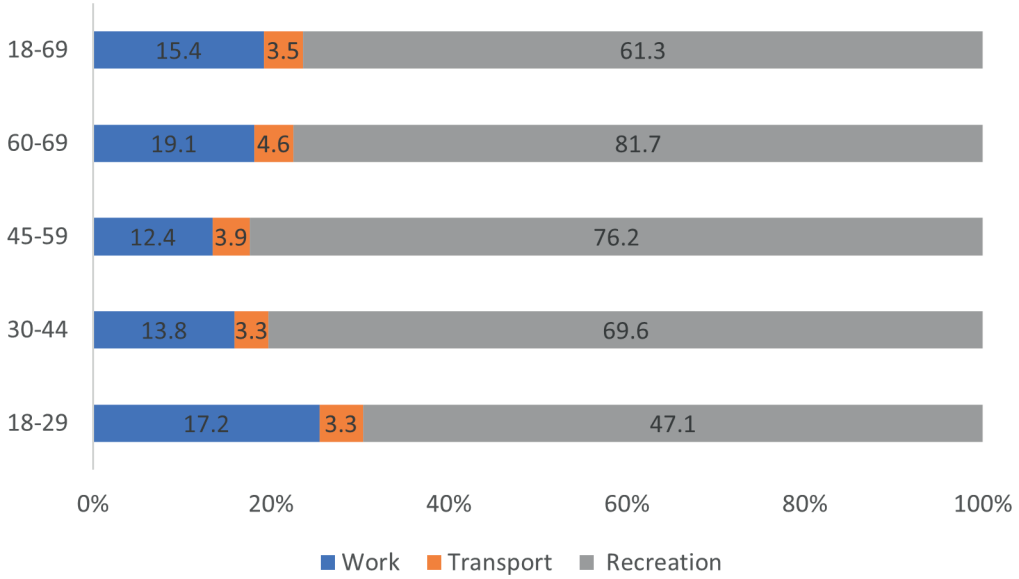

The STEPS survey found that 15.4 (95%CI: 13.6-17.3) of participants were doing no work-related physical activity, statistically different between men (16.2%, 95%CI: 13.3-19.1) and women (14.7%, 95%CI: 12.9-16.4). The majority (61.3%, 95%CI: 59.0-63.6) were doing no recreation-related physical activity, with a statistical difference between men (50.5% , 95%CI: 47.4-53.6) and women (71.9%, 95%CI: 69.1-74.6) and very few were doing transport-related physical activity (3.5%, 95%CI: 2.7-4.2) without any statistical difference between men (3.8%, 95%CI: 2.6-5.0) and women (3.2%, 95%CI: 2.4-4.0) (**Figure 19**).

**Fig 19: Percentage of respondents classified as doing no work-, transport- or recreational-related physical activity, by sex**




Regarding the age category, 60-69 was more reported with no work-related physical activity, no transport- related physical activity and No recreation-related physical activity (**Figure 20**).

**Fig 20:** **Percentage of respondents classified as doing no work-, transport- or recreational-related physical activity, by age group**




The total physical activity in both ages was composed of 61.5% (higher in women, 64.5%) of activity from work, 31.1% (same for both sexes) of activity for transport and 7.4% (higher in men, 10.4%) of activity during leisure time. Activity from the work contributed the most to the total physical activity (**Table 40**).

**Table 40:** **Percentage of work, transport and recreational activity contributing to total activity.**

| Composition of total physical activity | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Men | | | | | | |
| Age Group (years) | n | % Activityfrom work | 95% CI | % Activity fortransport | 95% CI | % Activityduring leisure time | 95% CI |
| 18-29 | 476 | 52.5 | 48.6-56.5 | 31.5 | 28.5-34.4 | 16.0 | 12.9-19.1 |
| 30-44 | 902 | 62.9 | 60.5-65.4 | 31.0 | 28.9-33.2 | 6.0 | 4.8-7.2 |
| 45-59 | 451 | 65.9 | 62.9-69.0 | 28.1 | 25.2-31.1 | 5.9 | 4.2-7.6 |
| 60-69 | 215 | 60.8 | 55.7-66.0 | 36.5 | 31.5-41.5 | 2.6 | 1.4-3.8 |
| **18-69** | **2044** | **58.4** | **56.3-60.6** | **31.1** | **29.4-32.9** | **10.4** | **8.8-12.0** |

| Composition of total physical activity | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Women | | | | | | |
| Age Group (years) | n | % Activityfromwork | 95% CI | % Activity fortransport | 95% CI | % Activity during leisure time | 95% CI |
| 18-29 | 796 | 62.1 | 59.4-64.8 | 31.8 | 29.3-34.3 | 6.1 | 4.7-7.5 |
| 30-44 | 1398 | 65.4 | 63.2-67.6 | 31.3 | 29.2-33.5 | 3.3 | 2.6-3.9 |
| 45-59 | 796 | 68.2 | 65.5-70.9 | 28.6 | 26.0-31.1 | 3.3 | 2.3-4.2 |
| 60-69 | 431 | 66.2 | 62.3-70.0 | 31.5 | 27.7-35.3 | 2.3 | 1.4-3.3 |
| **18-69** | **3421** | **64.5** | **62.8-66.1** | **31.1** | **29.5-32.6** | **4.5** | **3.7-5.2** |

| Composition of total physical activity | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Both Sexes | | | | | | |
| Age Group (years) | n | % Activityfromwork | 95% CI | % Activity for transport | 95% CI | % Activityduring leisure time | 95% CI |
| 18-29 | 1272 | 57.2 | 54.6-59.8 | 31.6 | 29.6-33.6 | 11.1 | 9.3-13.0 |
| 30-44 | 2300 | 64.2 | 62.5-65.9 | 31.2 | 29.6-32.8 | 4.6 | 4.0-5.3 |
| 45-59 | 1247 | 67.1 | 65.0-69.2 | 28.4 | 26.3-30.4 | 4.5 | 3.5-5.5 |
| 60-69 | 646 | 63.5 | 60.3-66.7 | 34.0 | 30.9-37.1 | 2.5 | 1.7-3.2 |
| **18-69** | **5465** | **61.5** | **60.0-62.9** | **31.1** | **29.9-32.3** | **7.4** | **6.5-8.3** |

The mean minutes spent in sedentary activities on average per day among all respondents were 146.9 and the median minutes spent in sedentary activities on average per day among all respondents were120 (**Table 41**).

**Table 41: Minutes spent in sedentary activities on a typical day, by sex and age group**

| Minutes spent in sedentary activities on average per day | | | | | |
|---|---|---|---|---|---|
| Age Group (years) | Men | | | | |
| | n | Mean minutes | 95% CI | Median minutes | Inter-quartile range (P25-P75) |
| 18-29 | 497 | 160.3 | 137.9-182.7 | 120.0 | 60.0-210.0 |
| 30-44 | 936 | 127.5 | 119.8-135.1 | 120.0 | 60.0-180.0 |
| 45-59 | 468 | 142.7 | 130.8-154.6 | 120.0 | 60.0-180.0 |
| 60-69 | 229 | 159.0 | 140.5-177.6 | 120.0 | 60.0-180.0 |
| **18-69** | **2130** | **147.1** | **136.1-158.2** | **120.0** | **60.0-180.0** |
| **Minutes spent in sedentary activities on average per day** | | | | | |
| Age Group (years) | Women | | | | |
| | n | Mean minutes | 95% CI | Medianminutes | Inter-quartile range (P25-P75) |
| 18-29 | 813 | 158.5 | 146.0-170.9 | 120.0 | 60.0-240.0 |
| 30-44 | 1447 | 129.5 | 121.8-137.2 | 120.0 | 60.0-180.0 |
| 45-59 | 825 | 142.9 | 133.8-152.0 | 120.0 | 60.0-180.0 |
| 60-69 | 461 | 163.8 | 148.3-179.2 | 120.0 | 60.0-240.0 |
| **18-69** | **3546** | **146.7** | **139.5-154.0** | **120.0** | **60.0-180.0** |
| **Minutes spent in sedentary activities on average per day** | | | | | |
| Age Group (years) | Both Sexes | | | | |
| | n | Mean minutes | 95% CI | Medianminutes | Inter-quartile range (P25-P75) |
| 18-29 | 1310 | 159.4 | 145.6-173.3 | 120.0 | 60.0-240.0 |
| 30-44 | 2383 | 128.5 | 122.8-134.1 | 120.0 | 60.0-180.0 |
| 45-59 | 1293 | 142.8 | 135.4-150.2 | 120.0 | 60.0-180.0 |
| 60-69 | 690 | 161.4 | 149.8-173.0 | 120.0 | 60.0-210.0 |
| **18-69** | **5676** | **146.9** | **139.7-154.2** | **120.0** | **60.0-180.0** |

## 2.1.6 History of Raised Blood Pressure

**Box 6:** History of Raised Blood Pressure

- 52.1% of the respondents reported that their blood pressure had never been measured with a significant difference between the sexes (65% of men versus 38.3% of women). Although this figure is still high, it shows a significant improvement since the last 2012-13 STEPS survey, which indicated that nearly 80% of participants had never had their blood pressure measured.
- More than a year before the survey, 2.3% of respondents had been diagnosed with hypertension compared to 3.9% within 12 months at the time of study.
- The adherence was very low at 26.2% among hypertensive patients already on treatment by the time of study.

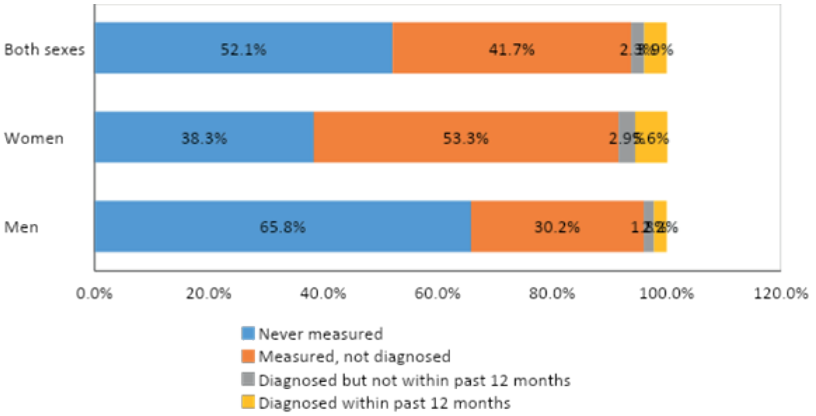
The survey respondents were asked whether they ever underwent blood pressure measurements and whether they had been diagnosed with high blood pressure. Among all age groups (18-69 years), 52.1% reported that their blood pressure had never been measured; 41.7% had undergone blood pressure measurement but had not been diagnosed with hypertension; 2.3% had been diagnosed with hypertension but more than a year before; and 3.9% had been diagnosed with hypertension within 12 months prior to the interview (**Table 42**).

**Table 42: Blood pressure measurement and diagnosis among all respondents by sex and age group**

| Blood pressure measurement and diagnosis | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Both sexes | | | | | | | | |
| Age Group (years) | n | % Never measured | 95% CI | % measured, not diagnosed | 95% CI | % diagnosed,but not within past12 months | 95% CI | % diagnosed within past 12 months | 95% CI |
| 18-29 | 1310 | 61.3 | 58.2-64.4 | 36.1 | 33.1-39.1 | 0.9 | 0.4-1.4 | 1.7 | 1.0-2.4 |
| 30-44 | 2383 | 47.6 | 45.1-50.1 | 46.9 | 44.5-49.3 | 2.4 | 1.7-3.2 | 3.1 | 2.3-3.8 |
| 45-59 | 1293 | 39.8 | 36.6-43.0 | 48.0 | 44.7-51.4 | 4.1 | 2.9-5.3 | 8.1 | 5.9-10.2 |
| 60-69 | 690 | 41.0 | 36.2-45.8 | 39.2 | 34.8-43.7 | 7.3 | 4.8-9.9 | 12.4 | 9.4-15.5 |
| **18-69** | **5676** | **52.1** | **50.2-53.9** | **41.7** | **40.0-43.5** | **2.3** | **1.9-2.8** | **3.9** | **3.3-4.4** |

There was a statistically significant difference in terms of blood pressure history between sexes: 65.8% of men (95% CI: 63.1-68.6) had never had their blood pressure measured, compared with 38.3% (95% CI: 36.0-40.7) of women. The percentage of women diagnosed with high blood pressure during the previous 12 months was statistically higher (5.6%, 95% CI: 4.7-6.5) than that of men (2.2%, 95% CI: 1.5-2.9) (**Figure 21**).

**Fig 21: Blood pressure measurement and diagnosis among all respondents by sex**




The findings showed a very low compliance to high blood pressure treatment. Of all the respondents aged 18- 69 years diagnosed with high blood pressure, only 26.2% were taking the medications prescribed by a doctor or health worker. The age group difference was statistically significant with an increase in the proportion of those taking medication from 14.0% (955 CI: 7.5-20.6) among the age group 30-44 years to 48.5% (95% CI:38.9-58.0) in the age group 60-69 years (**Table 43**).

**Table 43: Proportion of currently taking medication for raised blood pressure prescribed by doctor or health worker among those diagnosed**

| Currently taking drugs (medication) for raised blood pressure prescribed by doctor or health worker amongthose diagnosed | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % Taking meds | 95% CI | n | % Taking meds | 95% CI | n | % Taking meds | 95% CI |
| 18-29 | 6 | 8.5 | 0.0-25.8 | 38 | 20.3 | 3.0-37.5 | 44 | 17.7 | 3.4-32.0 |
| 30-44 | 40 | 10.1 | 1.8-18.5 | 106 | 16.1 | 7.1-25.1 | 146 | 14.0 | 7.5-20.6 |
| 45-59 | 43 | 9.7 | 1.3-18.0 | 116 | 36.8 | 23.9-49.7 | 159 | 27.7 | 18.9-36.5 |
| 60-69 | 30 | 56.0 | 34.3-77.8 | 119 | 44.1 | 33.8-54.5 | 149 | 48.5 | 38.9-58.0 |
| **18-69** | **119** | **20.4** | **12.1-28.7** | **379** | **29.0** | **22.7-35.3** | **498** | **26.2** | **21.3-31.2** |

Of all respondents who have previously been diagnosed with high blood pressure, 11.4% have seen a traditional healer, without any statistical difference between men (6.1%, 95%CI: 1.3-11.0) and women (13.8%, 95%CI: 8.9-18.8). Of those previously diagnosed with blood pressure, 8.6% were taking herbal or traditional remedies for raised blood pressure on the day of the survey, without statistical difference between men (4.8%, 95%CI: 0.3-9.2) and women (10.4%, 95%CI: 5.7-15.0) (**Table 44**)

**Table 44: Percentage of respondents who have sought advice or received treatment from a traditional healer for raised blood pressure among those previously diagnosed with raised blood pressure, by age and sex**

| Seen a traditional healer among those previously diagnosed | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % seen trad. healer | 95% CI | n | % seen trad. healer | 95% CI | n | % seen trad. healer | 95% CI |
| 18-29 | 6 | 0.0 | 0.0-0.0 | 38 | 11.4 | 0.0-26.8 | 44 | 8.9 | 0.0-21.2 |
| 30-44 | 40 | 8.1 | 0.0-16.9 | 106 | 14.5 | 5.9-23.1 | 146 | 12.3 | 5.8-18.8 |
| 45-59 | 43 | 0.0 | 0.0-0.0 | 116 | 14.3 | 6.6-22.1 | 159 | 9.6 | 4.3-14.8 |
| 60-69 | 30 | 15.9 | 0.0-32.4 | 119 | 14.8 | 6.8-22.8 | 149 | 15.2 | 7.4-23.0 |
| **18-69** | **119** | **6.1** | **1.3-11.0** | **379** | **13.8** | **8.9-18.8** | **498** | **11.4** | **7.7-15.0** |
| **Currently taking herbal or traditional remedy for raised blood pressure among those previously diagnosed** | | | | | | | | | |
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | %Taking trad. meds | 95% CI | n | % Taking trad. meds | 95% CI | n | % Taking trad. meds | 95% CI |
| 18-29 | 6 | 0.0 | 0.0-0.0 | 38 | 8.2 | 0.0-23.3 | 44 | 6.4 | 0.0-18.5 |
| 30-44 | 40 | 4.3 | 0.0-10.5 | 106 | 6.7 | 0.4-13.0 | 146 | 5.9 | 1.1-10.6 |
| 45-59 | 43 | 5.1 | 0.0-11.2 | 116 | 13.1 | 5.2-20.9 | 159 | 10.4 | 4.5-16.3 |
| 60-69 | 30 | 7.5 | 0.0-21.9 | 119 | 13.4 | 5.9-21.0 | 149 | 11.3 | 4.2-18.4 |
| **18-69** | **119** | **4.8** | **0.3-9.2** | **379** | **10.4** | **5.7-15.0** | **498** | **8.6** | **5.0-12.1** |

## 2.1.7 History of Diabetes

**Box 7:** History of Diabetes

- 88.5% of respondents had never undergone blood sugar measurement with significant differences between both sexes (90.4% of men vs 87.0% of women).
- Of all the survey respondents, 0.5% had been diagnosed with diabetes more than 12 months prior to the interview and 0.9% within the past 12 months.
- Only 43.1% of participants that had been diagnosed with diabetes were taking medications.

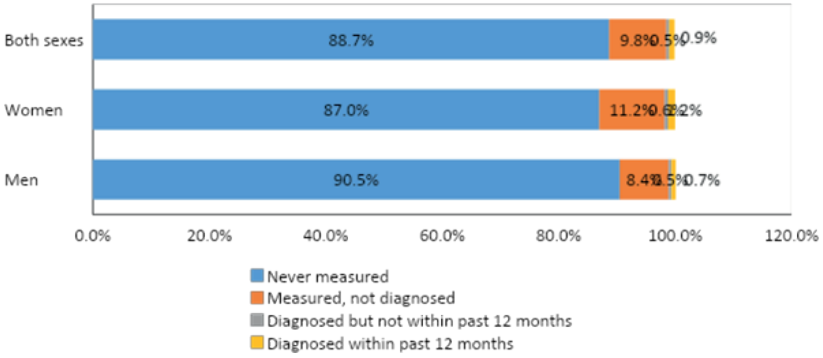
History of diabetes, including blood sugar measurement, established diagnosis and treatment for diabetes were assessed. Of all respondents, 88.5% never had their blood sugar measured and 9.8% had undergone the test but had not been diagnosed with diabetes. 0.5% of the respondents of all ages had been diagnosed with high blood glucose more than 12 months before the survey and 0.9% had been diagnosed with high blood glucose with- in 12 months (**Table 45**).

**Table 45: Blood sugar measurement and diagnosis among all respondents, by sex and age group**

| Blood sugar measurement and diagnosis | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Both sexes | | | | | | | | |
| Age Group (years) | 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 |
| 18-29 | 1310 | 92.4 | 90.0-94.7 | 7.4 | 5.1-9.7 | 0.1 | 0.0-0.3 | 0.1 | 0.0-0.3 |
| 30-44 | 2383 | 87.9 | 86.2-89.5 | 10.6 | 9.1-12.1 | 0.8 | 0.2-1.4 | 0.7 | 0.3-1.1 |
| 45-59 | 1293 | 82.6 | 79.6-85.5 | 13.6 | 11.1-16.1 | 1.1 | 0.3-1.9 | 2.7 | 1.0-4.4 |
| 60-69 | 690 | 83.0 | 79.1-86.9 | 13.4 | 10.3-16.4 | 0.9 | 0.2-1.5 | 2.8 | 1.0-4.6 |
| **18-69** | **5676** | **88.7** | **87.4-90.0** | **9.8** | **8.6-11.1** | **0.5** | **0.3-0.8** | **0.9** | **0.6-1.3** |

The proportion of respondents that had never undergone a test for diabetes was higher in the younger age group. The significant differences were identified between sexes in terms of blood sugar testing where the percentage of men of all ages who had never had their blood glucose measured was 90.4% (95% CI: 88.6- 92.3), compared with 87.0% of women (95% CI: 85.6-88.3). The proportion of those who had undergone blood sugar measurement but had not been diagnosed was 11.2% (95% CI: 9.9-12.5) in women compared to 8.4% (95% CI: 6.6-10.2) (**Figure 22**).

**Fig 22: Blood sugar measurement and diagnosis among all respondents, by sex**




The results showed that 43.1% (95%CI: 29.0-57.2) of the respondents who were previously diagnosed with diabetes were taking drugs (medication), 53.3% (95%CI: 37.3-69.3) of women and 26.7% (95%CI: 6.6-46.8) of men with no significant difference. The results showed that 7.8% (95%CI: 2.3-13.4) of them (n=95) were taking insulin for diabetes, without any statistical difference between men (9.3%, 95%CI: 0.0-19.2) and women (6.9, 95%CI: 1.0-12.8) (**Table 46**).

**Table 46: Diabetes treatment results among those previously diagnosed with raised blood sugar or diabetes**

| Currently taking drugs (medication) prescribed for diabetes among those previously diagnosed | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % taking insulin | 95% CI | n | % taking insulin | 95% CI | n | % taking insulin | 95% CI |
| 18-29 | 1 | 0.0 | 0.0-0.0 | 3 | 0.0 | 0.0-0.0 | 4 | 0.0 | 0.0-0.0 |
| 30-44 | 8 | 12.0 | 5.9-18.1 | 22 | 43.5 | 10.9-76.1 | 30 | 32.9 | 5.8-60.0 |
| 45-59 | 13 | 39.8 | 15.1-64.6 | 21 | 69.9 | 46.3-93.4 | 34 | 56.7 | 35.3-78.1 |
| 60-69 | 6 | 20.1 | 0.0-67.2 | 21 | 64.0 | 42.8-85.1 | 27 | 46.9 | 19.4-74.5 |
| **18-69** | **28** | **26.7** | **6.6-46.8** | **67** | **53.3** | **37.3-69.3** | **95** | **43.1** | **29.0-57.2** |

| Currently taking insulin prescribed for diabetes among those previously diagnosed | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % taking meds | 95% CI | n | % taking meds | 95% CI | n | % taking meds | 95% CI |
| 18-29 | 1 | 0.0 | 0.0-0.0 | 3 | 0.0 | 0.0-0.0 | 4 | 0.0 | 0.0-0.0 |
| 30-44 | 8 | 12.0 | 5.9-18.1 | 22 | 7.1 | 0.0-18.2 | 30 | 8.8 | 0.0-19.7 |
| 45-59 | 13 | 5.1 | 0.0-16.7 | 21 | 6.5 | 0.0-15.5 | 34 | 5.9 | 0.0-12.4 |
| 60-69 | 6 | 20.1 | 0.0-67.2 | 21 | 11.3 | 0.0-27.1 | 27 | 14.7 | 0.0-33.0 |
| **18-69** | **28** | **9.3** | **0.0-19.2** | **67** | **6.9** | **1.0-12.8** | **95** | **7.8** | **2.3-13.4** |

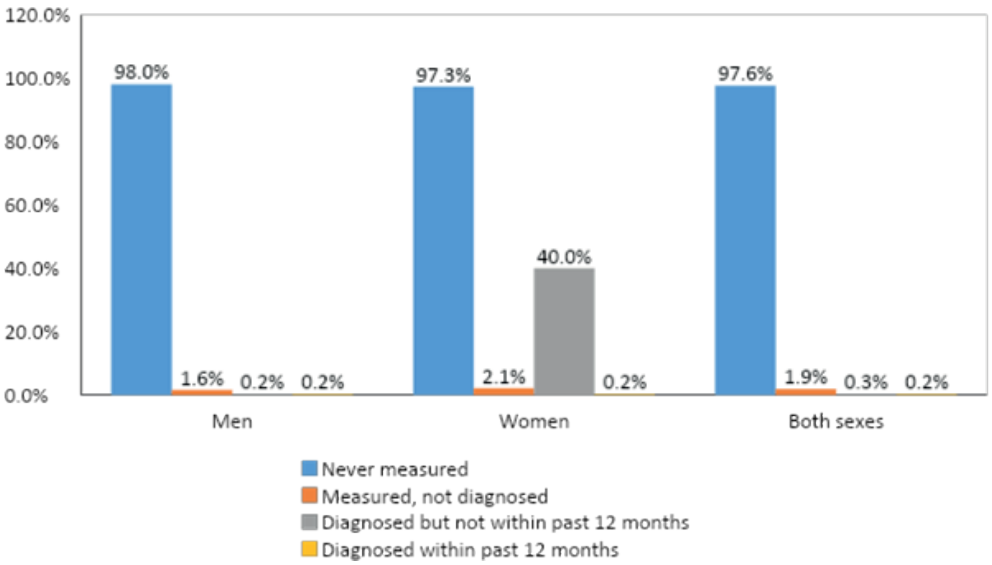
## 2.1.8 History of Raised Total Cholesterol

**Box 8:** History of Raised Total Cholesterol

- The survey found 97.6% of the respondents in all ages had never had their blood cholesterol level measured.
- Only 0.3% of the survey respondents had been diagnosed with high cholesterol more than 12 months before the interview and 0.2% in the past 12 months..
- Of the respondents with high cholesterol, 11.9% had taken oral medications for raised blood cholesterol.

In this survey, 97.6% (95% CI: 97.0-98.3) of the respondents of all ages declared that they had never had their blood cholesterol measured within a health facility, while 1.9% (95% CI: 1.3-2.5) had undergone a test for blood cholesterol level but had not been diagnosed with raised cholesterol. Only 0.3% (95% CI: 0.1-0.5) of the survey respondents had been diagnosed with a high level of cholesterol more than 12 months before the interview and 0.2% (95% CI: 0.1-0.3) were diagnosed with high level of cholesterol within the last 12 months (**Figure 23**).

**Fig 23: Total cholesterol measurement and diagnosis among all respondents, by sex**




There was no observable difference of total cholesterol measurement and diagnosis among all respondents in terms of age group (**Table 47**).

**Table 47:** **Total cholesterol measurement and diagnosis among all respondents, both sexes, by age group.**

| Total cholesterol measurement and diagnosis | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Both sexes | | | | | | | | |
| Age Group (years) | n | % Never measured | 95% CI | % measured, not diag-nosed | 95% CI | % diag-nosed,but not within past12 months | 95% CI | % diag-nosedwithin past12 months | 95% CI |
| 18-29 | 1310 | 98.5 | 97.6-99.3 | 1.3 | 0.5-2.2 | 0.2 | 0.0-0.4 | 0.0 | 0.0-0.1 |
| 30-44 | 2383 | 97.4 | 96.5-98.3 | 2.2 | 1.4-3.1 | 0.2 | 0.0-0.4 | 0.2 | 0.0-0.4 |
| 45-59 | 1293 | 96.3 | 94.5-98.0 | 2.4 | 1.4-3.4 | 0.7 | 0.0-1.5 | 0.6 | 0.0-1.3 |
| 60-69 | 690 | 96.8 | 95.1-98.5 | 2.8 | 1.2-4.4 | 0.4 | 0.0-1.0 | 0.0 | 0.0-0.1 |
| **18-69** | **5676** | **97.6** | **97.0-98.3** | **1.9** | **1.3-2.5** | **0.3** | **0.1-0.5** | **0.2** | **0.1-0.3** |

Among 28 people diagnosed with a high level of total cholesterol, 11.9% were taking the oral medication prescribed for raised total cholesterol at the time of the study.

## 2.1.9 History of Cardiovascular Diseases

**Box 9:** History of Cardiovascular Diseases

• Among all respondents, 5.1% reported having had a heart attack or chest pain from heart disease (angina) or stroke..

• 0.4% of all respondents reported taking aspirin regularly and 0.3% of them took statins to prevent or treat heart disease and the proportion of women who reported using aspirin or stains was high as that of men..

Among all respondents, 5.1% of the respondents of all ages reported having ever had a heart attack or chest pain from heart disease (angina) or stroke; and the prevalence was found to increase gradually with age, from 4.7% (95% CI: 3.2-6.2) in the age group 18-29 years to 9.2% (95% CI: 6.7-11.7) in the age group 60-69 years. Men reported cases of heart attack or stroke less frequently (4.3%, 95% CI: 3.1-5.6) than women (5.8%, 95% CI: 4.8-6.8) but the difference was not statistically significant (**Table 48**).

**Table 48:** **Proportion of respondents having ever had a heart attack or chest pain from heart disease or a stroke, by age and sex**

| Having ever had a heart attack or chest pain from heart disease or a stroke | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % CVD history | 95% CI | n | % CVD history | 95% CI | n | % CVD history | 95% CI |
| 18-29 | 497 | 5.0 | 2.5-7.5 | 813 | 4.3 | 2.8-5.9 | 1310 | 4.7 | 3.2-6.2 |
| 30-44 | 936 | 3.4 | 2.2-4.7 | 1447 | 6.0 | 4.2-7.7 | 2383 | 4.7 | 3.6-5.9 |
| 45-59 | 468 | 3.5 | 1.8-5.2 | 825 | 6.6 | 4.7-8.6 | 1293 | 5.2 | 3.8-6.5 |
| 60-69 | 229 | 5.8 | 2.3-9.3 | 461 | 12.6 | 9.1-16.0 | 690 | 9.2 | 6.7-11.7 |
| **18-69** | **2130** | **4.3** | **3.1-5.6** | **3546** | **5.8** | **4.8-6.8** | **5676** | **5.1** | **4.2-5.9** |

Moreover, 0.4% of the respondents reported regularly taking aspirin and 0.3% of them reported taking statins to prevent or treat heart disease. The proportion of women who reported taking aspirin for prevention or treatment of heart disease was three times higher than that of men (0.7% of women, 95% CI: 0.3-1.0 versus 0.2% of men, 95% CI: 0.0-0.4) even though the difference was not statistically significant. Additionally, the proportion of women using statins was higher (0.5%, 95% CI: 0.3-0.8) than that of men (0.1%, 95% CI: 0.00-0.02) (**Table 49**).

**Table 49: Percentage of respondents who are currently taking aspirin or statins regularly to prevent or treat heart disease, by sex and age group**

| Currently taking aspirin regularly to prevent or treat heart disease | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % taking aspirin | 95% CI | n | % taking aspirin | 95% CI | n | % taking aspirin | 95% CI |
| 18-29 | 497 | 0.3 | 0.0-0.7 | 813 | 0.4 | 0.0-0.8 | 1310 | 0.3 | 0.0-0.7 |
| 30-44 | 936 | 0.0 | 0.0-0.0 | 1447 | 0.6 | 0.1-1.1 | 2383 | 0.3 | 0.1-0.6 |
| 45-59 | 468 | 0.1 | 0.0-0.3 | 825 | 1.0 | 0.2-1.7 | 1293 | 0.6 | 0.1-1.0 |
| 60-69 | 229 | 0.9 | 0.0-2.3 | 461 | 2.1 | 0.5-3.6 | 690 | 1.5 | 0.5-2.5 |
| **18-69** | **2130** | **0.2** | **0.0-0.4** | **3546** | **0.7** | **0.3-1.0** | **5676** | **0.4** | **0.2-0.7** |
| **Currently taking statins regularly to prevent or treat heart disease** | | | | | | | | | |
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % taking statins | 95% CI | n | % taking statins | 95% CI | n | % taking statins | 95% CI |
| 18-29 | 497 | 0.0 | 0.0-0.0 | 813 | 0.2 | 0.0-0.5 | 1310 | 0.1 | 0.0-0.3 |
| 30-44 | 936 | 0.1 | 0.0-0.3 | 1447 | 0.3 | 0.0-0.6 | 2383 | 0.2 | 0.0-0.4 |
| 45-59 | 468 | 0.0 | 0.0-0.0 | 825 | 1.4 | 0.3-2.4 | 1293 | 0.7 | 0.1-1.3 |
| 60-69 | 229 | 0.7 | 0.0-1.7 | 461 | 2.0 | 0.4-3.5 | 690 | 1.3 | 0.4-2.3 |
| **18-69** | **2130** | **0.1** | **0.0-0.2** | **3546** | **0.5** | **0.3-0.8** | **5676** | **0.3** | **0.2-0.5** |

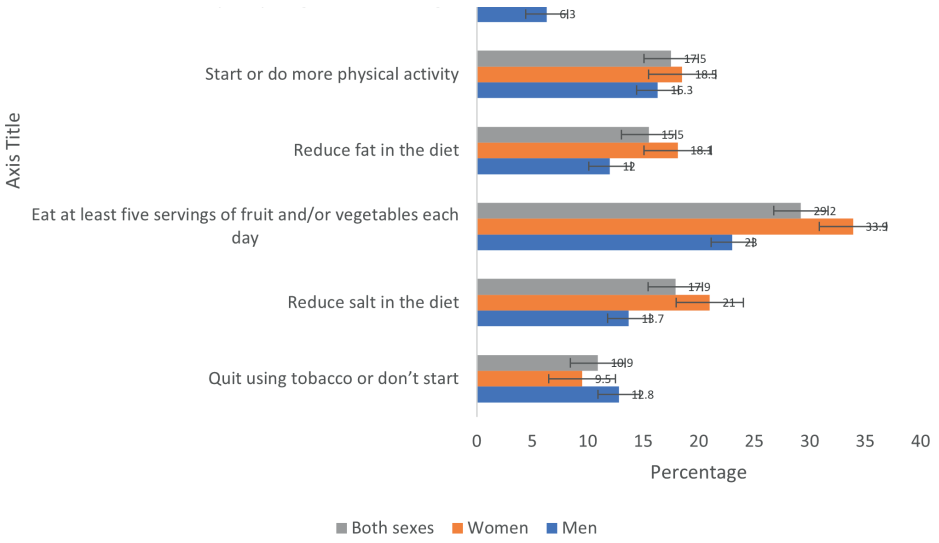
## 2.1.10 Lifestyle advice

**Box 10:** Lifestyle advice

- Fruit and vegetable consumption, alongside reduction of salt in the diet and to start doing more physical activity were the most frequent health advice topics addressed by a doctor or health worker to the survey respondents.
- One in three women respondents (33.9%) received advice to eat at least five servings of fruit and vegetables..

Of all respondents, 10.9% (95% CI: 9.5-12.3) reported to have been advised by a doctor or health worker to quit tobacco or not to start using tobacco or tobacco products: 12.8% (95% CI: 10.1-15.5) among men and 9.5% (95% CI: 8.1-10.9) among women. Of all respondents, 17.9% (95% CI: 16.1-19.6) reported to have been advised by a doctor or health worker to reduce salt in the diet: 13.7% (95% CI: 11.2-16.3) among men and 21.0% (95% CI: 18.7-23.2) among women. Of all respondents, 29.2% (95% CI: 27.1-31.3) reported to have been advised by a doctor or health worker to eat at least five servings of fruit and/or vegetables each day: 23.0% (95% CI: 19.8-26.2) among men and 33.9% (95% CI: 31.4-36.4) among women. Of all respondents, 15.5% (95% CI: 13.8-17.1) reported to have been advised by a doctor or health worker to reduce fat in diet: 12.0% among men (95% CI: 9.7-14.3) and 18.1% among women (95% CI: 16.0-20.3). Of all respondents, 17.5% (95% CI: 15.6- 19.5) reported to have been advised by doctor or health worker to start or do more physical activity: 16.3% among men (95% CI: 13.4-19.3) and 18.5% among women (95% CI: 16.1-20.8). Of all respondents, 9.2% (95% CI: 7.5-10.8) reported to have been advised by doctor or health worker to maintain a healthy body weight or to lose weight: 6.3% among men (95% CI: 4.4-8.3) and 11.3% among women (95% CI: 9.2-13.4). Of all respon- dents, 15.1% (95% CI: 13.3-16.9) reported to have been advised by doctor or health worker to reduce sugary beverages in diet: 13.9% among men (95% CI: 11.1-16.7) and 16.0% among women (95% CI: 13.9-18.1) (**Figure 24**).

**Fig 24: Percentage of respondents who received lifestyle advice from a doctor or health worker during the past three years among all respondents, by sex**




## 2.1.11 Cervical Cancer Screening

**Box 11:** Cervical Cancer Screening

- Only 9% of female respondents had been screened for cervical cancer in the past, with a higher prevalence among women in the age group 45-59 years.
- Almost twelve percent of women (11.7%) in the age group of at high risk for cervical cancer (30-49 years) had undergone cervical cancer screening.

Female respondents were asked whether they had ever had a screening test for cervical cancer. Of all women aged 18-69 years participating in the study, 9.0% (95% CI: 7.8-10.3) reported ever having undergone a screen- ing test for cervical cancer.

The highest prevalence of testing among women was 45-59 years, with 12.4% (95% CI: 8.9-15.8) and the lowest was in the age group 60-69 years with 3.8% (95% CI: 1.7-5.9) (**Table 50**).

**Table 50: Percentage of female respondents who have ever had a screening test for cervical cancer among all female respondents**

| Age Group | Women | | |
|---|---|---|---|
| (years) | n | % ever tested | 95% CI |
| 18-29 | 402 | 5.7 | 3.2-8.2 |
| 30-44 | 1441 | 10.3 | 8.6-12.1 |
| 45-59 | 820 | 12.4 | 8.9-15.8 |
| 60-69 | 458 | 3.8 | 1.7-5.9 |
| **18-69** | **3121** | **9.0** | **7.8-10.3** |

The percentage of female respondents aged 30-49 years that had ever undergone screening for cervical cancer was 11.7% (955 CI: 9.8-13.6) (**Table 51**).

**Table 51: Percentage of female respondents aged 30-49 years who have ever had a screening test for cervical cancer among all female respondents aged 30-49 years**

| Age Group | Women | | |
|---|---|---|---|
| (years) | n | % ever tested | 95% CI |
| 30-49 | 1752 | 11.7 | 9.8-13.6 |

## 2.1.12 Oral health

**Box 12:** Oral Health

- 2.7% reported to have 10-19 natural teeth and only 0.3% of them reported to have 1-9 teeth.
- Among the respondents of all ages, 11.4% self-reported to have consulted a dentist during the last 12 months and **57.1%** had never received dental care
- Pain or trouble with teeth or gums was reported by 92.8% of all the respondents who ever visited a dentist as the main reason for their last visit.
- **66.9%** of participants cleaned their teeth at least once a day and 19.3% did so at least twice a day.
- Among the respondents who cleaned their teeth, **86.1%** were using toothpaste and 81.5% of the respondents who reported that they use toothpaste, 81.7% reported to use the toothpaste containing fluoride.
- The main tool to clean teeth is toothbrush (by 88.0% who clean their teeth), followed by wooden toothpicks (32.6%)

Overall, 96.9% respondents reported that they have at least 20 natural teeth. Moreover, 2.7% reported to have 10-19 natural teeth and only 0.3% of them reported to have 1-9 teeth (**Table 52**).

**Table 52: Percentage of respondents with natural teeth**

| Percentage of respondents with natural teeth | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Both Sexes | | | | | | | | |
| Age Group (years) | n | % No natural teeth | 95% CI | %1 - 9 natu-ralteeth | 95% CI | % 10 - 19 naturalteeth | 95% CI | % ≥ 20 naturalteeth | 95% CI |
| 18-29 | 1270 | 0.0 | 0.0-0.0 | 0.2 | 0.0-0.5 | 0.9 | 0.3-1.6 | 98.9 | 98.2-99.6 |
| 30-44 | 2291 | 0.0 | 0.0-0.0 | 0.1 | 0.0-0.3 | 2.3 | 1.5-3.0 | 97.6 | 96.9-98.4 |
| 45-59 | 1254 | 0.0 | 0.0-0.0 | 0.4 | 0.0-0.8 | 5.7 | 3.8-7.7 | 93.8 | 91.8-95.8 |
| 60-69 | 664 | 0.4 | 0.0-1.0 | 1.6 | 0.4-2.8 | 10.0 | 7.3-12.7 | 87.9 | 84.9-91.0 |
| **18-69** | **5479** | **0.0** | **0.0-0.1** | **0.3** | **0.1-0.5** | **2.7** | **2.1-3.4** | **96.9** | **96.3-97.6** |

Among the respondents of all ages, 11.4% self-reported to have consulted a dentist during the last 12 months. The data showed that there was a statistically significant difference between both sexes in consulting dentists, with 13.4% of women (95% CI: 11.9-14.8) compared to 9.5% of men (95% CI: 7.8-11.2) (**Table 53**).

**Table 53: Percentage of respondents having seen a dentist during the past 12 months, by sex and age group**

| Percentage of respondents having seen a dentist during the past 12 months | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % having seen a den-tist during the past 12 months | 95% CI | n | % having seen a den-tist during the past 12 months | 95% CI | n | % having seen a den-tist during thepast 12 months | 95% CI |
| 18-29 | 497 | 8.6 | 5.2-11.9 | 813 | 11.3 | 8.7-13.9 | 1310 | 9.9 | 7.8-12.0 |
| 30-44 | 936 | 9.7 | 7.6-11.7 | 1447 | 14.4 | 12.4-16.5 | 2383 | 12.1 | 10.6-13.6 |
| 45-59 | 468 | 11.3 | 7.9-14.7 | 825 | 16.1 | 13.0-19.2 | 1293 | 13.9 | 11.6-16.1 |
| 60-69 | 229 | 11.0 | 6.4-15.7 | 461 | 14.5 | 10.4-18.6 | 690 | 12.8 | 9.8-15.8 |
| **18-69** | **2130** | **9.5** | **7.8-11.2** | **3546** | **13.4** | **11.9-14.8** | **5676** | **11.4** | **10.3-12.6** |

Fifty seven percent (57.1%) of respondents had never received dental care; and men were more likely not to receive dental care as women. However, no statistically significant difference was observed in receiving dental care between men and women (61.6%, 95% CI: 58.8-64.5 and 52.6%, 95% CI: 50.1-55.1, respectively) (**Table 54**).

**Table 54:** Percentage of respondents who have never received dental care, by sex and age group

| Percentage of respondents who have never received dental care | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % Never received dental care | 95% CI | n | % never received dental care | 95% CI | n | % never received dental care | 95% CI |
| 18-29 | 497 | 72.7 | 67.5-77.8 | 813 | 63.8 | 59.8-67.7 | 1310 | 68.4 | 65.1-71.6 |
| 30-44 | 936 | 56.3 | 52.5-60.1 | 1447 | 49.3 | 46.3-52.4 | 2383 | 52.8 | 50.3-55.3 |
| 45-59 | 468 | 45.7 | 40.6-50.8 | 825 | 37.9 | 33.6-42.2 | 1293 | 41.5 | 38.1-45.0 |
| 60-69 | 229 | 46.6 | 38.9-54.4 | 461 | 33.9 | 28.4-39.4 | 690 | 40.3 | 35.6-44.9 |
| **18-69** | **2130** | **61.6** | **58.8-64.5** | **3546** | **52.6** | **50.1-55.1** | **5676** | **57.1** | **55.1-59.1** |

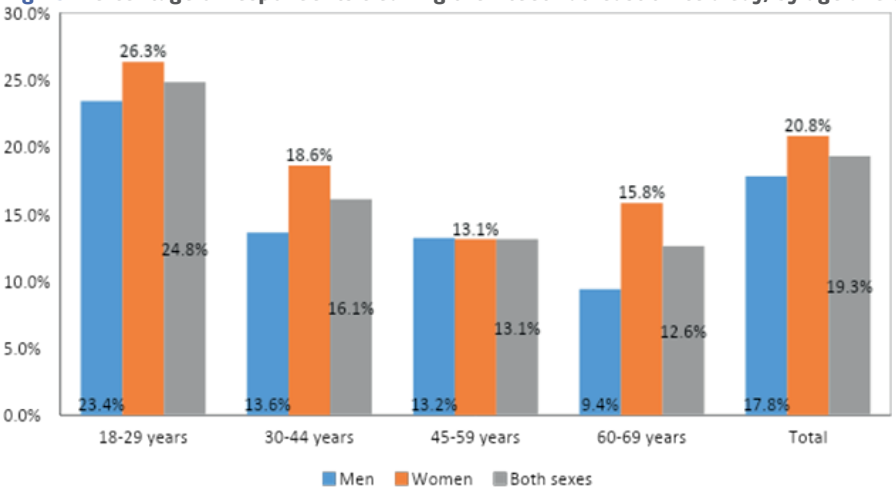
Pain or trouble with teeth or gums was reported by 92.8% of all the respondents who ever visited a dentist as the main reason for their last visit. Of them, 5% visited a dentist for follow up treatment, 0.8% were for consultation or seeking advice while 0.7% were for routine check-up treatment (**Table 55**).

**Table 55:** Main reasons for last visit to the dentist among those who ever visited a dentist, by sex and age group

| Main reason for last visit to the dentist among those who ever visited a dentist | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Both Sexes | | | | | | | | | | |
| | n | % Consul-tation/ advice | 95% CI | % Pain or trouble withteeth or gums | 95% CI | % Follow-up | 95% CI | % Routine check-up treat-ment | 95%CI | % Other | 95%CI |
| 18-29 | 439 | 0.7 | 0.0-1.3 | 92.7 | 89.4-96.1 | 4.4 | 1.8-7.0 | 0.7 | 0.0-1.5 | 1.5 | 0.0-3.7 |
| 30-44 | 1119 | 0.5 | 0.1-0.9 | 93.1 | 91.2-95.0 | 5.5 | 3.7-7.4 | 0.6 | 0.1-1.0 | 0.3 | 0.0-0.6 |
| 45-59 | 739 | 1.1 | 0.0-2.2 | 92.3 | 89.8-94.8 | 5.0 | 3.1-7.0 | 1.3 | 0.1-2.6 | 0.3 | 0.0-0.7 |
| 60-69 | 428 | 1.6 | 0.1-3.1 | 92.9 | 89.8-96.0 | 5.3 | 2.6-8.0 | 0.2 | 0.0-0.6 | 0.0 | 0.0-0.0 |
| **18-69** | **2725** | **0.8** | **0.4-1.2** | **92.8** | **91.2-94.4** | **5.0** | **3.6-6.4** | **0.7** | **0.3-1.2** | **0.7** | **0.0-1.4** |

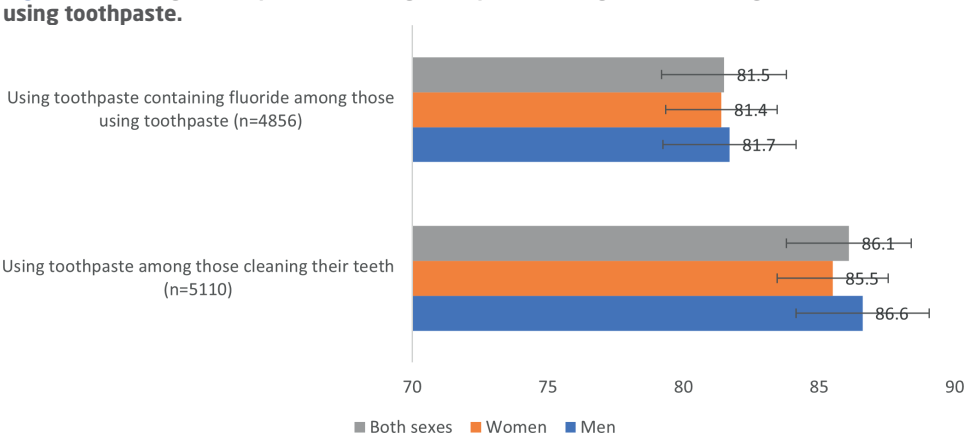
The results showed that 66.9% (95% CI: 64.8-69.0) of participants cleaned their teeth at least once a day, with- out any statistical difference between men (65.7%, 95%CI: 62.8-68.6) and women (68.1%, 95%CI: 65.7-70.5); while 19.3% did so at least twice a day, without any statistical difference between men (17.8%, 95%CI: 15.0- 20.6) and women (20.8%, 95%CI: 18.8-22.8). It was surprising to find out that tooth cleaning decreases as the age increases, for both sexes (**Figure 25**).

**Fig 25:** Percentage of respondents cleaning their teeth at least twice a day, by age and sex



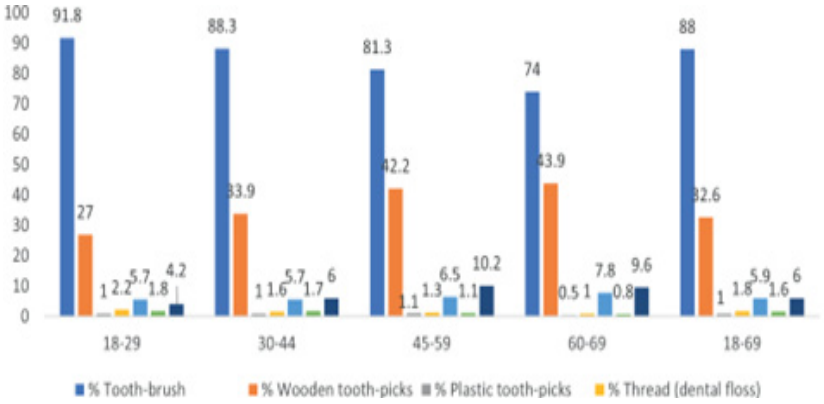
Among the respondents who cleaned their teeth, 86.1% (95% CI: 84.7-87.5) were using toothpaste and no significant difference between men and women. To clean their teeth, 81.5% (95%CI: 79.8-83.3) of the respondents who reported that they use toothpaste, reported to use the toothpaste containing fluoride with 81.7% (95%CI: 79.3-84.2) of men and 81.4% (95%CI: 79.3-83.4) of women (**Figure 26**).

**Fig 26: Percentage of respondents using toothpaste among those cleaning their teeth and using toothpaste containing fluoride among those using toothpaste.**



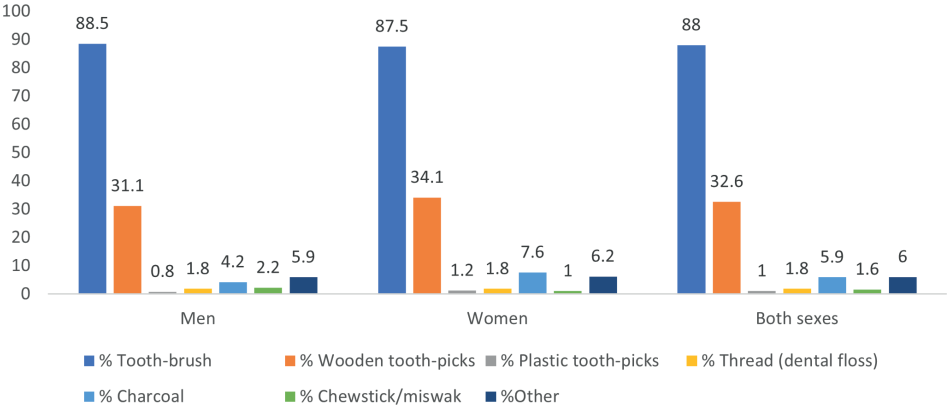

Among all the respondents who reported to clean their teeth, 88.0% (95% CI: 86.6-89.4) of them reported to use toothbrush –higher in 18-29 age group and lower in 60-69 age group-, 32.6% (95% CI: 30.6-34.6) were using wooden toothpicks –higher in 60-69 age group and lower in 18-29 age group-, 1.0%(95% CI: 0.6-1.3) were using plastic toothpicks, 1.8% (95% CI: 1.2-2.4) were using thread (dental floss), 5.9% (95% CI: 5.0-6.8) were using charcoal and 1.6% (95%CI : 1.1-2.2) were using chewstick/miswak (**Figure 27**).

**Fig 27: Percentage of respondents using various tools to clean teeth, by age category**




Considering sex, there was no variability between men and women regarding the use of toothbrush and wooden toothpicks, the two main tools used to clean teeth (**Figure 28**).

**Fig 28: Percentage of respondents using various tools to clean teeth, by age category**



## 2.1.13 Violence and Injury

**Box 13:** Violence and Injury

- 30.3% of the respondents of all ages reported that they do not always use the helmet.
- 6.7% of the participants reported to have been involved in road traffic crashes during the past 12 months, whereby 43.9% (n=275) of them were seriously injured as a result of road traffic crash.
- 10.3% of them self-reported to have been seriously injured during a non-road traffic accident.
- 79.5% of the drivers or passengers of a motor vehicle did not always use a seat belt or were otherwise unrestrained during the past 30 days.
- A higher proportion of serious injured 12 months prior to the survey made it at home (31%), followed by School/ workplace (22.2%), road-Street-Highway (21.5%) and farms (20.3%).
- 14.5% of respondents in all ages have been seriously injured due to causes other than road traffic crashes (46.2% were seriously injured due to falls, 33.3% due to cuts, 2.7% due to poisonings and 2.6% due to burns).

Drivers or passengers of a motor vehicle were asked about the frequency of using a seat belt during 30 days prior to the survey. The survey found that 79.5% (85%CI: 76.3-82.8) of the respondents did not always use a seat belt or were otherwise unrestrained during the past 30 days, without any statistical difference between men (77.1%, 95%CI: 72.6-81.5) and women (82.1%, 95%CI: 78.6-85.5). The survey did not find any statistical difference of not always using a seat belt in terms of age categories (**Table 56)**.

**Table 56: Percentage of drivers or passengers of a motor vehicle who did not always use a seat belt or were otherwise unrestrained during the past 30 days, by sex and age**

| Percentage of drivers or passengers not always using a seat belt | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % Not always using seatbelt | 95% CI | n | % Not always using seat belt | 95% CI | n | % Not always using seatbelt | 95% CI |
| 25-34 | 219 | 83.1 | 76.4-89.8 | 349 | 80.8 | 75.5-86.2 | 568 | 82.0 | 77.4-86.6 |
| 35-44 | 369 | 73.4 | 67.5-79.2 | 563 | 83.9 | 80.0-87.9 | 932 | 78.6 | 74.8-82.4 |
| 45-54 | 185 | 64.0 | 56.4-71.6 | 283 | 81.3 | 75.3-87.3 | 468 | 72.8 | 67.4-78.1 |
| 55-64 | 66 | 75.0 | 60.8-89.2 | 165 | 85.4 | 79.2-91.6 | 231 | 80.7 | 73.5-88.0 |
| **25-64** | **839** | **77.1** | **72.6-81.5** | **1360** | **82.1** | **78.6-85.5** | **2199** | **79.5** | **76.3-82.8** |

Drivers and passengers of motorcycles or motor-scooters were asked about the frequency of using the helmet, and 30.3% of the respondents of all ages reported that they do not always use the helmet with 30.0% of men and 30.5% of females (**Table 57**).

**Table 57: Percentage of drivers or passengers of a motorcycle or motor-scooter not always using a helmet**

| Percentage of drivers or passengers of a motorcycle or motor-scooter not always using a helmet | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % Not alwaysusing helmet | 95% CI | n | % Not alwaysusing helmet | 95% CI | n | % Not always using helmet | 95% CI |
| 25-34 | 290 | 28.9 | 22.7-35.1 | 439 | 29.3 | 24.0-34.6 | 729 | 29.1 | 25.1-33.1 |
| 35-44 | 503 | 31.7 | 26.8-36.7 | 679 | 32.3 | 27.4-37.2 | 1182 | 32.0 | 28.4-35.6 |
| 45-54 | 224 | 29.4 | 21.9-36.9 | 333 | 27.7 | 21.9-33.5 | 557 | 28.6 | 23.7-33.4 |
| 55-64 | 82 | 33.2 | 21.0-45.5 | 166 | 40.0 | 30.2-49.9 | 248 | 36.7 | 29.4-44.0 |
| **25-64** | **1099** | **30.0** | **26.2-33.9** | **1617** | **30.5** | **27.1-33.9** | **2716** | **30.3** | **27.6-32.9** |

Of all the respondents in all ages, 6.7% of them reported to have been involved in road traffic crashes during the past 12 months. Men were more likely to be involved in road traffic crashes than women with a statistically significant difference of 9.7%, 95% CI: 7.7-11.7 and 3.7%, 95% CI: 2.7-4.7 respectively (**Table 58**).

**Table 58: Percentage of respondents involved in a road traffic crash during the past 12 months, by sex and age group**

| Percentage of respondents involved in a road traffic crash during the past 12 months | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % Involved in road traffic crashes | 95% CI | n | % Involved in road traffic crashes | 95% CI | n | % Involvedin road traffic crashes | 95% CI |
| 25-34 | 496 | 12.7 | 9.1-16.2 | 809 | 4.5 | 2.6-6.4 | 1305 | 8.7 | 6.7-10.7 |
| 35-44 | 936 | 8.2 | 5.8-10.5 | 1443 | 3.3 | 2.2-4.5 | 2379 | 5.7 | 4.5-7.0 |
| 45-54 | 468 | 6.6 | 3.6-9.5 | 822 | 3.0 | 1.6-4.3 | 1290 | 4.7 | 3.1-6.3 |
| 55-64 | 229 | 3.5 | 0.7-6.2 | 461 | 1.9 | 0.6-3.1 | 690 | 2.7 | 1.2-4.2 |
| **25-64** | **2129** | **9.7** | **7.7-11.7** | **3535** | **3.7** | **2.7-4.7** | **5664** | **6.7** | **5.6-7.8** |

Among the respondents who were involved in road traffic crashes, 43.9% of them were seriously injured as a result of road traffic crash (**Table 59**).

**Table 59: Percentage of respondents seriously injured as a result of road traffic crash among those involved in a road traffic crash**

| Percentage of respondents seriously injured as a result of road traffic crash among those involved in a roadtraffic crash | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % Seriously injured | 95% CI | n | % Seriously injured | 95% CI | n | % Seriously injured | 95% CI |
| 25-34 | 62 | 62 | 29.2-57.5 | 29 | 43.0 | 21.9-64.1 | 91 | 43.2 | 31.1-55.4 |
| 35-44 | 72 | 72 | 33.3-56.6 | 45 | 44.3 | 28.8-59.9 | 117 | 44.8 | 35.4-54.1 |
| 45-54 | 27 | 27 | 18.9-62.7 | 22 | 35.0 | 12.6-57.5 | 49 | 38.8 | 23.5-54.2 |
| 55-64 | 8 | 8 | 40.9-99.1 | 10 | 81.6 | 57.0-100.0 | 18 | 74.1 | 51.3-96.8 |
| **25-64** | **169** | **169** | **35.3-52.9** | **106** | **43.5** | **31.2-55.8** | **275** | **43.9** | **36.4-51.5** |

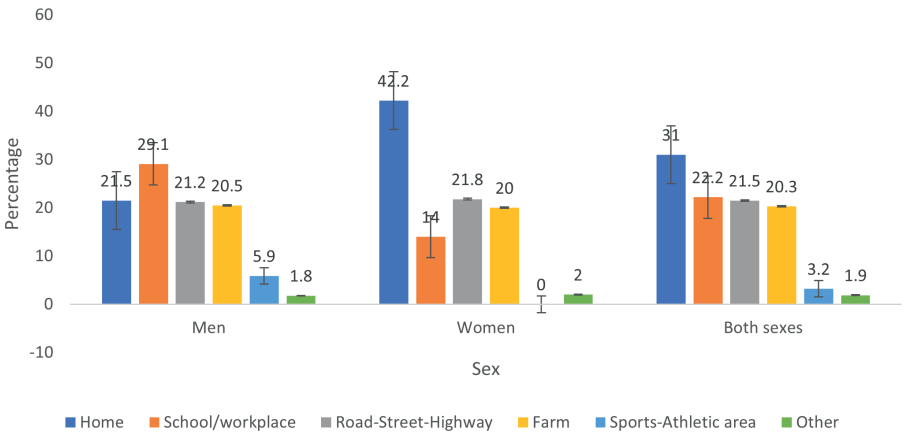
Of all the respondents in all ages, 10.3% of them self-reported to have been seriously injured during a non- road traffic accident. Men accounted for 11.2%, 95% CI: 9.4-13.0 while women accounted for 9.3%, 95% CI: 7.9-10.8 (**Table 60**).

**Table 60: Percentage of respondents seriously injured in a non-road traffic accident**

| Percentage of respondents seriously injured in a non-road traffic accident | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % Seriously injured | 95% CI | n | % Seriously injured | 95% CI | n | % Seriously injured | 95% CI |
| 25-34 | 496 | 11.8 | 8.4-15.1 | 813 | 9.6 | 7.2-12.1 | 1309 | 10.7 | 8.7-12.8 |
| 35-44 | 934 | 11.2 | 9.0-13.5 | 1442 | 8.6 | 6.3-10.9 | 2376 | 9.9 | 8.3-11.5 |
| 45-54 | 467 | 10.1 | 6.8-13.4 | 823 | 9.9 | 7.2-12.6 | 1290 | 10.0 | 7.7-12.3 |
| 55-64 | 228 | 9.3 | 4.7-13.9 | 460 | 9.4 | 6.4-12.3 | 688 | 9.3 | 6.5-12.2 |
| **25-64** | **2125** | **11.2** | **9.4-13.0** | **3538** | **9.3** | **7.9-10.8** | **5663** | **10.3** | **9.0-11.5** |

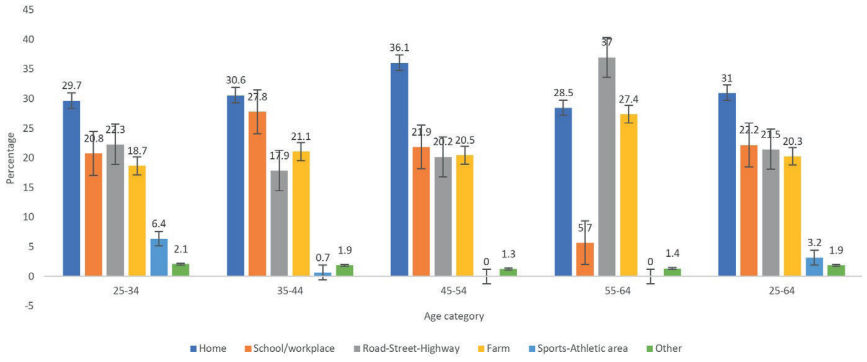
Among 535 respondents who reported they were seriously injured in 12 months prior to the survey, the higher proportion made it at home (31%, 95%CI: 25.7-36.3), followed by School/workplace (22.2%, 95%CI: 16.7-27.8), Road-Street-Highway (21.5%, 95%CI: 16.6-26.3) and farms (20.3%, 95%CI: 15.5-25.0) (**Figure 29**).

**Fig 29: Location of serious accidental injuries among those respondents who were seriously injured in the last 12 months, by sex**



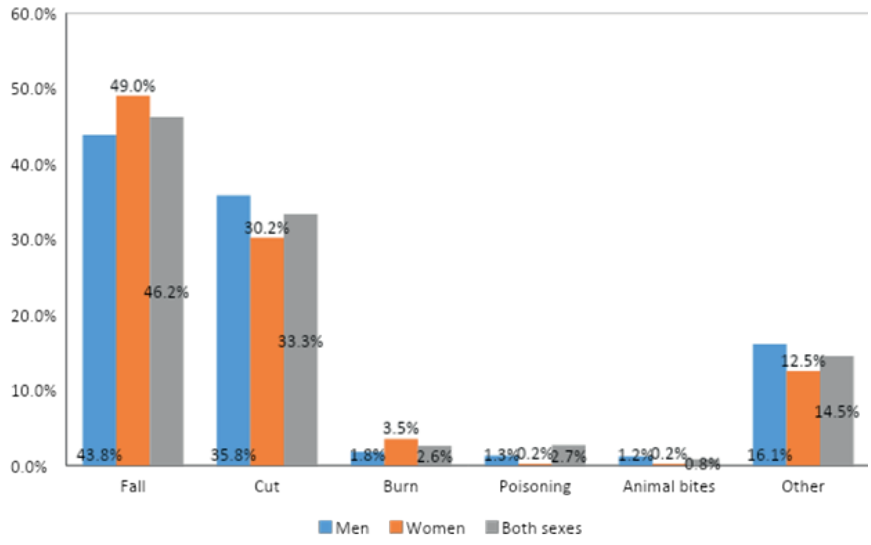

Home injuries were more prevalent among those aged 45-54 years, road/street/highway and farm injuries were more prevalent in the age group 55-64 years while school/workplace injuries were more prevalent in age the age group 35-44 years (**Figure 30**).

**Fig 30: Location of serious accidental injuries among those respondents who were seriously injured in the last 12 months, by sex**




Fourteen-point five percent respondents in all ages have been seriously injured due to causes other than road traffic crashes. Of them, 46.2% (95% CI: 40.6-51.7) were seriously injured due to falls, 33.3% (95% CI: 28.0-38.5) due to cuts, 2.7% (95% CI: 0.7-4.6) due to poisonings and 2.6% (95% CI: 0.8-4.4) due to burns (**Figure 31**).

**Fig 31: Percentage of respondents who were seriously injured other than road traffic crashes, by sex**

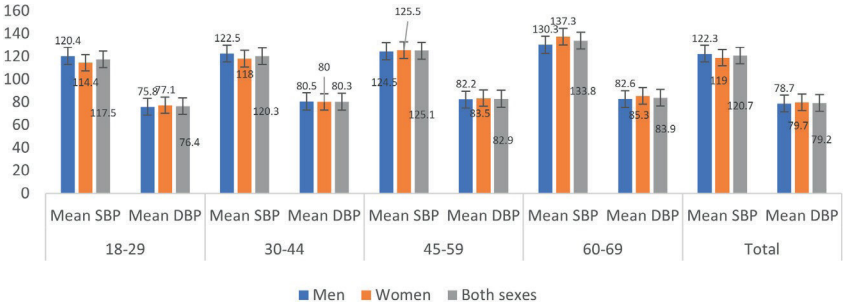


## 2.2 STEP 2: Physical measurements

### 2.2.1 Blood pressure measurement

Physical blood pressure measurements were taken, and respondents were asked about prescription of medication to treat high blood pressure. Hypertension as a risk factor for NCD was assessed by means of blood pressure measurement. Mean SBP in the study population was 120.7 mmHg (95% CI: 120.2-121.2); 122.3 mmHg for men (95% CI: 121.7–123.0) and 119 mmHg (95% CI: 118.4–119.6) for women. Mean DBP was 79.2 mmHg (95% CI: 78.9–79.6) in the study population; 78.7 mmHg (95% CI: 78.2–79.3) in men and 79.7 mmHg (95% CI: 79.3–80.1) in women (Annex 32). Both SBP and DBP were found to increase with age for both sexes. In the study population, the SBP in the age group 60–69 years was approximately 16.3 higher than in the age group 18–29 years, and the difference in DBP between the same age groups was about 7.1% (**Figure 32**).

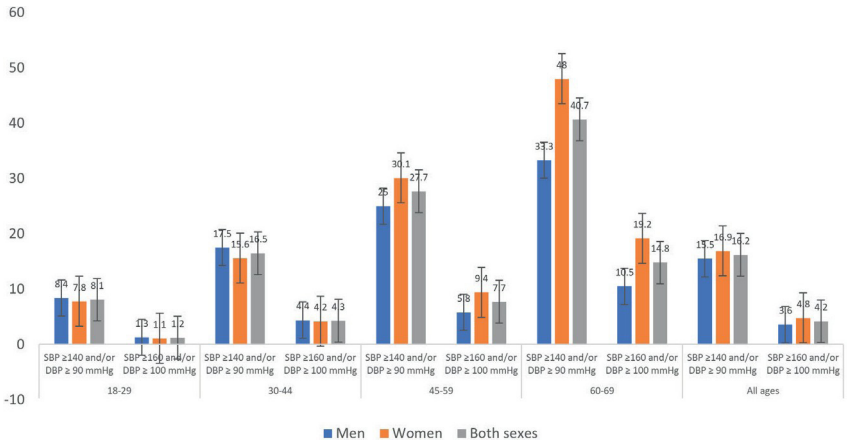
**Fig 32: Mean blood pressure among all respondents, including those currently on medication for raised blood pressure**




Survey participants with a systolic blood pressure above 139 mmHg and or diastolic blood pressure greater than 89 mmHg were considered having hypertension. The prevalence of hypertension in the study population was 16.2% (95% CI: 15.0–17.4); 15.5% (95% CI: 13.6–17.3) for men and 16.9% (95% CI: 15.4–18.4) for women (Figure 33).

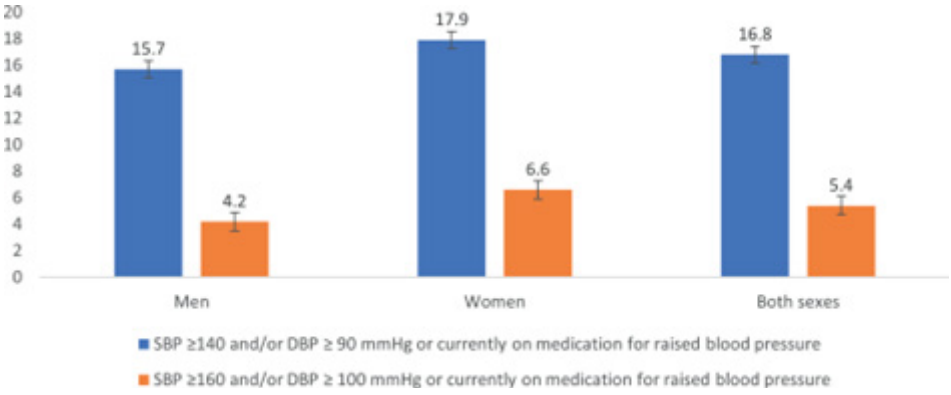
There was a statistically significant difference between ages, with an increase in prevalence from 8.1% (95% CI: 6.5–9.8) in the younger age group, to 40.7% (95% CI: 36.0–47.4) in the older age group. The disaggregated data also indicate that for men the hypertension appears to come at earlier age than women. Data shows that women on average have greater hypertension prevalence than men (16.9%, 95% CI: 15.4–18.4) versus 15.5% (95% CI: 13.6–17.3) with a specific increase from age 45. The same distribution characteristics mentioned above were observed with SBP≥160 and/or DBP≥ 100 mmHg, considered as severe hypertension. The prevalence of severe hypertension in the study population was 4.2% (95% CI: 3.6–4.2); 3.6% (95% CI: 2.7–4.5) for men and 4.8% (95% CI: 4.1–5.5) for women (**Figure 33**).

**Fig 33: Percentage of respondents with raised blood pressure, by sex and age group**



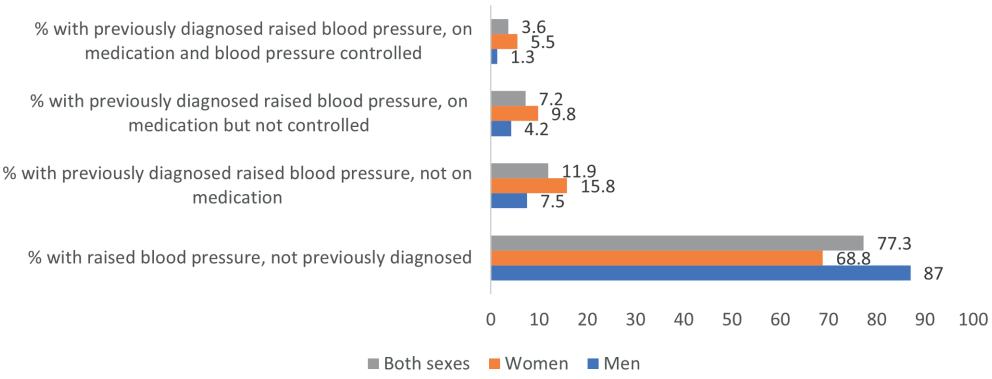
The percentage of those with an SBP of ≥140 mmHg and/or a DBP of ≥90 mmHg, or taking medication for raised blood pressure was 16.8% (95% CI: 15.6–18.0); 15.7% (95% CI: 13.8–17.5) for men and 17.9% (95% CI: 16.4–19.4) for women (Figure 34). For those with an SBP of ≥160 mmHg and/or a DBP of ≥100 mmHg, or taking medication for raised blood pressure, the percentage was 5.4% (95% CI: 4.7–6.0); 4.2% (95% CI: 3.2–5.1) for men and 6.6% (95% CI: 5.7–7.4) for women (**Figure 34**).

**Fig 34: Percentage of respondents with raised blood pressure or currently on medication for raised blood pressure**




Among respondents with raised blood pressure (SBP ≥ 140 and/or DBP ≥ 90 mmHg) or on medication for raised blood pressure, a total of 77.3% (95% CI: 74.2–80.4) were not previously diagnosed. Moreover, 11.9% (95% CI: 9.4–14.4) of those previously diagnosed were not taking medication and only 3.6% (95% CI: 2.1–5.0) who did have controlled blood pressure. The percentage of respondents with controlled blood pressure was higher among women (5.5%, 95% CI: 3.0–8.0) than among men (1.3%, 95% CI: 0.3–2.4). However, women had a higher proportion of individuals with hypertension not taking medication (15.8%, 95% CI: 12.1–19.5) in comparison with (7.5%, 95% CI: 4.3-10.6) (**Figure 35**).

**Fig 35: Raised blood pressure diagnosis, treatment, and control among those with raised blood pressure (SBP ≥ 140 and/or DBP ≥ 90 mmHg) or on medication for raised blood pressure**



## 2.2.2 Anthropometric measurements

**Box 14:** Anthropometric measurements

- Mean SBP among the Rwandan population was 120.7 mmHg, with the higher values found in men (122.3 mmHg) compared to 119 mmHg for women. Mean DBP was 79.2 mmHg, with 78.7 mmHg in men and 79.7 mmHg for women. Both SBP and DBP were found to increase with age for both sexes.
- Prevalence of hypertension among Rwandans adult population was 16.2%, with a slight difference between the sexes; 15.5% for men and 16.9% for women..
- Among those previously diagnosed as having hypertension, 88.1% were taking medication but only 3.6% were controlling their blood pressure.
- Mean body weight and height of Rwandan men was 60.4 kg and 167 cm, respectively. For women, mean body weight was 58.9 kg and height was 159 cm.
- Mean BMI in the study population was 22.4; higher for women compared to men, 23.3 and 21.6 respectively.
- Almost one in five individuals (18.6%) were overweight or obese, with a much higher prevalence in women (26%).
- The populations of both sexes were found to be at the lower limits of the obesity category, according to their WHRs.

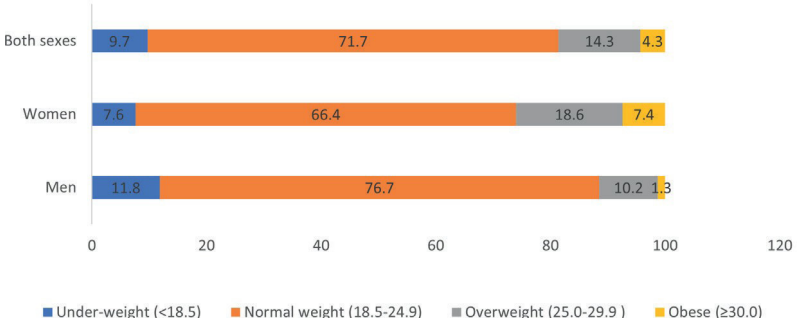
Anthropometric measurements such as height, weight, waist and hip circumference were used to calculate Body Mass Index (BMI) and mean WHR in order to estimate the prevalence of overweight and obesity in the study population (excluding pregnant women) by age and sex. BMI is defined as a person's weight in kilograms divided by the square of their height (kg/m²). Male respondents were on average 167 cm tall (95% CI: 166.7–167.6) and weighed on average 60.4 kg (95% CI: 59.8–60.9), and females were on average 159.0 cm tall (95% CI: 158.6–159.4) and weighed on average 58.9 kg (95% CI: 58.3–59.4). The computed BMI for the study population was 22.4 (95% CI: 22.3–22.5); 21.6 (95% CI: 21.4–21.8) for men and 23.3 (95% CI: 23.1–23.4) for women (**Table 61**). We noticed that there were no significant statistical differences between both sexes and according to age groups.

**Table 61: Mean BMI (kg/m²), by sex and age group**

| Mean BMI (kg/m2) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group | Men | | | Women | | | Both Sexes | | |
| (years) | n | Mean | 95% CI | n | Mean | 95% CI | n | Mean | 95% CI |
| 18-29 | 495 | 21.2 | 20.9-21.5 | 752 | 23.0 | 22.7-23.3 | 1247 | 22.1 | 21.8-22.3 |
| 30-44 | 933 | 22.1 | 21.9-22.3 | 1351 | 23.8 | 23.6-24.1 | 2284 | 23.0 | 22.8-23.1 |
| 45-59 | 466 | 21.8 | 21.3-22.2 | 819 | 23.2 | 22.8-23.6 | 1285 | 22.5 | 22.2-22.8 |
| 60-69 | 228 | 21.2 | 20.4-22.0 | 459 | 22.4 | 21.9-23.0 | 687 | 21.8 | 21.3-22.3 |
| **18-69** | **2122** | **21.6** | **21.4-21.8** | **3381** | **23.3** | **23.1-23.4** | **5503** | **22.4** | **22.3-22.5** |

In adults, WHO defines four categories for BMI: underweight (BMI <18.5), normal weight (BMI 18.5–24.9), overweight (BMI 25.0–29.9) and obese (BMI ≥30.0). In this STEPS survey, 9.7% (95% CI: 8.4–11.0) of all participants were under-weighted, with a higher proportion in men. The prevalence of overweight stood at 14.3% with a higher prevalence of 18.6% (95% CI: 16.6–20.5) in women. Similarly, women had a significantly higher prevalence of BMI ≥30.0 (7.4%, 95% CI: 6.3–8.5) than men (1.3%, 95% CI: 0.8–1.8) (**Figure 36**).

**Fig 36: BMI classifications, excluding pregnant women**




A total of 18.6% (95%CI: 17.1-20.1) of all respondents (both sexes) had a BMI greater than 25 and thus fell into the overweight or obese categories. Statistically significant differences were noticed between the sexes. The combined percentages of overweight and obese categories were higher in women than in men (26% (95% CI: 23.9-28.1 versus 11.5% (95% CI: 9.7-13.3) (**Table 62**).

**Table 62: Prevalence of BMI≥25, by sex and age group**

| BMI≥25 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % BMI≥25 | 95% CI | n | % BMI≥25 | 95% CI | n | % BMI≥25 | 95% CI |
| 18-29 | 495 | 7.4 | 4.6-10.1 | 752 | 22.7 | 19.1-26.3 | 1247 | 14.6 | 12.3-16.9 |
| 30-44 | 933 | 16.5 | 13.6-19.3 | 1351 | 31.4 | 28.4-34.5 | 2284 | 23.8 | 21.7-25.9 |
| 45-59 | 466 | 14.7 | 10.7-18.8 | 819 | 26.7 | 22.7-30.7 | 1285 | 21.1 | 18.0-24.2 |
| 60-69 | 228 | 9.3 | 4.0-14.6 | 459 | 20.1 | 15.7-24.5 | 687 | 14.7 | 11.2-18.1 |
| **18-69** | **2122** | **11.5** | **9.7-13.3** | **3381** | **26.0** | **23.9-28.1** | **5503** | **18.6** | **17.1-20.1** |

Waist-Hip Ratio (WHR) was computed for all respondents (excluding pregnant women), using measurements of waist and hip circumferences. WHO defines obesity as having a WHR above 0.90 for males and above 0.86 for females. Results showed almost no difference between sexes with a WHR equal to 0.9 (95% CI: 0.9-0.9) for men and 0.8 (95% CI: 0.8-0.8) for women (**Table 63**). Similarly, no differences were found between the various age groups for each sex in terms of mean WHR. The values for both sexes in the study population were found to be at the lower limit of obesity.

**Table 63: Mean WHR, by sex and age group**

| Mean waist / hip ratio | | | | | | |
|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | |
| | n | Mean | 95% CI | n | Mean | 95% CI |
| 18-29 | 495 | 0.8 | 0.8-0.9 | 751 | 0.8 | 0.8-0.8 |
| 30-44 | 935 | 0.9 | 0.9-0.9 | 1353 | 0.8 | 0.8-0.9 |
| 45-59 | 467 | 0.9 | 0.9-0.9 | 819 | 0.9 | 0.9-0.9 |
| 60-69 | 229 | 0.9 | 0.9-0.9 | 460 | 0.9 | 0.9-0.9 |
| **18-69** | **2126** | **0.9** | **0.9-0.9** | **3383** | **0.8** | **0.8-0.8** |

## 2.3 STEP 3: Biochemical measurements

**Box 15:** Biochemical measurements

- Mean fasting blood glucose level was 83.7 mg/dl and was found to increase with age for both sexes.
- Almost 1 in 20 people (4.7%) were found with IFG and thus a higher risk for CVD, with a higher prevalence of this in women than in men.
- Raised blood glucose and diabetes was found in 2.9% of study participants, and the proportion was found to be three times higher in the older age group than among younger people.
- Mean blood cholesterol level was 120.4 mg/dl and tended to increase with age in both sexes.
- The prevalence of high-risk blood cholesterol level in the population was found to be 3%.
- Among people who reported themselves as smokers, the prevalence of positive Cotinine 10 ng/ mL was 14.4% and the prevalence of positive Cotinine 200 ng/mL was 6.6%.
- Among people who reported themselves as non-smokers, the prevalence of positive Cotinine 10 ng/mL was 9% and the prevalence of positive Cotinine 200 ng/mL was 3.9%.
- The majority of women (68.7%) and almost half of men (42.8%) had a decreased level of HDL cholesterol, resulting in them being at higher risk for CVDs..

### 2.3.1 Blood glucose measurements

Blood capillary sample was taken from participants who fasted for 12 hours. The testing was performed using a Cardiogenic analyzer machine, which used test strips for both blood glucose and lipid profile (total Cholesterol and HDL Cholesterol).The survey results indicated that the mean fasting blood glucose, including among those currently on medication for raised blood glucose was 83.7 mg/dl (95% CI: 82.2-85.3) and there was no statistically significant difference between both sexes. The mean fasting glucose tends to increase with age but without a statistically significant difference (**Table: 64**).

**Table 64: Mean fasting blood glucose (mg/dl)**

| Mean fasting blood glucose (mg/dl) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group | Men | | | Women | | | Both Sexes | | |
| (years) | n | Mean | 95% CI | n | Mean | 95% CI | n | Mean | 95% CI |
| 18-29 | 444 | 82.1 | 79.8-84.4 | 745 | 81.4 | 79.6-83.1 | 1189 | 81.8 | 80.2-83.4 |
| 30-44 | 849 | 82.1 | 80.4-83.8 | 1330 | 84.2 | 82.2-86.2 | 2179 | 83.2 | 81.9-84.5 |
| 45-59 | 422 | 84.1 | 80.9-87.3 | 771 | 93.7 | 83.2-104.1 | 1193 | 89.3 | 83.3-95.3 |
| 60-69 | 210 | 83.4 | 79.0-87.8 | 427 | 87.8 | 83.6-92.0 | 637 | 85.7 | 82.4-88.9 |
| **18-69** | **1925** | **82.5** | **81.1-83.9** | **3273** | **84.9** | **82.7-87.1** | **5198** | **83.7** | **82.2-85.3** |

Impaired fasting glycaemia (IFG) is defined as either plasma venous value: ≥6.1mmol/L (110mg/dl) and <7.0mmol/L (126mg/dl) or capillary whole blood value: ≥5.6mmol/L (100mg/dl) and <6.1mmol/L (110mg/dl).

The prevalence of participants with IFG was analyzed based on the above-mentioned criteria. 4.7% (95% CI: 3.8-5.5) of the study population was found to have IFG. There was no significant difference between sexes as it was detected in 4.3% of males (95% CI: 3.1-5.5) and 5% of females (95% CI: 3.9-6.0). Levels of IFG were found to vary among age groups but without a statistically significant difference (**Table 65**).

**Table 65: Prevalence of impaired fasting glycemia**

| Impaired Fasting Glycaemia | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % | 95% CI | n | % | 95% CI | n | % | 95% CI |
| 18-29 | 444 | 4.3 | 2.2-6.4 | 745 | 4.1 | 2.5-5.8 | 1189 | 4.2 | 2.8-5.6 |
| 30-44 | 849 | 4.0 | 2.5-5.5 | 1330 | 5.0 | 3.7-6.3 | 2179 | 4.5 | 3.5-5.5 |
| 45-59 | 423 | 4.6 | 2.1-7.0 | 771 | 6.2 | 4.0-8.5 | 1194 | 5.5 | 3.7-7.2 |
| 60-69 | 210 | 5.9 | 2.4-9.4 | 428 | 6.7 | 4.0-9.5 | 638 | 6.3 | •4.1-8.6 |
| **18-69** | **1926** | **4.3** | **3.1-5.5** | **3274** | **5.0** | **3.9-6.0** | **5200** | **4.7** | **3.8-5.5** |

Raised blood glucose is defined as either plasma venous value: ≥ 7.0 mmol/L (126 mg/dl) or capillary whole blood value: ≥ 6.1 mmol/L (110 mg/dl). The percentage of Rwandans with raised fasting blood glucose or currently on medication for raised blood glucose was 2.9% (95% CI: 2.1-3.8). Although the prevalence of raised blood glucose was higher in females, 3.3% (95% CI: 2.3-4.2) than in males 2.6% (95% CI: 1.4-3.8), the difference was not statistically different. On the other hand, the prevalence increased with age, with a prevalence in age group of 60-69 years almost three times higher than among those aged 18-29 years. The difference was very significant in females were the prevalence in the age group 60-69 years was four times higher than among the age group of 18-19 years (**Table 66**).

**Table 66: Prevalence of raised fasting blood glucose**

| Raised blood glucose or currently on medication for diabetes** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % | 95% CI | n | % | 95% CI | n | % | 95% CI |
| 18-29 | 444 | 2.1 | 0.2-4.0 | 745 | 1.6 | 0.3-2.9 | 1189 | 1.9 | 0.7-3.0 |
| 30-44 | 849 | 2.4 | 1.1-3.8 | 1330 | 2.7 | 1.3-4.2 | 2179 | 2.6 | 1.6-3.5 |
| 45-59 | 423 | 3.9 | 1.6-6.1 | 771 | 7.0 | 3.3-10.7 | 1194 | 5.5 | 3.2-7.9 |
| 60-69 | 210 | 4.3 | 0.0-8.6 | 428 | 7.0 | 4.0-9.9 | 638 | 5.6 | 2.7-8.6 |
| **18-69** | **1926** | **2.6** | **1.4-3.8** | **3274** | **3.3** | **2.3-4.2** | **5200** | **2.9** | **2.1-3.8** |

## 2.3.2 Blood cholesterol measurements

The results of the blood total cholesterol level also include participants on cholesterol lowering medication. The mean total blood cholesterol, including those currently on medication for raised cholesterol (mg/dl) was 120.4 mg/dl (95% CI: 118.8-121.9). The results showed that the mean total blood cholesterol levels increased with age in both sexes and the difference was statistically significant (**Table 67**).

**Table 67: Mean total cholesterol by sex and age group**

| Mean total cholesterol (mg/dl) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | Mean | 95% CI | n | Mean | 95% CI | N | Mean | 95% CI |
| 18-29 | 459 | 114.2 | 108.8-119.6 | 763 | 118.5 | 116.3-120.6 | 1222 | 116.3 | 113.1-119.4 |
| 30-44 | 867 | 118.2 | 116.0-120.3 | 1364 | 121.7 | 119.9-123.5 | 2231 | 120.0 | 118.6-121.3 |
| 45-59 | 436 | 121.4 | 118.5-124.3 | 789 | 132.4 | 129.3-135.5 | 1225 | 127.4 | 125.2-129.5 |
| 60-69 | 219 | 122.1 | 117.0-127.3 | 442 | 142.8 | 134.3-151.2 | 661 | 132.6 | 127.4-137.8 |
| **18-69** | **1981** | **117.1** | **114.6-119.7** | **3358** | **123.6** | **122.1-125.1** | **5339** | **120.4** | **118.8-121.9** |

Blood total cholesterol is considered high when it is above ≥ 190 mg/dl or ≥ 5.0 mmol/L. The prevalence of raised blood cholesterol among study participants including those currently on medication was found to be 3% (95% CI: 2.3-3.6). The prevalence was higher in women (3.6%) compared to males (2.3%) but the difference was not statistically significant. A statistically significant difference was found in females where the prevalence of raised total cholesterol in the age group of 60-69 years was almost times higher than the age group of 18-29 years. A similar increase was noticed in both sexes but no statistically significant difference (**Table 68**).

**Table 68: Prevalence of Total cholesterol ≥ 5.0 mmol/L or ≥ 190 mg/dl or currently on medication for raised cholesterol**

| Total cholesterol ≥ 5.0 mmol/L or ≥ 190 mg/dl or currently on medication for raised cholesterol | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % | 95% CI | n | % | 95% CI | n | % | 95% CI |
| 18-29 | 459 | 2.2 | 0.4-4.0 | 763 | 2.0 | 0.9-3.2 | 1222 | 2.1 | 1.1-3.2 |
| 30-44 | 867 | 2.4 | 1.2-3.6 | 1364 | 3.0 | 2.0-4.0 | 2231 | 2.7 | 1.9-3.5 |
| 45-59 | 436 | 2.9 | 0.9-5.0 | 789 | 5.4 | 3.5-7.3 | 1225 | 4.3 | 2.8-5.7 |
| 60-69 | 219 | 1.2 | 0.0-2.8 | 442 | 11.6 | 4.1-19.2 | 661 | 6.5 | 2.4-10.6 |
| **18-69** | **1981** | **2.3** | **1.3-3.3** | **3358** | **3.6** | **2.8-4.4** | **5339** | **3.0** | **2.3-3.6** |

HDL (high-density lipoprotein), or "good" cholesterol, absorbs cholesterol and carries it back to the liver. The liver then flushes it from the body. High levels of HDL cholesterol can lower the risk for heart disease and stroke (cdc.gov). Values of HDL cholesterol below 1.03 mmol/L for men and 1.29 mmol/L for women are abnormal, while those above 1.5 mmol/L are normal for both sexes. Almost half of all men; 42% (95% CI: 39.8- 45.9) and 68.7% (95% CI: 66.6-70.8) the women had abnormal HDL levels (**Table 69**).

**Table 69: Percentage of respondents who have abnormal levels of HDL cholesterol (males and females)**

| Percentage of respondents with HDL <1.03mmol/L or <40 mg/dl | | | |
|---|---|---|---|
| Age Group (years) | Men | | |
| | n | % | 95% CI |
| 18-29 | 460 | 52.6 | 47.0-58.1 |
| 30-44 | 869 | 38.4 | 34.2-42.7 |
| 45-59 | 437 | 30.7 | 25.5-35.8 |
| 60-69 | 218 | 23.7 | 17.1-30.3 |
| **18-69** | **1984** | **42.8** | **39.8-45.9** |

| Percentage of respondents with HDL <1.29mmol/L or <50 mg/dl | | | |
|---|---|---|---|
| Age Group (years) | Women | | |
| | n | % | 95% CI |
| 18-29 | 764 | 71.7 | 67.8-75.5 |
| 30-44 | 1365 | 69.1 | 66.3-71.9 |
| 45-59 | 789 | 62.2 | 57.7-66.6 |
| 60-69 | 442 | 65.2 | 59.4-71.1 |
| **18-69** | **3360** | **68.7** | **66.6-70.8** |

## 2.3.3 Estimated intake of salt per day

Levels of sodium and creatinine in spot urine samples are used in STEPS to estimate population 24-hour salt intake, using the INTERSALT equation. The WHO recommendation is less than 5 grams of salt or 2 grams of sodium per person per day. The overall mean 24-hour salt intake was 8.8 grams per day in both sexes, which is higher than recommended quantity by WHO (**Table 70**).

**Table 70: Mean salt intake per day**

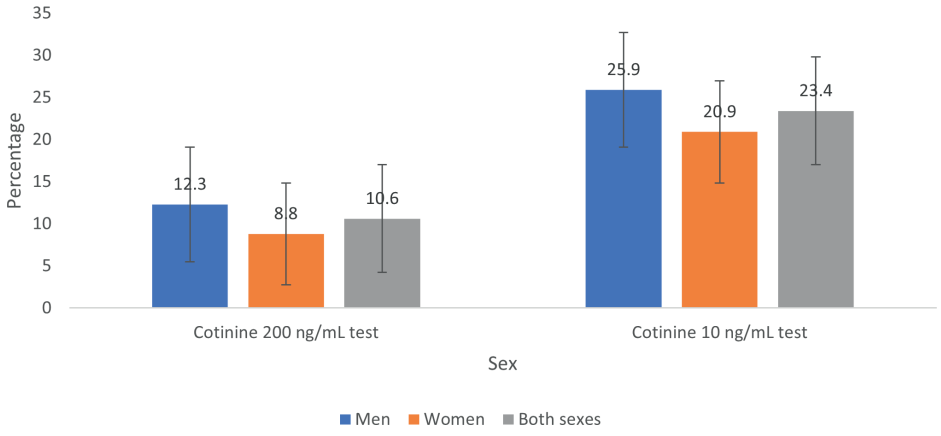
| Mean salt intake (g/day) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group | Men | | | Women | | | Both Sexes | | |
| (years) | n | Mean | 95% CI | n | Mean | 95% CI | n | Mean | 95% CI |
| 18-29 | 360 | 8.8 | 8.6-9.0 | 562 | 8.6 | 8.4-8.7 | 922 | 8.7 | 8.6-8.8 |
| 30-44 | 700 | 9.1 | 9.0-9.3 | 1001 | 9.1 | 9.0-9.3 | 1701 | 9.1 | 9.0-9.3 |
| 45-59 | 344 | 9.0 | 8.7-9.3 | 618 | 8.5 | 8.3-8.6 | 962 | 8.7 | 8.6-8.9 |
| 60-69 | 187 | 8.9 | 8.6-9.3 | 347 | 7.6 | 7.3-8.0 | 534 | 8.3 | 8.0-8.5 |
| **18-69** | **1591** | **9.0** | **8.8-9.1** | **2528** | **8.7** | **8.6-8.8** | **4119** | **8.8** | **8.7-8.9** |

## 2.3.4 Cotinine test among smokers and non-smokers

Cotinine test was performed among the general population. As some participants could report themselves as non-smokers, yet they were, the cotinine test results were not performed and they were not told this test was meant to estimate the level of exposure to nicotine.

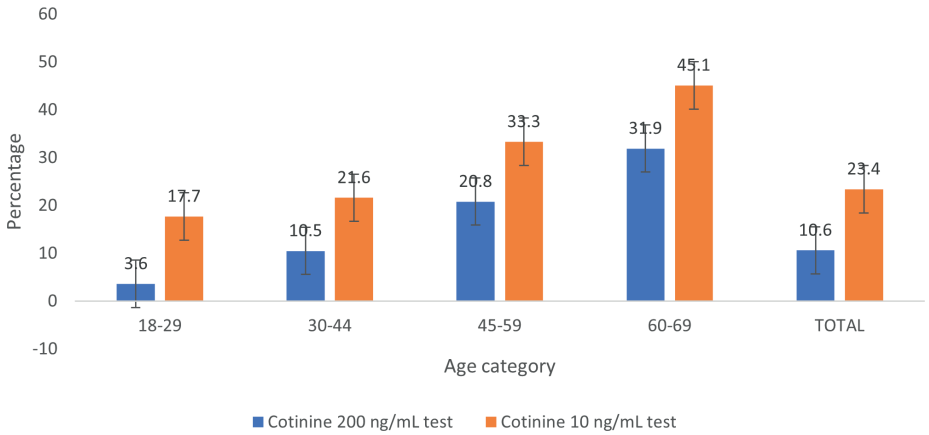
Cotinine test was performed among 5342 participants, 1989 men and 3353 women with a self-reported smoking prevalence of 7.5 (95%CI: 6.6-8.3), statistically higher among men (10.6%, 95%CI: 9.0-12.2) than women (4.3%, 95%CI: 3.6-5.1) (Annex 43). Among 5342 participants, 10.6% were found with Cotinine 200 ng/ mL (+) (95%CI: 9.5-11.7) and this percentage was statistically higher among men (12.3%, 95%CI: 10.6-14.1) than women (8.8%, 95%CI: 7.6-10.1) (Figure 37). Around twenty three percent were found with Cotinine 10 ng/mL (+) (23.4%, 95%CI: 21.4-25.3), without any statistical difference between men (25.9%, 95%CI: 22.9- 28.8) and women (20.9%%, 95%CI: 18.8-23.1) (**Figure 37**).

**Fig 37: Percentage of positive cotinine testing, by sex**



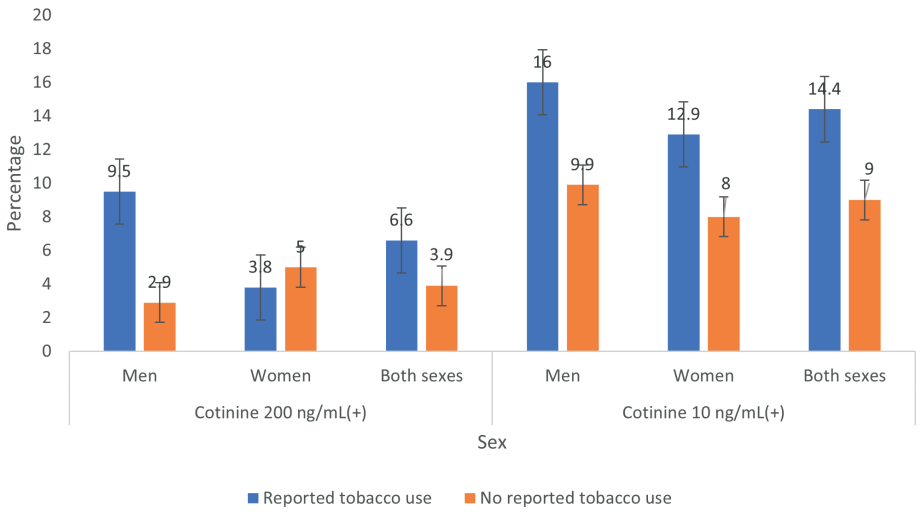

In terms of age, both Cotinine 200 ng/mL and Cotinine 10 ng/mL positivity could increase with age, and the difference between the two tests was statistically significant (**Figure 38**).

**Fig 38: Percentage of positive cotinine testing, by sex**



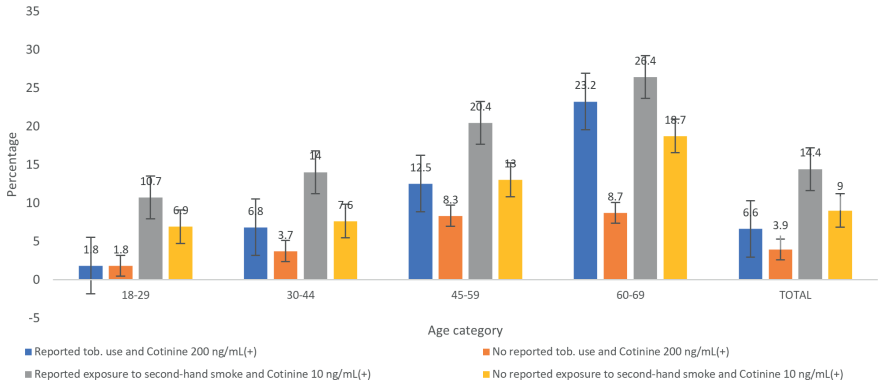
Among all the participants, 6.6% who reported themselves as smokers were found with Cotinine 200 ng/ mL(+) (95%CI: 5.8-7.4), and this percentage was statistically higher among men (9.5%, 95%CI: 8.0-10.9) than women (3.8%, 95%CI: 3.1-4.5); and 3.9% who reported themselves as non-smokers tested positive for cotinine 200 ng/mL (95%CI: 3.2-4.7), statistically higher among women (5%, 95%CI: 4.0-6.0) than men (2.9%, 95%CI: 1.9-3.8) (Figure 39). Among all the participants, 14.4% who reported themselves as smokers were found with Cotinine 10 ng/mL(+) (95%CI: 13.0-15.8), without any statistical difference between men (12.9%, 95%CI: 11.2- 14.5) and men (16.0%, 95%CI: 13.9-18.0). The survey found that 9% of women who reported themselves as non-smokers tested positive for cotinine 10 ng/ mL (95%CI: 7.7-10.2), again without any statistical difference between women (8%, 95%CI: 6.8-9.3) and men (9.9%, 95%CI: 7.8-11.9) (**Figure 39**).

**Fig 39: Tobacco use versus cotinine test, by sex**




In terms of age, the positivity of both Cotinine 200ng/mL and Cotinine 10ng/mL was higher among people aged 60-69 years (**Figure 40**).

**Fig 40: Tobacco use versus cotinine test, by age group**



## 2.4 Cardiovascular diseases risk

**Box 16:** Cardiovascular disease risk

- The prevalence of individuals aged 40–69 years with a 10-year CVD risk of ≥ 20% or with existing CVD was at 7.0% (95% CI: 5.8-8.5)..
- A statistically significant difference between the sexes was found, with much higher prevalence among women.

The total risk of developing cardiovascular disease (CVD) is determined by the combined effect of behavioral and biological risk factors. In this report, the WHO risk estimation model for CVD where age, sex, blood pressure, smoking status (current smokers OR those who quit smoking less than 1 year before the assessment), total cholesterol, and diabetes (previously diagnosed OR a fasting plasma glucose concentration >7.0 mmol/l (126 mg/dl) and BMI served as basis for estimating the 10 year risk of a fatal or non-fatal cardiovascular event (meaning death from, or developing cardiovascular disease) was used. A risk at or above 20 % is considered high and the treatment is considered cost-effective. The percentage of respondents in the age group 40–69 years with a 10-year CVD risk of ≥20% or with existing CVD was 7.0% (95% CI: 5.8-8.5). Prevalence was statistically significantly higher among women, 9.1% (95% CI: 7.4-11.2) than among men, 4.6% (95% CI: 3.2- 6.6). The cardiovascular disease risk was also found to increase with age; the risk was two times higher in the age group of 55-69 years than in the age group of 40-54 years, and, again, the difference was statistically different (**Table 71**).

**Table 71: Percentage of respondents with a 10-year CVD risk ≥20% or with existing CVD**

| Percentage of respondents with a 10-year CVD risk ≥20% or with existing CVD | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % | 95% CI | n | % | 95% CI | n | % | 95% CI |
| 40-54 | 533 | 2.8 | 1.7-4.6 | 939 | 8.3 | 6.3-11.0 | 1472 | 5.8 | 4.5-7.4 |
| 55-69 | 304 | 8.1 | 4.9-13.2 | 648 | 10.7 | 8.4-13.6 | 952 | 9.5 | 7.4-12.2 |
| **40-69** | **837** | **4.6** | **3.2-6.6** | **1587** | **9.1** | **7.4-11.2** | **2424** | **7.0** | **5.8-8.5** |

## 2.5 Summary of combined risk factors

**Box 17:** Summary of combined risk factors

- In both sexes, the prevalence of study participant with none of the abovementioned five risk factors was 6% (95% CI: 5.0-7.0); 86.9% (95% CI: 85.6-88.1) of the respondents had 1–2 risk factors; and 7.1% (95% CI: 6.3-7.9) has 3–5 of the listed CVD risk factors.
- The prevalence of 3–5 combined risk factors was much higher in the age group 45–69 years; 12.8% (95% CI: 12.5-17.3), while the prevalence of 1–2 risk factors was higher in the age group 18–44 years; 87.9% (95% CI: 86.4-89.4)

An individual with several mildly raised risk factors may be at a higher total risk of CVD than someone with just one elevated risk factor. Using total CVD risk instead of a single risk factor means that resources can be spent on those who benefit the most (those with a high risk) instead of treating those with a very low risk of morbidity and mortality.

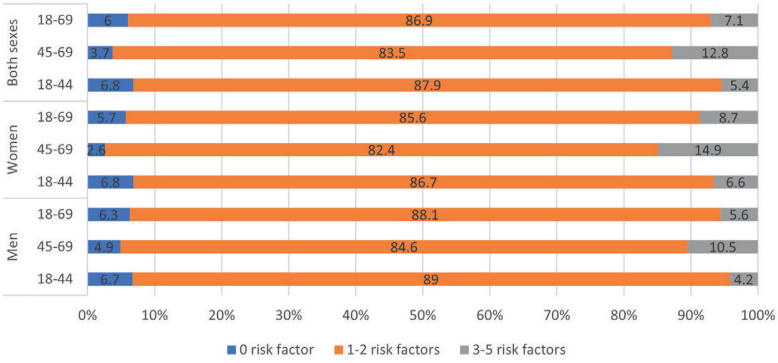
Based on the interview results and physical measurements, a combination of the following CVD risk factors was used:

- Current daily smoking
- Less than five servings of fruit and/or vegetables per day
- Not meeting WHO recommendations on physical activity for health (<150 minutes of moderate activity per week, or equivalent)
- Overweight or obese (BMI ≥ 25 kg/m2)
- Raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP).

In both sexes, the prevalence of study participant with none of the abovementioned five risk factors was 6% (95% CI: 5.0-7.0); 86.9% (95% CI: 85.6-88.1) of the respondents had 1–2 risk factors; and 7.1% (95% CI: 6.3-7.9) has 3–5 of the listed CVD risk factors.

The prevalence of 3–5 combined risk factors was much higher in the age group 45–69 years; 12.8% (95% CI: 12.5-17.3), while the prevalence of 1–2 risk factors was higher in the age group 18–44 years; 87.9% (95% CI: 86.4-89.4) and the differences were statistically significant. The survey results showed that the prevalence of 3–5 risk factors was higher in women; 8.7% (95% CI: 7.5-9.8) than men; 5.6% (95% CI: 4.4-6.8). On the other hand, the percentage of men with 1–2 risk factors (88.1%, 95% CI: 86.2-89.9) was higher than that of women; 85.6% (95% CI: 84.0-87.3) but the difference was not statistically significant (**Figure 41**).

**Fig 41: Summary of combined risk factors, by age group and sex**



# 3 Discussion of the findings

This report documents the findings of the second STEPS survey in Rwanda. It builds on previous community surveys that have been undertaken to help assess the extent of the NCD burden and risk factors in the country. It provides a comprehensive picture of the extent of NCDs in adults aged 18 to 69 years. Findings highlight significant areas of concern for some risk factors, along with high levels of some of the intermediate risk factors.

## 3.1 Tobacco Use

The 2022 STEPs survey has shown that overall, 7.1% of the population were current smokers. Only 3.7% of women reported being current smokers against 10.4% of men. The study revealed also that daily smokers accounted for 80.4% of all current smokers and the prevalence of daily smokers for manufactured tobacco was 60.2% for both sexes. The prevalence was quite similar for current smokers of manufactured tobacco as it accounted for 60.3%. Approximately a third (30%) of respondents (28.1% female and 33.6% male) who visited a doctor or any other health care provider in the past 12 months were advised to stop smoking. Additionally, 42% of individuals interviewed mentioned that they had tried to stop smoking during the past year.

Overall, if compared with the 2012 STEPs study, we can observe that there is a decrease in prevalence of current smokers where the percentage dropped from 12.9 % to 7.1%. This decrease might be attributed to country's efforts in the awareness of the population on the harmful effects of tobacco on human health and enforcement of different anti- tobacco laws and regulations.

However, although there is an observed decrease in overall tobacco use, men continue to have
the higher prevalence for both current and daily smokers than women, suggesting that the country should put more effort on active sensitization of men on quitting tobacco smoking. Nearly, one in three individuals were found being exposed to second-hand smoke at home and at their workplace. Surprisingly, the 2012 STEPs survey demonstrated that only nearly one in ten (12.3%) of both sexes were exposed to second-hand smoke at home and nearly one in ten (11%) were exposed to second-hand smoke at workplace, the above data show an increased exposure to second-hand smoke at both home and workplace that require specific prevention measures.

It is important to know that the 2018-2024 Health Sector Strategic Plan set a target of prevalence in current tobacco smokers at 6.32% by 2024 (MoH, 2018)). Additionally, given the above results, it would be important to increase and avail the support for smoking cessation at health facility level; including the related communication campaign. More importantly, reinforcing the Tobacco Control Law **No. 08/2013 of 01/03/2013** (being revised) (PRIMATURE, 2013) that bans the tobacco use in public spaces is critical, together with effective and accelerated implementation of 2020-2025 National Strategic Plan for Tobacco Control in Rwanda (Wecapable.com, 2022).

## 3.2 Alcohol consumption

The consumption of alcohol continues to be the high in Rwanda. The 2022 STEPs survey has found that, of all the respondents in the age group 18- 69 years, nearly half of current drinkers (48.1%) reported having consumed alcohol during the past 30 days of the survey, with the proportion. of male (61.9%) significantly higher than women (34.3%). This disparity could be attributed more to culture than to any other consideration.

Excessive consumption of alcohol has an impact on both health and socio-economic status of the population. When comparing with the 2012 STEPs survey, there has been a significant overall increase in alcohol consumption from 41.2% in 2012 to 48.1% in 2022. Similarly, there has been 10% increase in alcohol consumption in men and only 3% increase in women. In addition, 15.2% of respondents where heavy drinkers, meaning that they had reported a consumption of over 60g of pure alcohol on average during a single occasion during the past 30 days.

The prevalence of people who engages in heavy episodic drinking (6 or more drinks on any occasion in the past 30 days) was 3.4% in 2022.

The above results indicate a need for different awareness campaigns across the country as well as existing regulations to control heavy drinking. The National alcohol use policy that is being developed will further help to increase the prevalence of people abusing alcohol and thus reduce the health- related conditions.

## 3.3 Diet

### *Fruit and vegetable consumption*

According to the WHO/FAO, it is recommended to consume on a daily basis 400g of edible fruits and vegetables in order to prevent NCDs. In practice, this quantity of 400 g is translated to 5 portions/ servings per day (FAO, 2021). It is important to note the concern about the large number of people who do not comply with WHO recommendations related to diet. In fact, of all the participants the 2022 STEPs survey, nearly 90% reported consuming less than 5 servings of fruits and vegetables per day as recommended by the WHO and no significant variance was observed between men and women. The average daily intake of fruit and vegetables among the Rwandan population was 2.3 servings with no statistically significant difference between men and women.
The previous 2012 STEPs survey showed that in Rwanda, the level of fruit and vegetables consumption was very low in view of the WHO recommendations of eating at least 5 servings per day (WHO, 2020). In fact, less than one out of 100 of the survey respondents consumed more than 5 servings of fruit or vegetables per day by then. As of the current STEPs survey, 10 out 100 people had the recommended WHO serving of fruits and vegetables per day, suggesting an increase of only 1% per year over the 10 past years. There is therefore a need to increase awareness of the population on the consumption of fruits and vegetables as one of the means to fight non-communicable diseases. In addition, there should be multi-sectorial interventions towards increasing availability and affordability of fruits and vegetables to the population.

### *Dietary Salt and salt consumption*

Excessive consumption of sodium in the diet can lead to high blood pressure, heart disease, and stroke. The survey indicated that nearly 10 % of respondents added salt to their meal,
and only 2.8% of all the respondents confirmed that they consume processed food high in salt. However, although there was a high proportion of respondents that were aware that salt can cause serious health problems, only one out of five of all respondents thought that lowering salt in their diet was very important for their health.

Furthermore, the survey revealed that the mean salt consumption of Rwandans is 8.8 grams per day, which is higher than WHO recommendations of less than 5 grams of salt or 2 grams of sodium per person per day (ref). This suggests that it is still imperative to continue educating the population about reducing the excessive consumption of salt and its consequence on cardiovascular diseases.

## 3.4 Physical activity

For health and wellbeing, WHO recommends at least 150 to 300 minutes of moderate aerobic activity per week (or the equivalent vigorous activity) for all adults, and an average of 60 minutes of moderate aerobic physical activity per day for children and adolescents (ref).

According to 2022 survey findings, nearly 9 Rwandans out 10 are involved in high and moderate levels of physical activity, with a higher proportion of in men than in women. The median duration of all physical activity carried out daily reported by respondents of all ages was 334.3 minutes, (360.0 minutes for men and 321.4 minutes for women).
In addition, the study results show that the overall percentage of people not meeting the WHO recommendations on physical activity for health (WHO, 2020) was 4.6% with a slight deference within sex, 5.6% for women and 3.5% for men.

According to the above findings, Rwandans have a good level of physical activity, which is protective for many NCDs. Comparing with results from the previous STEP survey (2012) using the former WHO recommendations on physical activity, there has been an improvement as people engaging in high physical activity increased from 61.5% in 2012 to 81.3% in 2022; the prevalence of moderate physical activity decreased from 25.2% to 11.1% and low levels of physical activity decreased from 13.3% to 7.5%. It is also important to note that the majority of total physical activity was work (64.5%) and transport (31.1%) related; the proportion of recreational total physical activity was only 4.5%.

The above information highlight the need for continuous awareness in the community about the benefit of adequate physical activity and creation of conducive environment and facilities for recreational physical activities.

## 3.5 Overweight and obesity

Overweight and obesity are linked to many serious health problems, including type 2 diabetes, heart disease, stroke, and some types of cancer. The nutritional status was assessed using the Body mass index (BMI) which is a value derived from

the mass (weight) and height of a person. The BMI is defined as the body mass divided by the square of the body height, and is expressed in units of kg/m2 (Wecapable.com, 2022). Major adult BMI classifications are underweight (under 18.5 kg/ m2), normal weight (18.5 to 24.9), overweight (25 to 29.9) and obese (30 or more) (Wecapable.com, 2022).

Results from the survey showed that the mean BMI of Rwandans was in normal range; 22.4. The percentage of people with BMI ≥25 was 18.6% (14.2% for overweight and 4.3 for obesity), the prevalence of overweight was higher in women (26%) than in men (11.5%). On the other hand, 71.7% of participants were in normal weight range and 9.7% were underweight (WHO, 2021).

Compared to the previous STEP survey, there has been an increase in the prevalence of obesity from 2.8% to 4.3% and the increase was more observed in females.

In Rwanda, the prevalence of overweight and obesity is still low compared to the global estimates (ref) but the above results call for a continuous and sustained community awareness in community on healthy diet and regular physical activity. The country should also start thinking about regulating the marketing and consumption of unhealthy foods.

## 3.6 Raised Blood Pressure

According to the WHO, the number of adults aged 30–79 years with hypertension has increased from 650 million to 1.28 billion in the last thirty years (WHO, 2021). Nearly half of these people did not know they had hypertension. Therefore, it is recommended to conduct regular blood pressure screening as this helps to start treatment at an early stage to prevent complications and, ultimately, improve treatment outcomes. Half of respondents (52.1%) in all groups reported that their blood pressure had never been measured and much higher proportions were observed in men. Although the percentage is still high, it shows a significant improvement since the last 2012 STEPS survey, which indicated that nearly eight out of ten (80%) of participants had never had theirblood pressure measured.

The overall prevalence of raised blood pressure in the Rwandan population was 16.8% which shows a slight increase compared to the prevalence from 2012 STEP survey (15%). This 1.8% increase in the prevalence could be explained by the increased access to CVDs treatment services resulting into a reduced pre-mature mortality but also the increased like expectancy of the Rwandan population where we are having more aged people. More efforts and resources should continue being invested in hypertension awareness, early detection focusing on people above 45 years and adequate management to further reduce the premature mortality to its complications.

## 3.7 Raised blood glucose

In 2019, diabetes was the direct cause of 1.5 million deaths and 48% of all deaths due to diabetes occurred prematurely just before the age of 70 years (ref). The WHO states again that in high- income countries, the premature mortality rate from diabetes decreased between 2000 and 2010 and then increased between 2010 and 2016, while in lower-middle-income countries, the premature mortality rate from diabetes increased over both periods (WHO, 2021).

In this 2022 STEP survey, it was shown that nearly 9 out of 10 respondents had never undergone a test for diabetes and this proportion was higher in younger age group. Ten years back, during the previous population level study on NCD risk factors, nearly ten out of ten respondents reported never been undergone a test for diabetes. This suggests that the screening on diabetes is still low and should be considered of great concern for all the age groups of the population[1]. In addition, the recent study revealed also that for those Rwandans who had ever been notified that they have high blood sugar, only nearly four out of ten of them were actually taking medications prescriber by health care providers.

The prevalence of impaired fasting glycemia (IFG) was 4.7% while 2.9% of study responded were found to have raised blood sugar. Comparing these results with the 2012 STEP survey, we realize that there has been a 3.1% increase in the prevalence of IFG and a slight reduction of 0.2% in the prevalence of raised blood sugar. Generally, the prevalence of diabetes in Rwanda is still low compared to the global prevalence where it is affecting 10% of the global population[1]. However, the country needs to continue putting much efforts in diabetes awareness, strategies for early detection and management of people in pre-diabetes, treatment and follow up of people with diabetes. In addition, people above 45 years old should be the focus of the national NCD program.

## 3.8 Raised Total Cholesterol

The survey results showed that nearly 10 out of 10 respondents of all ages have never had their blood cholesterol measured within a health facility. Among those diagnosed with a high level of total cholesterol, only 11.9% were currently taking the oral medication prescribed for raised total cholesterol at the time of the study.

1 https://diabetesatlas.org

The prevalence of raised total cholesterol in the blood was at 3% with a higher proportion in women (3.6%) than in men (2.3%). These results show a slight increase compared to the findings from the 2012 STEP survey where the prevalence was 2.6%. This finding highlights the need for improved diagnosis, particularly for those aged 45 years for whom the condition is more prevalent.

## 3.9 10-year cardiovascular disease risk ≥ 30%

A 10-year CVD risk of ≥30% is defined according to age, sex, blood pressure, smoking status (current smokers OR those who quit smoking less than 1 year before the assessment), total cholesterol, and diabetes (previously diagnosed OR a fasting plasma glucose concentration >7.0 mmol/l (126 mg/dl)). This indicator shows people with a high risk of developing a cardiovascular disease such as heart attack or stroke in the next 10 years; and should drug intervention to reduce the magnitude of cardiovascular events.

This 2022 STEP survey showed that 3.5 % of respondents had a 10-year cardiovascular risk ≥30% and the risk increased with age. Lifestyle modification and early detection of risk factors through regular screening programs and drugs prevention for those with high CVD risk (55 years and above) is therefore recommended.

## 3.10 Combined risk factors

The presence of multiple risk factors in individuals increases their overall risk of NCDs. Depending on the number of these risk factors, individuals can be classified as having low, medium or high risk of NCDs. This overall measure of NCD risk found that 6% of participants had no risk factors, 86.9% were at moderate risk of NCDs (1-2 risk factors) and7 .1% were at high risk (3-5 risk factors). The proportion of 45–69-year-old participants with a high NCD risk was more than double that of those aged 18-44 making people in this age group an important target for interventions to manage NCD risk factors. There has been a good improvement compared to the previous survey done 10 years ago where less than 1% of responded had no risk and the percentage of people at high risk has reduced more than a half, from 16.4% to 7.1%. These above findings highlights a good progress made but also the need for continuous community education to reduce exposure to NCDs risk factors as well as establishing NCDs screening and early detection programs closer to the community.

## 3.11 Other risk factors

### 3.11.1 Cervical cancer screening

Cervical cancer is the fourth most common cancer among women globally, with an estimated 604 000 new cases and 342 000 deaths in 2020. About 90% of the new cases and deaths worldwide in 2020 occurred in low- and middle-income countries (ref: Sung H, Ferlay J, Siegel RL et al. Global cancer statistics 2020). In 2020, the WHO launched a global strategy for cervical cancer elimination with a goal achieving an incidence threshold of 4 per 100 000 women-years. The same strategy has the following 90-70-90 targets that must be met by 2030 for countries to be on the path towards cervical cancer elimination 90% of girls fully vaccinated with HPV vaccine by age 15 years, (2) 70% of women are screened with a high- performance test by 35 years of age and again by 45 years of age and (3) 90% of women identified with cervical disease receive treatment (90% of women with precancer treated, and 90% of women with invasive cancer managed).[2]

In this 2022 STEP survey, questions related to cervical cancer knowledge and screening were added and the results showed that 11.7% of women between 30-49 years old have ever had a screening test for cervical cancer. More efforts are needed to increase the screening coverage through education the population and availing screening services at the primary health care facilities.

### 3.11.2 Injuries and Violence

In comparison with the results from the 2012 STEP Survey, the prevalence of road traffic crashes was still low; 6.7% of participants have been involved in a road traffic crash in the past 12 months and 43.9% of those who were involved in a road traffic crash sustained serious injuries.

This might be a result of poor use of seatbelts in cars and helmets when riding motorcycles or scooters. 30.3% reported not always wearing a helmet when riding a motorcycle or scooter and this is showing a significant improvement compared to the previous STEP survey, as there has been an increase of 45% in the use of helmets which could have resulted from different awareness campaigns and enforcement of road traffic regulations. The findings also show that the parentage of people seriously injured due to causes other than road traffic crashes has increased other the last 10 years; it rose from 3.9% to 14.5% and most of those injuries resulted from falls and cuts, which should be a focus of health promotion activities towards injury and violence prevention.

2 Cervical cancer elimination strategy

### 3.11.3 Oral Health

Oral diseases, while largely preventable, pose a major health burden for many countries and affect people throughout their lifetime, causing pain, discomfort, disfigurement and even death. It is estimated that oral diseases affect nearly 3.5 billion people).[3] Untreated dental caries (tooth decay) in permanent teeth is the most common health condition according to the Global Burden of Disease 2019[4]

In this study, a vast majority, 96.9% reported having least 20 natural teeth. Among the respondents of all ages, only 11.4% self-reported to have consulted a dentist for different reasons during the last 12 months; this is a very low rate; according to WHO, people are advised to visit a dentist twice a year for checkup which has been done by only 0.7% of our respondents.

Pain or trouble with teeth or gums was reported by 92.8% of all the respondents as the main reason to visit a dentist, the results also showed that 66.9% of participants cleaned their teeth at least once a day, while 19.3% did so at least twice a day. The above figures indicate a poor oral hygiene that need a strong community education about good oral hygiene but also availing dental services at the primary health care level closer to the population.

Furthermore, among the respondents who cleaned their teeth, 86.1% were using toothpaste and 88.0% use toothbrush; this is a good habit that should be encouraged in our population.

3 https://www.who.int/news-room/fact-sheets/detail/oral-health
4 GBD 2019, http://ghdx.healthdata.org/gbd-results-tool

# 4 Conclusion and recommendations

This STEP survey on risk factors of non- communicable diseases in Rwanda is the second of its kind; the first one was conducted in 2012. Like for the first STEPs survey, the second one is also a population wide survey conducted on NCD risk factors. This demonstrates a national desire in the prevention and control of non-communicable diseases using data driven interventions.

Comparing with the results from the previous similar survey, findings from the 2022 STEPs survey show that alcohol consumption has increased and remains a major risk factor; the prevalence of tobacco smoking has reduced of 5%, the level of physical activity is good among Rwandans but recreational activities still need to be increased. Over the last 10 years, there has been a 10% increase in adequate fruit and vegetables consumption among Rwandans and the consumption of salt was found to be high. Despite a slight increase in the prevalence of overweight and obesity, the majority of Rwandans are in normal weight range.

The prevalence of raised blood pressure and impaired fasting glycaemia have slightly increased, however the prevalence of diabetes has relatively remained stable around 3%. The prevalence of road traffic accidents has remained while injuries from other causes that road traffic have increased.

Moreover, the current study showed that a low coverage of cervical cancer screening, poor oral health that need a special attention by the Ministry of Health. Based on the survey findings, the following recommendations are proposed:

(a) To establish a high-level multi-sectorial NCD committee that will provide leadership, oversee the implementation of NCDs prevention, and control interventions.

(b) To strengthen public awareness campaigns and interventions to reduce the modifiable risk factors for NCDs focusing on unhealthy diets, physical inactivity, harmful use of alcohol and tobacco use.

(c) To promote community awareness and NCDs screening through integration of NCDs intervention on the action plans for decentralized government entities (district, sector and cells) and building the capacity of community health workers for NCDs awareness and screening.

(d) To accelerate the implementation of cervical cancer elimination strategy through increasing domestic funding and external resource mobilization to scale up services in all primary health care facilities and carry out screening campaigns.

(e) To build the health system capacity to ensure availability of well-trained health workforce and access to affordable and quality medicines and basic technologies for screening, diagnosis, treatment and monitoring of common NCDs such as hypertension and diabetes at primary health care level.

(f) To revamp the health information systems to guarantee reliable, timely, complete and quality data for evidence-based practice and decision making in NCD prevention and control.

(g) To strengthen the implementation of the Framework Convention on Tobacco Control (FCTC), the National tobacco policy and the National multi sectorial action plan for tobacco control to further reduce the prevalence of tobacco smoking in the country.

(h) To adopt the global strategy to reduce harmful use of alcohol and accelerate the development and operationalization of the national policy to control the harmful use of alcohol.

(i) To introduce the legislations on production, packaging and responsible marketing of food and drinks to reduce consumption of unhealthy foods.

(j) To implement the WHO physical activity tool kit and guidelines in the country to encourage adoption of active lifestyles and to reduce sedentary lifestyles.

(k) To establish mechanisms to foster multi-sectoral collaboration to ensure establishment and implementation of road safety national action plans.

(l) To conduct public education and social marketing campaigns on prevention of injuries and violence.

(m) To strengthen the delivery of oral health services throughout the country focusing at primary health care level and raise the awareness on the importance of regular dental checkups and maintenance of proper oral health hygiene.

(n) To integrate NCD indicators in national health surveys (e.g., DHS) to supplement the data collected in periodic STEPS surveys for proper planning and projection of NCD prevention and control.

(o) To explore other innovative and cheaper ways (e.g., mobile phone surveys) to collect data on NCDs risk factors supplementing data collected in periodic STEPS surveys.

# 5 References


1. Non-Communicable Disease Division, Rwanda Biomedical Centre, Ministry of Health, Rwanda. November 2020
2. Reddy, K. S. (2016). Global Burden of Disease Study 2015 provides GPS for global health 2030. The Lancet, 388(10053), 1448-1449.
3. https://www.who.int/news-room/fact-sheets/detail/oral-health
4. GBD 2019, http://ghdx.healthdata.org/gbd-results-tool)
5. National Strategy and Costed Action Plan for the Prevention and Control of Non-Communicable Diseases in Rwanda
6. Rwanda Non-communicable Diseases Risk Factors Report, 2015
7. Ministry of Health, Fourth Health Sector Strategic Plan July 2018 – June 2024, 2018
8. PRIMATURE, Official Gazette n °14bis of 08/04/2013, Tobacco Control Law No. 08/2013 of 01/03/2013,2013
9. "Body Mass Index (BMI): Calculation and Importance." Wecapable.com. Web. August 17, 2022.<https://wecapable.com/body-mass-index-bmi-importance/>
10. FAO. 2021. FAO/WHO International Workshop on Fruits and Vegetables in preparation for the International Year of Fruits and Vegetables 2021. Rome. https://doi.org/10.4060/cb6234en
11. WHO, Healthy diet, factsheet, https://www.who.int/news-room/fact-sheets/detail/healthy-diet
12. WHO, Physical activity, factsheet, https://www.who.int/news-room/fact-sheets/detail/physical-activity
13. WHO, Obesity and overweight, factsheet, https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight
14. WHO, More than 700 million people with untreated hypertension,https://www.who.int/news/item/25-08-2021-more-than-700-million-people-with-untreated-hypertension
15. WHO, Diabetes, factsheet, https://www.who.int/news-room/fact-sheets/detail/diabetes

# 6 Annexes

### Annex 1: Highest level of education, both sexes, by age

| Highest level of education | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Men | | | | | | |
| Age Group (years) | n | % No formal schooling | % Less than primary school | % Primary school completed | % Technical/vocationalcompleted | % Secondary school completed | %College/University completed |
| 18-29 | 496 | 13.9 | 6.5 | 55.6 | 4.8 | 17.1 | 2.0 |
| 30-44 | 931 | 28.2 | 7.5 | 51.1 | 3.0 | 7.2 | 2.9 |
| 45-59 | 467 | 30.6 | 5.1 | 49.7 | 7.1 | 4.1 | 3.4 |
| 60-69 | 228 | 45.2 | 7.5 | 40.4 | 3.9 | 1.8 | 1.3 |
| **18-69** | **2122** | **27.2** | **6.7** | **50.7** | **4.4** | **8.2** | **2.6** |

| Highest level of education | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Women | | | | | | |
| Age Group (years) | n | % No formal schooling | % Less than primary school | % Primary school completed | % Technical/vocationalcompleted | %Second-ary school completed | %College/University completed |
| 18-29 | 813 | 10.5 | 6.5 | 57.7 | 4.2 | 19.6 | 1.6 |
| 30-44 | 1431 | 27.8 | 8.5 | 50.8 | 2.2 | 7.9 | 2.9 |
| 45-59 | 823 | 37.1 | 5.6 | 48.2 | 3.8 | 3.8 | 1.6 |
| 60-69 | 457 | 61.9 | 4.6 | 27.1 | 3.3 | 2.4 | 0.7 |
| **18-69** | **3524** | **30.4** | **6.8** | **48.7** | **3.1** | **8.9** | **2.0** |

### Annex 2: Employment status, both sexes, by age

| Employment status | | | | | |
|---|---|---|---|---|---|
| | Men | | | | |
| Age Group (years) | n | % Governmentemployee | % Non-government employee | % Self-employed | % Unpaid |
| 18-29 | 497 | 2.4 | 16.9 | 47.3 | 33.4 |
| 30-44 | 936 | 1.4 | 18.4 | 75.1 | 5.1 |
| 45-59 | 468 | 4.3 | 11.1 | 78.4 | 6.2 |
| 60-69 | 229 | 0.0 | 9.2 | 77.3 | 13.5 |
| **18-69** | **2130** | **2.1** | **15.4** | **69.6** | **12.9** |

| Employment status | | | | | |
|---|---|---|---|---|---|
| | Women | | | | |
| Age Group (years) | n | % Governmentemployee | % Non-government employee | % Self-employed | % Unpaid |
| 18-29 | 813 | 1.7 | 11.7 | 55.7 | 30.9 |
| 30-44 | 1447 | 2.3 | 12.6 | 76.0 | 9.1 |
| 45-59 | 825 | 2.1 | 9.5 | 79.6 | 8.8 |
| 60-69 | 461 | 1.5 | 3.9 | 69.4 | 25.2 |
| **18-69** | **3546** | **2.0** | **10.5** | **71.3** | **16.1** |

### Annex 3: Unpaid work and unemployment, both sexes, by age group

| Unpaid work and unemployed | | | | | | | |
|---|---|---|---|---|---|---|---|
| Age | Men | | | | | | |
| Group(years) | n | % Non-paid | % Student | % Home-maker | % Retired | Unemployed | |
| | | | | | | % Able to work | % Not able to work |
| 18-29 | 166 | 1.2 | 54.2 | 5.4 | 0.0 | 36.7 | 2.4 |
| 30-44 | 48 | 4.2 | 0.0 | 14.6 | 0.0 | 68.8 | 12.5 |
| 45-59 | 29 | 0.0 | 0.0 | 0.0 | 6.9 | 62.1 | 31.0 |
| 60-69 | 31 | 0.0 | 3.2 | 0.0 | 25.8 | 6.5 | 64.5 |
| **18-69** | **274** | **1.5** | **33.2** | **5.8** | **3.6** | **41.6** | **14.2** |

| Unpaid work and unemployed | | | | | | | |
|---|---|---|---|---|---|---|---|
| Age Group(years) | Women | | | | | | |
| | n | % Non-paid | % Student | % Home-maker | % Retired | Unemployed | |
| | | | | | | % Able to work | % Not able towork |
| 18-29 | 251 | 1.2 | 36.7 | 6.4 | 0.0 | 53.4 | 2.4 |
| 30-44 | 131 | 4.6 | 2.3 | 3.1 | 0.8 | 80.2 | 9.2 |
| 45-59 | 73 | 9.6 | 0.0 | 0.0 | 1.4 | 42.5 | 46.6 |
| 60-69 | 116 | 1.7 | 0.0 | 0.0 | 15.5 | 11.2 | 71.6 |
| **18-69** | **571** | **3.2** | **16.6** | **3.5** | **3.5** | **49.6** | **23.6** |

### Annex 4: Mean amount of tobacco used by daily smokers by type

| Mean amount of tobacco used by daily smokers by type | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | | | | | | |
| | n | Mean # of manufac-tured cig. | 95%CI | N | Mean # of hand-rolledcig. | 95% CI | n | Mean # of pipes of tobacco | 95% CI |
| 18-29 | 15 | 3.8 | 2.9-4.8 | 14 | 1.1 | 0.1-2.1 | 15 | 0.0 | .-. |
| 30-44 | 86 | 2.9 | 2.3-3.5 | 91 | 1.4 | 0.7-2.1 | 91 | 0.4 | 0.0-1.0 |
| 45-59 | 70 | 2.8 | 1.7-3.9 | 68 | 2.7 | 1.5-3.8 | 69 | 0.6 | 0.1-1.1 |
| 60-69 | 60 | 2.9 | 1.2-4.6 | 59 | 1.8 | 1.3-2.4 | 60 | 0.2 | 0.0-0.4 |
| **18-69** | **231** | **3.0** | **2.4-3.6** | **232** | **1.8** | **1.4-2.3** | **235** | **0.3** | **0.1-0.6** |

| Mean amount of tobacco used by daily smokers by type | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | | | | | | |
| | n | Mean # of cigars, cheerots,cigarillos | 95%CI | N | Mean # of shisha sessions | 95% CI | n | Mean # of other typeof tobacco | 95% CI |
| 18-29 | 15 | 0.0 | .-. | 15 | 0.1 | 0.0-0.2 | 15 | 0.2 | 0.0-0.5 |
| 30-44 | 91 | 0.0 | .-. | 91 | 0.0 | .-. | 91 | 0.0 | 0.0-0.0 |
| 45-59 | 70 | 0.0 | .-. | 70 | 0.0 | .-. | 70 | 0.0 | 0.0-0.1 |
| 60-69 | 60 | 0.0 | .-. | 60 | 0.0 | .-. | 59 | 0.1 | 0.0-0.2 |
| **18-69** | **236** | **0.0** | **.-.** | **236** | **0.0** | **.-.** | **235** | **0.1** | **0.0-0.1** |

| Mean amount of tobacco used by daily smokers by type | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Women | | | | | | | | |
| Age Group (years) | n | Mean # of manufac-tured cig. | 95%CI | N | Mean # of hand-rolled cig. | 95% CI | n | Mean # ofpipes of tobacco | 95% CI |
| 18-29 | 5 | 5.2 | .-. | 5 | 3.3 | .-. | 5 | 0.0 | .-. |
| 30-44 | 34 | 0.8 | .-. | 33 | 0.5 | .-. | 34 | 0.1 | .-. |
| 45-59 | 66 | 0.3 | .-. | 66 | 1.2 | .-. | 66 | 1.3 | .-. |
| 60-69 | 62 | 0.3 | .-. | 62 | 1.0 | .-. | 62 | 1.4 | .-. |
| **18-69** | **167** | **1.0** | **.-.** | **166** | **1.3** | **.-.** | **167** | **0.9** | **.-.** |

| Mean amount of tobacco used by daily smokers by type | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Women | | | | | | | | |
| Age Group (years) | n | Mean # of cigars, cheerots,cigarillos | 95%CI | N | Mean # of shi-shasessions | 95% CI | n | Mean # of other typeof tobacco | 95% CI |
| 18-29 | 5 | 0.0 | .-. | 5 | 0.0 | .-. | 5 | 0.4 | .-. |
| 30-44 | 33 | 2.3 | .-. | 34 | 0.1 | .-. | 34 | 0.3 | .-. |
| 45-59 | 65 | 1.9 | .-. | 66 | 0.2 | .-. | 66 | 0.0 | .-. |
| 60-69 | 58 | 1.4 | .-. | 62 | 0.0 | .-. | 62 | 0.1 | .-. |
| **18-69** | **161** | **1.7** | **.-.** | **167** | **0.1** | **.-.** | **167** | **0.1** | **.-.** |

### Annex 5: Percentage of daily cigarette smokers smoking given quantities of manufactured or hand-rolled cigarettes per day

| Percentage of daily smokers smoking given quantities of manufactured or hand-rolled cigarettes per day | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Men | | | | | | | | | | |
| Age Group (years) | n | % <5 Cigs. | 95% CI | % 5-9 Cigs. | 95% CI | % 10-14 Cigs. | 95% CI | % 15-24 Cigs. | 95% CI | % ≥25 | 95% CI |
| 18-29 | 14 | 39.8 | 10.1-69.6 | 53.3 | 23.0-83.6 | 6.9 | 0.0-20.1 | 0.0 | 0.0-0.0 | 0.0 | 0.0-0.0 |
| 30-44 | 85 | 72.4 | 61.2-83.6 | 18.8 | 9.4-28.2 | 7.0 | 1.4-12.6 | 1.9 | 0.0-4.6 | 0.0 | 0.0-0.0 |
| 45-59 | 63 | 55.1 | 40.2-70.0 | 36.9 | 23.3-50.5 | 1.8 | 0.0-5.3 | 0.0 | 0.0-0.0 | 6.2 | 0.0-13.5 |
| 60-69 | 52 | 65.5 | 50.2-80.8 | 25.2 | 10.2-40.1 | 0.5 | 0.0-1.5 | 8.9 | 0.0-19.1 | 0.0 | 0.0-0.0 |
| **18-69** | **214** | **61.9** | **54.0-69.9** | **29.6** | **21.9-37.3** | **4.1** | **1.2-7.0** | **2.7** | **0.0-5.4** | **1.7** | **0.0-3.7** |

| Percentage of daily smokers smoking given quantities of manufactured or hand-rolled cigarettes per day | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Women | | | | | | | | | | |
| Age Group (years) | n | % <5 Cigs. | 95% CI | % 5-9 Cigs. | 95% CI | % 10-14 Cigs. | 95% CI | % 15-24 Cigs. | 95% CI | % ≥ 25 | 95%CI |
| 18-29 | 5 | 38.2 | 0.0-81.6 | 17.0 | 0.0-47.8 | 0.0 | 0.0-0.0 | 44.9 | 0.0-100.0 | 0.0 | .-. |
| 30-44 | 7 | 64.8 | 23.7-100.0 | 15.6 | 0.0-45.7 | 12.5 | 0.0-37.4 | 7.1 | 0.0-23.2 | 0.0 | .- |
| 45-59 | 23 | 84.0 | 68.9-99.0 | 1.2 | 0.0-3.8 | 14.8 | 0.0-29.7 | 0.0 | 0.0-0.0 | 0.0 | .- |
| 60-69 | 19 | 65.1 | 44.4-85.7 | 27.5 | 8.3-46.6 | 7.5 | 0.0-22.0 | 0.0 | 0.0-0.0 | 0.0 | .- |
| **18-69** | **54** | **66.2** | **42.3-90.1** | **11.5** | **1.2-21.9** | **9.2** | **1.9-16.6** | **13.1** | **0.0-34.8** | **0.0** | **.-** |

| Percentage of daily smokers smoking given quantities of manufactured or hand-rolled cigarettes per day | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Both Sexes | | | | | | | | | | |
| | n | % <5 Cigs. | 95% CI | % 5-9 Cigs. | 95% CI | % 10-14 Cigs. | 95% CI | % 15-24 Cigs. | 95% CI | % ≥ 25 Cigs. | 95% CI |
| 18-29 | 19 | 39.4 | 13.4-65.3 | 43.2 | 17.5-68.9 | 4.9 | 0.0-14.6 | 12.5 | 0.0-35.1 | 0.0 | 0.0-0.0 |
| 30-44 | 92 | 72.0 | 60.9-83.1 | 18.6 | 9.6-27.6 | 7.2 | 1.3-13.2 | 2.1 | 0.0-4.8 | 0.0 | 0.0-0.0 |
| 45-59 | 86 | 61.8 | 49.0-74.6 | 28.6 | 17.3-39.9 | 4.8 | 0.1-9.5 | 0.0 | 0.0-0.0 | 4.8 | 0.0-10.4 |
| 60-69 | 71 | 65.4 | 51.7-79.2 | 25.4 | 12.0-38.9 | 1.3 | 0.0-3.3 | 7.8 | 0.0-16.9 | 0.0 | 0.0-0.0 |
| **18-69** | **268** | **62.6** | **54.9-70.2** | **26.8** | **19.9-33.7** | **4.9** | **2.0-7.7** | **4.3** | **0.0-8.6** | **1.4** | **0.0-3.1** |

## Annex 6: Status of using smokeless tobacco among all respondents

| Smokeless tobacco use | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | | | | | | |
| Age Group (years) | n | Current user | | | | Non user | | | |
| | | % Daily | 95% CI | % Non-daily | 95% CI | % Pastuser | 95% CI | % Neverused | 95% CI |
| 18-29 | 497 | 0.4 | 0.0-1.0 | 0.2 | 0.0-0.6 | 1.0 | 0.0-2.1 | 98.5 | 97.1-99.9 |
| 30-44 | 936 | 0.0 | 0.0-0.0 | 0.2 | 0.0-0.5 | 1.0 | 0.2-1.8 | 98.8 | 98.0-99.7 |
| 45-59 | 468 | 0.0 | 0.0-0.0 | 0.1 | 0.0-0.4 | 1.0 | 0.0-1.9 | 98.9 | 97.9-99.9 |
| 60-69 | 229 | 0.6 | 0.0-1.7 | 0.0 | 0.0-0.0 | 4.1 | 0.6-7.5 | 95.4 | 91.7-99.0 |
| **18-69** | **2130** | **0.2** | **0.0-0.5** | **0.2** | **0.0-0.4** | **1.2** | **0.5-1.8** | **98.4** | **97.7-99.2** |

| Smokeless tobacco use | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Women | | | | | | | | |
| Age Group (years) | n | Current user | | | | Non user | | | |
| | | % Daily | 95% CI | % Non-daily | 95% CI | % Pastuser | 95% CI | % Neverused | 95% CI |
| 18-29 | 813 | 0.0 | 0.0-0.1 | 0.2 | 0.0-0.5 | 0.2 | 0.0-0.6 | 99.6 | 99.1-100.0 |
| 30-44 | 1447 | 0.8 | 0.3-1.4 | 0.4 | 0.0-0.8 | 1.2 | 0.4-1.9 | 97.6 | 96.6-98.6 |
| 45-59 | 825 | 2.4 | 1.2-3.7 | 1.0 | 0.1-1.9 | 6.4 | 4.5-8.3 | 90.2 | 87.7-92.6 |
| 60-69 | 461 | 2.5 | 1.1-3.9 | 2.6 | 0.8-4.4 | 8.7 | 5.8-11.6 | 86.2 | 82.8-89.7 |
| **18-69** | **3546** | **0.9** | **0.6-1.2** | **0.6** | **0.3-0.8** | **2.2** | **1.7-2.7** | **96.4** | **95.7-97.1** |

**Annex 7. Alcohol consumption status of all respondents**

| Alcohol consumption status | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | | | | | | |
| | n | % Current drinker(past 30 days) | 95% CI | % Drank in past 12 months, not current | 95% CI | % Past 12 months abstainer | 95% CI | % Lifetimeab-stainer | 95% CI |
| 18-29 | 497 | 54.3 | 49.1-59.5 | 9.4 | 6.5-12.3 | 15.3 | 11.5-19.1 | 21.0 | 16.6-25.3 |
| 30-44 | 936 | 68.0 | 64.8-71.3 | 6.6 | 4.9-8.4 | 12.3 | 10.1-14.5 | 13.0 | 10.4-15.6 |
| 45-59 | 468 | 68.9 | 64.1-73.7 | 4.7 | 2.6-6.9 | 19.4 | 15.2-23.6 | 6.9 | 4.3-9.6 |
| 60-69 | 229 | 70.2 | 62.9-77.4 | 5.7 | 2.7-8.8 | 20.2 | 14.1-26.2 | 3.9 | 0.0-7.8 |
| **18-69** | **2130** | **61.9** | **59.0-64.9** | **7.6** | **6.1-9.1** | **15.3** | **13.2-17.4** | **15.2** | **12.9-17.5** |
| **Alcohol consumption status** | | | | | | | | | |
| Age Group (years) | Women | | | | | | | | |
| | n | % Current drinker(past 30 days) | 95% CI | % Drank in past 12 months, not current | 95% CI | % Past 12 months abstainer | 95% CI | % Lifetimeab-stainer | 95% CI |
| 18-29 | 813 | 28.0 | 24.5-31.4 | 11.6 | 9.0-14.1 | 21.4 | 18.3-24.6 | 39.0 | 35.2-42.8 |
| 30-44 | 1447 | 36.6 | 33.5-39.7 | 9.2 | 7.6-10.9 | 24.5 | 21.8-27.1 | 29.7 | 26.9-32.5 |
| 45-59 | 825 | 42.6 | 38.6-46.6 | 8.2 | 6.0-10.5 | 31.8 | 27.9-35.8 | 17.3 | 13.5-21.1 |
| 60-69 | 461 | 42.1 | 36.8-47.3 | 11.3 | 7.7-14.8 | 35.8 | 30.4-41.2 | 10.9 | 7.5-14.3 |
| **18-69** | **3546** | **34.3** | **32.1-36.4** | **10.2** | **8.8-11.6** | **25.2** | **23.2-27.2** | **30.3** | **28.2-32.5** |
| **Alcohol consumption status** | | | | | | | | | |
| Age Group (years) | Both Sexes | | | | | | | | |
| | n | % Current drinker(past 30 days) | 95% CI | % Drank in past 12 months, not current | 95% CI | % Past 12 months abstainer | 95% CI | % Lifetimeab-stainer | 95% CI |
| 18-29 | 1310 | 41.5 | 38.2-44.9 | 10.5 | 8.4-12.5 | 18.3 | 15.8-20.8 | 29.7 | 26.7-32.8 |
| 30-44 | 2383 | 52.2 | 49.6-54.7 | 7.9 | 6.8-9.1 | 18.4 | 16.6-20.3 | 21.4 | 19.4-23.5 |
| 45-59 | 1293 | 54.9 | 51.6-58.1 | 6.6 | 5.0-8.2 | 26.1 | 23.2-28.9 | 12.5 | 10.1-14.9 |
| 60-69 | 690 | 56.1 | 51.5-60.7 | 8.5 | 6.1-10.9 | 28.0 | 23.9-32.1 | 7.4 | 4.9-9.9 |
| **18-69** | **5676** | **48.1** | **46.1-50.0** | **8.9** | **7.9-9.9** | **20.3** | **18.7-21.8** | **22.8** | **21.1-24.5** |

**Annex 8:Frequency of alcohol consumption in the past 12 months among those respondents who drank in the last 12 months.**

| Frequency of alcohol consumption in the past 12 months | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | Men | | | | | | | | | | | | |
| Group (years) | N | % Daily | 95% CI | % 5-6 days/week | 95% CI | % 3-4 days/ week | 95% CI | % 1-2 days/ week | 95% CI | % 2-3 days/ month | 95% CI | % < oncea month | 95% CI |
| 18-29 | 59 | 2.5 | 0.9-4.2 | 1.5 | 0.2-2.8 | 14.1 | 9.5-18.8 | 31.1 | 24.6-37.5 | 26.3 | 19.8-32.8 | 20.2 | 15.1-25.3 |
| 30-44 | 41 | 11.7 | 9.0-14.4 | 8.2 | 5.6-10.8 | 17.5 | 14.4-20.6 | 36.6 | 32.9-40.3 | 16.5 | 13.5-19.4 | 6.5 | 4.5-8.5 |
| 45-59 | 24 | 10.6 | 7.2-14.0 | 7.0 | 4.2-9.7 | 17.0 | 12.8-21.3 | 36.0 | 30.3-41.8 | 17.1 | 12.6-21.6 | 7.5 | 4.5-10.5 |
| 60-69 | 16 | 10.9 | 5.2-16.7 | 10.3 | 4.2-16.3 | 22.9 | 15.9-29.8 | 25.3 | 17.8-32.7 | 19.8 | 12.6-26.9 | 6.8 | 2.7-11.0 |
| **18-69** | **140** | **7.6** | **6.1-9.0** | **5.3** | **4.0-6.5** | **16.4** | **14.1-18.6** | **33.3** | **30.3-36.4** | **21.0** | **17.8-24.2** | **12.5** | **10.2-14.9** |
| **Frequency of alcohol consumption in the past 12 months** | | | | | | | | | | | | | |
| Age | Women | | | | | | | | | | | | |
| Group (years) | n | % Daily | 95% CI | % 5-6 days/week | 95% CI | % 3-4 days/ week | 95% CI | % 1-2 days/ week | 95% CI | % 2-3 days/ month | 95% CI | % | 95% CI |
| 18-29 | 103 | 5.9 | 2.6-9.1 | 3.5 | 0.0-6.9 | 5.0 | 2.4-7.5 | 24.1 | 18.9-29.4 | 28.2 | 22.9-33.5 | 30.8 | 25.1-36.4 |
| 30-44 | 141 | 4.4 | 2.6-6.1 | 3.7 | 2.1-5.3 | 8.6 | 6.2-11.0 | 26.1 | 22.2-30.0 | 33.1 | 29.0-37.2 | 20.7 | 17.1-24.3 |
| 45-59 | 78 | 3.9 | 1.8-5.9 | 2.6 | 0.5-4.8 | 9.8 | 6.0-13.5 | 30.5 | 25.1-36.0 | 31.4 | 25.8-37.0 | 16.7 | 12.6-20.8 |
| 60-69 | 59 | 6.6 | 3.0-10.2 | 2.2 | 0.0-4.6 | 5.6 | 2.3-8.9 | 36.5 | 29.4-43.6 | 25.0 | 18.8-31.1 | 19.9 | 14.6-25.2 |
| **18-69** | **381** | **5.0** | **3.5-6.6** | **3.3** | **1.7-4.9** | **7.2** | **5.6-8.8** | **27.0** | **24.3-29.8** | **30.2** | **27.4-33.0** | **23.8** | **21.0-26.5** |
| **Frequency of alcohol consumption in the past 12 months** | | | | | | | | | | | | | |
| Age | Both Sexes | | | | | | | | | | | | |
| Group (years) | N | % Daily | 95% CI | % 5-6 days/week | 95% CI | % 3-4 days/ week | 95% CI | % 1-2 days/ week | 95% CI | % 2-3 days/ month | 95% CI | % | 95% CI |
| 18-29 | 162 | 3.8 | 2.2-5.4 | 2.2 | 0.7-3.7 | 10.7 | 7.6-13.8 | 28.5 | 24.2-32.9 | 27.0 | 22.5-31.5 | 24.1 | 20.2-28.0 |
| 30-44 | 182 | 8.9 | 7.1-10.6 | 6.5 | 4.8-8.1 | 14.1 | 11.9-16.2 | 32.5 | 29.8-35.2 | 22.9 | 20.3-25.4 | 12.0 | 10.1-13.9 |
| 45-59 | 102 | 7.6 | 5.5-9.7 | 5.1 | 3.3-6.9 | 13.8 | 10.9-16.7 | 33.6 | 29.7-37.5 | 23.4 | 19.7-27.2 | 11.6 | 9.2-14.0 |
| 60-69 | 75 | 9.2 | 5.5-12.9 | 6.9 | 3.2-10.7 | 15.8 | 11.3-20.3 | 29.9 | 24.9-34.9 | 21.9 | 16.8-27.0 | 12.2 | 8.8-15.7 |
| **18-69** | **521** | **6.6** | **5.5-7.6** | **4.5** | **3.5-5.5** | **12.8** | **11.2-14.3** | **30.9** | **28.7-33.0** | **24.6** | **22.4-26.9** | **16.9** | **15.1-18.8** |

**Annex 9: Percentage of respondents with different drinking levels.**

| Drinking at intermediate level among all respondents (40-59.9g of pure alcohol on average per occasion amongmen and 20-39.9g of pure alcohol on average per occasion among women) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % 40-59.9g | 95% CI | n | % 20-39.9g | 95% CI | n | % Intermediate level | 95% CI |
| 18-29 | 477 | 7.5 | 4.6-10.3 | 808 | 7.7 | 5.7-9.8 | 1285 | 7.6 | 5.7-9.5 |
| 30-44 | 901 | 6.9 | 5.2-8.6 | 1424 | 12.1 | 10.1-14.1 | 2325 | 9.6 | 8.3-10.9 |
| 45-59 | 447 | 7.2 | 4.2-10.2 | 813 | 11.6 | 9.0-14.2 | 1260 | 9.6 | 7.6-11.6 |
| 60-69 | 224 | 8.1 | 3.7-12.4 | 451 | 13.6 | 10.0-17.3 | 675 | 10.9 | 8.0-13.7 |
| **18-69** | **2049** | **7.3** | **5.8-8.8** | **3496** | **10.2** | **9.0-11.4** | **5545** | **8.8** | **7.8-9.8** |

| Drinking at lower-end level among all respondents (<40g of pure alcohol on average per occasion among menand <20g of pure alcohol on average per occasion among women) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Men | | | Women | | | Both Sexes | |
| Age Group (years) | n | % <40g | 95% CI | n | % <20g | 95% CI | n | % Lower-end level | 95% CI |
| 18-29 | 477 | 29.2 | 24.2-34.2 | 808 | 12.1 | 9.6-14.6 | 1285 | 20.7 | 17.8-23.7 |
| 30-44 | 901 | 33.8 | 30.3-37.3 | 1424 | 14.6 | 12.4-16.8 | 2325 | 24.0 | 21.8-26.1 |
| 45-59 | 447 | 37.2 | 31.8-42.6 | 813 | 14.1 | 11.1-17.1 | 1260 | 24.7 | 21.5-27.9 |
| 60-69 | 224 | 37.2 | 29.1-45.3 | 451 | 17.1 | 13.0-21.2 | 675 | 27.0 | 22.4-31.7 |
| **18-69** | **2049** | **32.4** | **29.5-35.3** | **3496** | **13.6** | **12.1-15.0** | **5545** | **22.8** | **21.1-24.6** |

**Annex 10: Frequency of failing to do what was normally expected because of drinking in the past 12 months among past 12 month drinkers**

| Frequency of failing to do what was normally expected from you during the past 12 months among past 12 month drinkers | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Men | | | | | | |
| Age Group (years) | n | % monthlyor more frequently | 95% CI | % less thanmonthly | 95% CI | % never | 95% CI |
| 18-29 | 324 | 14.9 | 10.4-19.5 | 13.8 | 9.6-18.1 | 71.2 | 65.4-77.1 |
| 30-44 | 705 | 20.2 | 16.3-24.2 | 9.0 | 6.7-11.2 | 70.8 | 66.7-74.9 |
| 45-59 | 355 | 16.6 | 12.3-20.8 | 10.1 | 6.7-13.6 | 73.3 | 68.0-78.5 |
| 60-69 | 174 | 12.0 | 5.9-18.1 | 7.2 | 2.5-12.0 | 80.7 | 73.5-88.0 |
| **18-69** | **1558** | **16.8** | **14.0-19.6** | **11.1** | **9.0-13.2** | **72.1** | **68.9-75.3** |

| Frequency of failing to do what was normally expected from you during the past 12 months among past 12 month drinkers | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Women | | | | | | |
| Age Group (years) | n | % monthlyor more frequently | 95% CI | % less thanmonthly | 95% CI | % never | 95% CI |
| 18-29 | 337 | 7.0 | 3.4-10.7 | 5.8 | 2.8-8.8 | 87.1 | 82.1-92.2 |
| 30-44 | 668 | 6.4 | 4.4-8.4 | 5.5 | 3.4-7.6 | 88.1 | 85.2-91.0 |
| 45-59 | 429 | 4.4 | 2.3-6.4 | 3.5 | 1.7-5.3 | 92.1 | 89.5-94.7 |
| 60-69 | 251 | 3.9 | 1.0-6.8 | 2.4 | 0.4-4.4 | 93.7 | 90.3-97.2 |
| **18-69** | **1685** | **6.0** | **4.4-7.7** | **5.0** | **3.6-6.3** | **89.0** | **86.8-91.2** |

**Annex 11: Frequency of needing a first drink in the morning to get going after a heavy drinking session during the past 12 months among past 12 month drinkers.**

| Frequency of needing a first drink in the morning to get going during the past 12 months among Past 12 month drinkers | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Men | | | | | | |
| Age Group (years) | n | % Monthlyor more frequently | 95% CI | % Less thanmonthly | 95% CI | % Never | 95% CI |
| 18-29 | 325 | 5.9 | 2.9-8.8 | 4.3 | 1.7-6.9 | 89.8 | 86.0-93.7 |
| 30-44 | 705 | 11.4 | 8.9-13.8 | 5.0 | 3.3-6.8 | 83.6 | 80.6-86.6 |
| 45-59 | 354 | 13.3 | 9.4-17.1 | 4.2 | 1.8-6.7 | 82.5 | 77.9-87.0 |
| 60-69 | 174 | 8.3 | 3.0-13.7 | 3.7 | 0.0-7.7 | 87.9 | 81.5-94.3 |
| **18-69** | **1558** | **9.1** | **7.4-10.9** | **4.5** | **3.1-5.9** | **86.4** | **84.2-88.5** |
| **Frequency of needing a first drink in the morning to get going during the past 12 months among Past 12 month drinkers** | | | | | | | |
| | Women | | | | | | |
| Age Group (years) | n | % Monthlyor more frequently | 95% CI | % less thanmonthly | 95% CI | % never | 95% CI |
| 18-29 | 336 | 5.3 | 1.9-8.6 | 1.2 | 0.1-2.3 | 93.6 | 90.1-97.0 |
| 30-44 | 668 | 4.2 | 2.5-6.0 | 1.8 | 0.8-2.8 | 93.9 | 92.0-95.9 |
| 45-59 | 426 | 2.8 | 1.0-4.5 | 1.2 | 0.2-2.2 | 96.1 | 94.1-98.0 |
| 60-69 | 252 | 3.6 | 0.5-6.7 | 3.0 | 0.0-6.3 | 93.5 | 89.0-97.9 |
| **18-69** | **1682** | **4.3** | **2.7-5.8** | **1.5** | **0.9-2.2** | **94.2** | **92.5-95.9** |

**Annex 12: Mean number of fruit, vegetable, and combined fruit and vegetable servings on average per day.**

| Mean number of servings of fruit on average per day | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | Mean number of servings | 95% CI | n | Mean number ofservings | 95% CI | n | Mean number of servings | 95% CI |
| 18-29 | 493 | 0.9 | 0.7-1.0 | 806 | 0.7 | 0.6-0.8 | 1299 | 0.8 | 0.7-0.9 |
| 30-44 | 925 | 0.7 | 0.6-0.8 | 1433 | 0.6 | 0.6-0.7 | 2358 | 0.7 | 0.6-0.8 |
| 45-59 | 463 | 0.6 | 0.5-0.7 | 815 | 0.6 | 0.5-0.7 | 1278 | 0.6 | 0.5-0.7 |
| 60-69 | 228 | 0.5 | 0.3-0.6 | 452 | 0.5 | 0.4-0.7 | 680 | 0.5 | 0.4-0.6 |
| **18-69** | **2109** | **0.7** | **0.7-0.8** | **3506** | **0.7** | **0.6-0.7** | **5615** | **0.7** | **0.6-0.8** |
| **Mean number of servings of vegetables on average per day** | | | | | | | | | |
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | Mean number of servings | 95% CI | n | Mean number ofservings | 95% CI | n | Mean number of servings | 95% CI |
| 18-29 | 490 | 1.5 | 1.2-1.7 | 804 | 1.8 | 1.6-1.9 | 1294 | 1.6 | 1.5-1.8 |
| 30-44 | 919 | 1.6 | 1.4-1.7 | 1432 | 1.8 | 1.7-2.0 | 2351 | 1.7 | 1.6-1.8 |
| 45-59 | 457 | 1.6 | 1.4-1.8 | 815 | 1.8 | 1.6-2.0 | 1272 | 1.7 | 1.6-1.9 |
| 60-69 | 222 | 1.3 | 1.1-1.5 | 456 | 1.6 | 1.3-1.8 | 678 | 1.5 | 1.3-1.6 |
| **18-69** | **2088** | **1.5** | **1.4-1.6** | **3507** | **1.8** | **1.7-1.9** | **5595** | **1.6** | **1.5-1.7** |

### Annex 13: Number of servings of fruit and/or vegetables on average per day

| Number of servings of fruit and/or vegetables on average per day | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | | | | | | |
| Age Group (years) | n | % no fruit and/ or vegetables | 95% CI | % 1-2 servings | 95% CI | % 3-4 servings | 95% CI | % ≥5 servings | 95% CI |
| 18-29 | 497 | 31.0 | 26.2-35.7 | 45.3 | 40.3-50.4 | 12.2 | 9.1-15.4 | 11.5 | 8.2-14.8 |
| 30-44 | 934 | 35.7 | 32.2-39.3 | 44.3 | 40.9-47.6 | 11.7 | 9.3-14.1 | 8.3 | 6.1-10.4 |
| 45-59 | 465 | 36.0 | 31.2-40.8 | 43.1 | 37.7-48.4 | 10.5 | 7.2-13.7 | 10.5 | 7.0-14.0 |
| 60-69 | 229 | 35.9 | 28.3-43.4 | 49.8 | 42.1-57.4 | 11.1 | 5.4-16.7 | 3.3 | 1.1-5.4 |
| **18-69** | **2125** | **33.6** | **30.7-36.4** | **44.9** | **42.2-47.7** | **11.7** | **9.9-13.5** | **9.8** | **7.9-11.7** |

| Number of servings of fruit and/or vegetables on average per day | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Women | | | | | | | | |
| Age Group (years) | n | % no fruit and/ or vegetables | 95% CI | % 1-2 serv- ings | 95% CI | % 3-4 servings | 95% CI | % ≥5 servings | 95% CI |
| 18-29 | 812 | 26.7 | 23.0-30.3 | 49.2 | 44.9-53.4 | 11.9 | 9.2-14.6 | 12.3 | 9.6-14.9 |
| 30-44 | 1445 | 29.9 | 27.1-32.7 | 46.1 | 43.2-49.0 | 12.0 | 9.8-14.2 | 11.9 | 9.7-14.1 |
| 45-59 | 823 | 31.1 | 27.0-35.3 | 44.9 | 40.3-49.5 | 14.2 | 10.6-17.7 | 9.8 | 7.2-12.5 |
| 60-69 | 459 | 36.7 | 31.5-41.9 | 44.2 | 38.7-49.7 | 11.5 | 7.6-15.4 | 7.6 | 4.7-10.4 |
| **18-69** | **3539** | **29.2** | **27.0-31.3** | **47.1** | **44.8-49.5** | **12.3** | **10.8-13.8** | **11.4** | **9.9-13.0** |

| Number of servings of fruit and/or vegetables on average per day | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Both Sexes | | | | | | | | |
| Age Group (years) | n | % no fruit and/ or vegetables | 95% CI | %1-2 serv- ings | 95% CI | % 3-4 servings | 95% CI | % ≥5 servings | 95% CI |
| 18-29 | 1309 | 28.9 | 25.8-31.9 | 47.2 | 43.8-50.6 | 12.1 | 9.9-14.2 | 11.9 | 9.6-14.2 |
| 30-44 | 2379 | 32.8 | 30.4-35.2 | 45.2 | 43.0-47.5 | 11.9 | 10.3-13.5 | 10.1 | 8.4-11.9 |
| 45-59 | 1288 | 33.4 | 30.1-36.7 | 44.0 | 40.5-47.6 | 12.4 | 10.0-14.9 | 10.1 | 7.9-12.3 |
| 60-69 | 688 | 36.3 | 31.6-41.0 | 47.0 | 42.2-51.8 | 11.3 | 7.8-14.8 | 5.4 | 3.6-7.2 |
| **18-69** | **5664** | **31.4** | **29.4-33.3** | **46.0** | **44.2-47.9** | **12.0** | **10.9-13.2** | **10.6** | **9.2-12.0** |

**Annex 14: Percentage of all respondents who think they consume far too much**

| Self-reported quantity of salt consumed | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Men | | | | | | | | | | |
| Age Group (years) | n | % Fartoo much | 95% CI | % Too much | 95% CI | % Just the right amount | 95% CI | % Too little | 95% CI | % Far too little | 95% CI |
| 18-29 | 497 | 0.9 | 0.0-1.8 | 9.7 | 6.8-12.5 | 78.5 | 74.5-82.6 | 10.5 | 7.5-13.4 | 0.5 | 0.0-1.1 |
| 30-44 | 934 | 0.4 | 0.0-0.8 | 11.2 | 8.9-13.5 | 76.7 | 73.7-79.7 | 11.3 | 8.9-13.7 | 0.4 | 0.0-0.9 |
| 45-59 | 468 | 0.7 | 0.0-1.7 | 9.3 | 6.1-12.5 | 74.7 | 70.0-79.4 | 14.8 | 11.2-18.4 | 0.5 | 0.0-1.1 |
| 60-69 | 228 | 0.1 | 0.0-0.4 | 11.4 | 5.5-17.2 | 62.7 | 55.1-70.4 | 22.7 | 16.4-28.9 | 3.1 | 0.4-5.7 |
| **18-69** | **2127** | **0.7** | **0.2-1.1** | **10.2** | **8.5-11.9** | **76.3** | **74.0-78.6** | **12.2** | **10.4-14.0** | **0.6** | **0.2-1.0** |
| Self-reported quantity of salt consumed | | | | | | | | | | | |
| | Women | | | | | | | | | | |
| Age Group (years) | n | % Fartoo much | 95% CI | % Too much | 95% CI | % Just the right amount | 95% CI | % Too little | 95% CI | % Far too little | 95% CI |
| 18-29 | 811 | 0.7 | 0.0-1.5 | 8.2 | 6.0-10.4 | 78.3 | 75.0-81.6 | 11.9 | 9.5-14.3 | 0.9 | 0.0-2.0 |
| 30-44 | 1445 | 0.1 | 0.0-0.2 | 7.3 | 5.7-8.9 | 76.9 | 74.3-79.6 | 15.0 | 12.8-17.3 | 0.7 | 0.3-1.1 |
| 45-59 | 822 | 0.3 | 0.0-0.7 | 6.0 | 4.1-7.9 | 69.3 | 65.1-73.6 | 22.6 | 18.7-26.4 | 1.8 | 0.9-2.8 |
| 60-69 | 460 | 0.0 | 0.0-0.1 | 5.4 | 3.1-7.7 | 60.0 | 54.8-65.3 | 29.0 | 24.0-33.9 | 5.6 | 2.5-8.6 |
| **18-69** | **3538** | **0.4** | **0.0-0.7** | **7.4** | **6.2-8.6** | **75.1** | **73.1-77.0** | **15.9** | **14.4-17.4** | **1.3** | **0.8-1.8** |
| Self-reported quantity of salt consumed | | | | | | | | | | | |
| | Both Sexes | | | | | | | | | | |
| Age Group (years) | n | % Fartoo much | 95% CI | % Too much | 95% CI | % Just the right amount | 95% CI | % Too little | 95% CI | % Far too little | 95% CI |
| 18-29 | 1308 | 0.8 | 0.2-1.4 | 9.0 | 7.2-10.7 | 78.4 | 75.7-81.1 | 11.2 | 9.3-13.0 | 0.7 | 0.1-1.3 |
| 30-44 | 2379 | 0.2 | 0.0-0.4 | 9.2 | 7.8-10.7 | 76.8 | 74.7-78.9 | 13.2 | 11.4-14.9 | 0.6 | 0.3-0.9 |
| 45-59 | 1290 | 0.5 | 0.0-1.0 | 7.6 | 5.8-9.3 | 71.8 | 68.6-75.0 | 18.9 | 16.3-21.6 | 1.2 | 0.6-1.8 |
| 60-69 | 688 | 0.1 | 0.0-0.2 | 8.4 | 5.2-11.6 | 61.4 | 56.6-66.1 | 25.8 | 21.9-29.8 | 4.3 | 2.4-6.2 |
| **18-69** | **5665** | **0.5** | **0.2-0.8** | **8.8** | **7.8-9.8** | **75.7** | **74.2-77.2** | **14.0** | **12.9-15.2** | **1.0** | **0.6-1.3** |

**Annex 15: Percentage of respondents who think lowering salt in diet is very, somewhat or not at all important**

| Importance of lowering salt in diet | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Men | | | | | | |
| Age Group (years) | n | % Very important | 95% CI | % Somewhat important | 95% CI | % Not at all important | 95% CI |
| 18-29 | 483 | 20.6 | 15.9-25.2 | 58.9 | 53.4-64.5 | 20.5 | 16.3-24.7 |
| 30-44 | 920 | 16.3 | 13.5-19.1 | 63.7 | 60.2-67.1 | 20.0 | 17.1-23.0 |
| 45-59 | 458 | 15.9 | 11.9-19.8 | 66.5 | 61.6-71.4 | 17.7 | 13.5-21.8 |
| 60-69 | 224 | 22.8 | 15.9-29.7 | 59.2 | 51.4-66.9 | 18.0 | 11.7-24.4 |
| **18-69** | **2085** | **18.6** | **16.2-21.0** | **61.6** | **58.6-64.6** | **19.7** | **17.3-22.2** |

| Importance of lowering salt in diet | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Women | | | | | | |
| Age Group (years) | n | % Very important | 95% CI | % Somewhatimportant | 95% CI | % Not at all important | 95% CI |
| 18-29 | 794 | 22.5 | 18.8-26.2 | 62.4 | 58.1-66.6 | 15.1 | 12.0-18.2 |
| 30-44 | 1422 | 19.4 | 16.7-22.2 | 68.0 | 64.9-71.2 | 12.5 | 10.3-14.8 |
| 45-59 | 809 | 23.5 | 19.2-27.8 | 63.4 | 58.7-68.0 | 13.1 | 10.0-16.3 |
| 60-69 | 452 | 27.9 | 22.6-33.2 | 61.9 | 56.2-67.5 | 10.2 | 6.8-13.6 |
| **18-69** | **3477** | **22.1** | **20.0-24.2** | **64.3** | **62.0-66.6** | **13.6** | **11.9-15.3** |

| Importance of lowering salt in diet | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Both Sexes | | | | | | |
| Age Group (years) | n | % Very important | 95% CI | %Somewhatimportant | 95% CI | % Not at all important | 95% CI |
| 18-29 | 1277 | 21.5 | 18.5-24.6 | 60.6 | 57.2-64.0 | 17.9 | 15.3-20.4 |
| 30-44 | 2342 | 17.9 | 15.9-19.9 | 65.9 | 63.5-68.3 | 16.2 | 14.3-18.1 |
| 45-59 | 1267 | 20.0 | 16.9-23.0 | 64.8 | 61.6-68.0 | 15.2 | 12.7-17.8 |
| 60-69 | 676 | 25.3 | 20.6-30.1 | 60.5 | 55.6-65.5 | 14.1 | 10.5-17.8 |
| **18-69** | **5562** | **20.4** | **18.6-22.1** | **63.0** | **61.0-64.9** | **16.7** | **15.2-18.2** |

**Annex 16 Percentage of respondents classified into three categories of total physical activity according to former recommendations.**

| Level of total physical activity according to former recommendations | | | | | | | |
|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | | | | |
| | n | % Low | 95% CI | % Moderate | 95% CI | % High | 95% CI |
| 18-29 | 479 | 4.6 | 2.2-6.9 | 10.8 | 6.6-14.9 | 84.7 | 80.0-89.3 |
| 30-44 | 907 | 5.9 | 4.3-7.6 | 7.9 | 6.1-9.8 | 86.1 | 83.6-88.6 |
| 45-59 | 452 | 5.1 | 2.8-7.5 | 8.3 | 5.8-10.9 | 86.5 | 83.0-90.1 |
| 60-69 | 218 | 12.9 | 7.7-18.0 | 12.1 | 6.9-17.2 | 75.1 | 68.2-81.9 |
| **18-69** | **2056** | **5.6** | **4.2-7.0** | **9.6** | **7.5-11.7** | **84.8** | **82.3-87.3** |

| Level of total physical activity according to former recommendations | | | | | | | |
|---|---|---|---|---|---|---|---|
| Age Group (years) | Women | | | | | | |
| | n | % Low | 95% CI | % Moderate | 95% CI | % High | 95% CI |
| 18-29 | 802 | 9.8 | 7.2-12.5 | 14.5 | 11.2-17.8 | 75.6 | 71.5-79.7 |
| 30-44 | 1409 | 7.7 | 6.0-9.5 | 11.7 | 9.5-14.0 | 80.6 | 77.8-83.3 |
| 45-59 | 806 | 9.2 | 7.0-11.5 | 9.5 | 6.9-12.0 | 81.3 | 78.1-84.5 |
| 60-69 | 446 | 15.3 | 11.2-19.5 | 13.5 | 10.0-16.9 | 71.2 | 65.9-76.5 |
| **18-69** | **3463** | **9.4** | **8.0-10.8** | **12.7** | **10.7-14.6** | **77.9** | **75.5-80.3** |

| Level of total physical activity according to former recommendations | | | | | | | |
|---|---|---|---|---|---|---|---|
| Age Group (years) | Both Sexes | | | | | | |
| | n | % Low | 95% CI | % Moderate | 95% CI | % High | 95% CI |
| 18-29 | 1281 | 7.1 | 5.3-9.0 | 12.6 | 10.0-15.2 | 80.2 | 77.0-83.5 |
| 30-44 | 2316 | 6.8 | 5.6-8.1 | 9.9 | 8.4-11.3 | 83.3 | 81.4-85.2 |
| 45-59 | 1258 | 7.3 | 5.7-8.9 | 8.9 | 7.1-10.8 | 83.7 | 81.3-86.1 |
| 60-69 | 664 | 14.1 | 10.8-17.4 | 12.8 | 9.8-15.7 | 73.1 | 69.0-77.2 |
| **18-69** | **5519** | **7.5** | **6.5-8.6** | **11.1** | **9.7-12.6** | **81.3** | **79.5-83.2** |

## Annex 17: Median minutes spent in work-, transport- and recreation-related physical activity on average per day

| Median minutes of work-related physical activity on average per day | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | Median minutes | Inter- quar-tile range (P25-P75) | n | Median Minutes | Inter- quar-tile range (P25-P75) | n | Median minutes | Inter- quar-tile range (P25-P75) |
| 18-29 | 479 | 214.3 | 30.0-360.0 | 802 | 188.6 | 50.0-360.0 | 1281 | 205.7 | 34.3-360.0 |
| 30-44 | 907 | 274.3 | 111.4-411.4 | 1409 | 300.0 | 102.9-437.1 | 2316 | 291.4 | 102.9-420.0 |
| 45-59 | 452 | 268.6 | 137.1-394.3 | 806 | 274.3 | 102.9-411.4 | 1258 | 274.3 | 128.6-411.4 |
| 60-69 | 218 | 204.3 | 42.9-360.0 | 446 | 180.0 | 34.3-368.6 | 664 | 188.6 | 42.9-360.0 |
| **18-69** | **2056** | **248.6** | **60.0-385.7** | **3463** | **248.6** | **60.0-394.3** | **5519** | **248.6** | **60.0-390.0** |

| Median minutes of work-related physical activity on average per day | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | | Men | | | Women | | | Both Sexes | |
| | n | Median minutes | Inter- quar-tile range (P25-P75) | n | Median Minutes | Inter- quar-tile range (P25-P75) | n | Median minutes | Inter- quar-tile range (P25-P75) |
| 18-29 | 479 | 60.0 | 25.7-120.0 | 802 | 42.9 | 17.1-102.9 | 1281 | 51.4 | 20.0-120.0 |
| 30-44 | 907 | 60.0 | 25.7-120.0 | 1409 | 57.1 | 25.7-120.0 | 2316 | 60.0 | 25.7-120.0 |
| 45-59 | 452 | 60.0 | 22.9-120.0 | 806 | 45.0 | 17.1-102.9 | 1258 | 51.4 | 20.0-120.0 |
| 60-69 | 218 | 51.4 | 25.7-105.0 | 446 | 34.3 | 12.9-68.6 | 664 | 42.9 | 17.1-90.0 |
| **18-69** | **2056** | **60.0** | **25.7-120.0** | **3463** | **50.0** | **17.1-102.9** | **5519** | **51.4** | **21.4-120.0** |

| Median minutes of work-related physical activity on average per day | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | Median minutes | Inter- quar-tile range (P25-P75) | n | Median Minutes | Inter- quar-tile range (P25-P75) | n | Median minutes | Inter- quartile range (P25-P75) |
| 18-29 | 479 | 21.4 | 0.0-47.1 | 802 | 0.0 | 0.0-12.9 | 1281 | 4.3 | 0.0-34.3 |
| 30-44 | 907 | 0.0 | 0.0-17.1 | 1409 | 0.0 | 0.0-0.0 | 2316 | 0.0 | 0.0-8.6 |
| 45-59 | 452 | 0.0 | 0.0-12.9 | 806 | 0.0 | 0.0-0.0 | 1258 | 0.0 | 0.0-0.0 |
| 60-69 | 218 | 0.0 | 0.0-0.0 | 446 | 0.0 | 0.0-0.0 | 664 | 0.0 | 0.0-0.0 |
| **18-69** | **2056** | **0.0** | **0.0-34.3** | **3463** | **0.0** | **0.0-4.3** | **5519** | **0.0** | **0.0-20.0** |

**Annex 18: Percentage of respondents classified as doing no work-, transport- or recreational-related physical activity**

| No work-related physical activity | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % no activity at work | 95% CI | n | % no activity at work | 95% CI | n | % no activity at work | 95% CI |
| 18-29 | 479 | 19.8 | 14.4-25.3 | 802 | 14.5 | 11.6-17.4 | 1281 | 17.2 | 13.8-20.6 |
| 30-44 | 907 | 12.3 | 9.7-14.8 | 1409 | 15.2 | 12.8-17.6 | 2316 | 13.8 | 11.9-15.6 |
| 45-59 | 452 | 12.1 | 8.7-15.4 | 806 | 12.6 | 9.7-15.5 | 1258 | 12.4 | 10.1-14.6 |
| 60-69 | 218 | 19.4 | 13.5-25.3 | 446 | 18.7 | 14.3-23.2 | 664 | 19.1 | 15.4-22.8 |
| **18-69** | **2056** | **16.2** | **13.3-19.1** | **3463** | **14.7** | **12.9-16.4** | **5519** | **15.4** | **13.6-17.3** |

| No transport-related physical activity | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % no activity fortransport | 95% CI | n | % no activity for transport | 95% CI | n | % no activity for transport | 95% CI |
| 18-29 | 479 | 3.6 | 1.3-6.0 | 802 | 2.9 | 1.6-4.3 | 1281 | 3.3 | 1.9-4.7 |
| 30-44 | 907 | 4.4 | 2.6-6.1 | 1409 | 2.3 | 1.3-3.3 | 2316 | 3.3 | 2.3-4.3 |
| 45-59 | 452 | 3.8 | 1.9-5.8 | 806 | 3.9 | 2.4-5.4 | 1258 | 3.9 | 2.6-5.1 |
| 60-69 | 218 | 1.6 | 0.0-3.3 | 446 | 7.4 | 4.5-10.3 | 664 | 4.6 | 2.8-6.3 |
| **18-69** | **2056** | **3.8** | **2.6-5.0** | **3463** | **3.2** | **2.4-4.0** | **5519** | **3.5** | **2.7-4.2** |

| No recreation-related physical activity | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % No activity at recreation | 95% CI | n | % No activity at recreation | 95% CI | n | % No activity at work | 95% CI |
| 18-29 | 479 | 3.6 | 1.3-6.0 | 802 | 2.9 | 1.6-4.3 | 1281 | 3.3 | 1.9-4.7 |
| 30-44 | 907 | 4.4 | 2.6-6.1 | 1409 | 2.3 | 1.3-3.3 | 2316 | 3.3 | 2.3-4.3 |
| 45-59 | 452 | 3.8 | 1.9-5.8 | 806 | 3.9 | 2.4-5.4 | 1258 | 3.9 | 2.6-5.1 |
| 60-69 | 218 | 1.6 | 0.0-3.3 | 446 | 7.4 | 4.5-10.3 | 664 | 4.6 | 2.8-6.3 |
| **18-69** | **2056** | **3.8** | **2.6-5.0** | **3463** | **3.2** | **2.4-4.0** | **5519** | **3.5** | **2.7-4.2** |

**Annex 19: Blood pressure measurement and diagnosis among all respondents.**

| Blood pressure measurement and diagnosis | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | | | | | | |
| Age Group (years) | 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 |
| 18-29 | 497 | 74.2 | 69.9-78.5 | 24.7 | 20.5-28.9 | 0.4 | 0.0-1.0 | 0.7 | 0.0-1.5 |
| 30-44 | 936 | 65.1 | 61.5-68.6 | 31.1 | 27.6-34.5 | 2.3 | 1.2-3.4 | 1.6 | 0.8-2.4 |
| 45-59 | 468 | 48.8 | 43.9-53.7 | 42.5 | 37.8-47.2 | 3.4 | 1.5-5.4 | 5.3 | 3.0-7.6 |
| 60-69 | 229 | 50.4 | 42.8-58.1 | 35.2 | 28.1-42.2 | 5.8 | 1.7-10.0 | 8.6 | 3.8-13.4 |
| **18-69** | **2130** | **65.8** | **63.1-68.6** | **30.2** | **27.5-32.8** | **1.8** | **1.2-2.4** | **2.2** | **1.5-2.9** |

| Blood pressure measurement and diagnosis | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Women | | | | | | | | |
| Age Group (years) | n | % Never measured | 95% CI | % Measured, not diag-nosed | 95% CI | % Diagnosed,but not within past 12 months | 95% CI | % Diagnosed within past 12 months | 95% CI |
| 18-29 | 813 | 47.6 | 43.3-52.0 | 48.2 | 43.9-52.4 | 1.5 | 0.6-2.3 | 2.7 | 1.5-4.0 |
| 30-44 | 1447 | 30.4 | 27.5-33.4 | 62.4 | 59.4-65.4 | 2.6 | 1.7-3.5 | 4.5 | 3.3-5.8 |
| 45-59 | 825 | 32.0 | 28.1-36.0 | 52.9 | 48.4-57.3 | 4.7 | 3.1-6.2 | 10.5 | 7.1-13.9 |
| 60-69 | 461 | 31.7 | 26.1-37.2 | 43.3 | 37.6-48.9 | 8.9 | 5.7-12.0 | 16.2 | 12.3-20.2 |
| **18-69** | **3546** | **38.3** | **36.0-40.7** | **53.3** | **51.0-55.6** | **2.9** | **2.3-3.5** | **5.6** | **4.7-6.5** |

**Annex 20: Blood sugar measurement and diagnosis among all respondents**

| Blood pressure measurement and diagnosis | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | | | | | | |
| Age Group (years) | n | % Never measured | 95% CI | % Measured,not diagnosed | 95% CI | % Diagnosed,but not within past 12 months | 95% CI | % Diagnosed within past12 months | 95% CI |
| 18-29 | 497 | 92.9 | 89.5-96.4 | 6.9 | 3.6-10.3 | 0.0 | 0.0-0.0 | 0.1 | 0.0-0.3 |
| 30-44 | 936 | 90.7 | 88.5-92.9 | 8.2 | 6.2-10.3 | 0.5 | 0.0-1.0 | 0.5 | 0.0-1.1 |
| 45-59 | 468 | 84.9 | 81.0-88.8 | 11.5 | 7.9-15.1 | 1.7 | 0.1-3.3 | 1.9 | 0.4-3.4 |
| 60-69 | 229 | 84.4 | 78.3-90.5 | 12.8 | 7.2-18.3 | 0.2 | 0.0-0.6 | 2.6 | 0.0-5.7 |
| **18-69** | **2130** | **90.4** | **88.6-92.3** | **8.4** | **6.6-10.2** | **0.5** | **0.2-0.7** | **0.7** | **0.3-1.1** |
| **Blood pressure measurement and diagnosis** | | | | | | | | | |
| | Women | | | | | | | | |
| Age Group (years) | n | % Never measured | 95% CI | % Measured,not diagnosed | 95% CI | % Diagnosed,but not within past 12 months | 95% CI | % Diagnosed within past12 months | 95% CI |
| 18-29 | 813 | 91.7 | 89.5-94.0 | 7.9 | 5.7-10.1 | 0.2 | 0.0-0.6 | 0.2 | 0.0-0.4 |
| 30-44 | 1447 | 85.1 | 82.7-87.5 | 12.9 | 10.9-15.0 | 1.1 | 0.0-2.1 | 0.9 | 0.4-1.5 |
| 45-59 | 825 | 80.6 | 76.8-84.3 | 15.4 | 12.3-18.6 | 0.6 | 0.0-1.2 | 3.4 | 0.5-6.3 |
| 60-69 | 461 | 81.6 | 77.6-85.6 | 13.9 | 10.3-17.5 | 1.5 | 0.3-2.7 | 3.0 | 1.1-4.8 |
| **18-69** | **3546** | **87.0** | **85.6-88.3** | **11.2** | **9.9-12.5** | **0.6** | **0.2-1.1** | **1.2** | **0.6-1.7** |

**Annex 21: Percentage of respondents who are have sought advice or treatment from a traditional healer for diabetes among those previously diagnosed.**

| Seen a traditional healer for diabetes among those previously diagnosed | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % Seentrad. Healer | 95% CI | n | % Seen trad. Healer | 95% CI | n | % Seen trad. Healer | 95% CI |
| 18-29 | 1 | 0.0 | 0.0-0.0 | 3 | 0.0 | 0.0-0.0 | 4 | 0.0 | 0.0-0.0 |
| 30-44 | 8 | 0.0 | 0.0-0.0 | 22 | 10.2 | 0.0-23.0 | 30 | 6.8 | 0.0-15.3 |
| 45-59 | 13 | 0.0 | 0.0-0.0 | 21 | 0.0 | 0.0-0.0 | 34 | 0.0 | 0.0-0.0 |
| 60-69 | 6 | 0.0 | 0.0-0.0 | 21 | 17.8 | 0.0-43.5 | 27 | 10.9 | 0.0-27.8 |
| **18-69** | **28** | **0.0** | **0.0-0.0** | **67** | **6.5** | **0.0-13.4** | **95** | **4.0** | **0.0-8.1** |

**Annex 22: Diabetes treatment results among those previously diagnosed with raised blood sugar or diabetes**

| Currently taking herbal or traditional treatment for diabetes among those previously diagnosed | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % Taking trad. meds | 95% CI | n | % Takingtrad. meds | 95% CI | n | % Takingtrad. meds | 95% CI |
| 18-29 | 1 | 0.0 | 0.0-0.0 | 3 | 0.0 | 0.0-0.0 | 4 | 0.0 | 0.0-0.0 |
| 30-44 | 8 | 0.0 | 0.0-0.0 | 22 | 4.9 | 0.0-14.8 | 30 | 3.3 | 0.0-9.8 |
| 45-59 | 13 | 0.0 | 0.0-0.0 | 21 | 2.9 | 0.0-9.2 | 34 | 1.7 | 0.0-5.0 |
| 60-69 | 6 | 0.0 | 0.0-0.0 | 21 | 0.0 | 0.0-0.0 | 27 | 0.0 | 0.0-0.0 |
| **18-69** | **28** | **0.0** | **0.0-0.0** | **67** | **2.9** | **0.0-7.2** | **95** | **1.8** | **0.0-4.4** |

**Annex 23: Total cholesterol measurement and diagnosis among all respondents.**

| Total cholesterol measurement and diagnosis | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | | | | | | |
| Age Group (years) | n | % Never mea-sured | 95% CI | % Measured, not diag-nosed | 95% CI | % Diagnosed,but not within past 12 months | 95% CI | % Diagnosed within past 12 months | 95% CI |
| 18-29 | 497 | 98.8 | 97.4-100.0 | 1.2 | 0.0-2.6 | 0.0 | 0.0-0.0 | 0.0 | 0.0-0.0 |
| 30-44 | 936 | 97.7 | 96.5-99.0 | 1.9 | 0.7-3.1 | 0.3 | 0.0-0.7 | 0.1 | 0.0-0.3 |
| 45-59 | 468 | 96.5 | 94.2-98.7 | 1.9 | 0.7-3.1 | 0.8 | 0.0-2.1 | 0.9 | 0.0-2.2 |
| 60-69 | 229 | 97.5 | 95.3-99.7 | 2.5 | 0.3-4.7 | 0.0 | 0.0-0.0 | 0.0 | 0.0-0.0 |
| **18-69** | **2130** | **98.0** | **97.2-98.8** | **1.6** | **0.9-2.4** | **0.2** | **0.0-0.4** | **0.2** | **0.0-0.4** |

| Total cholesterol measurement and diagnosis | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Women | | | | | | | | |
| Age Group (years) | n | % Never mea-sured | 95% CI | % measured, not diag-nosed | 95% CI | % diagnosed,but not within past 12 months | 95% CI | % diagnosed within past 12 months | 95% CI |
| 18-29 | 813 | 98.2 | 97.1-99.3 | 1.4 | 0.4-2.4 | 0.4 | 0.0-0.8 | 0.0 | 0.0-0.1 |
| 30-44 | 1447 | 97.0 | 95.6-98.4 | 2.5 | 1.2-3.8 | 0.1 | 0.0-0.3 | 0.4 | 0.0-0.7 |
| 45-59 | 825 | 96.1 | 94.1-98.0 | 2.9 | 1.2-4.6 | 0.6 | 0.0-1.6 | 0.4 | 0.0-0.9 |
| 60-69 | 461 | 96.1 | 93.6-98.7 | 3.0 | 0.6-5.4 | 0.9 | 0.0-1.9 | 0.0 | 0.0-0.1 |
| **18-69** | **3546** | **97.3** | **96.5-98.1** | **2.1** | **1.4-2.9** | **0.4** | **0.1-0.6** | **0.2** | **0.1-0.4** |

**Annex 24: Percentage of respondents who received lifestyle advice from a doctor or health worker during the past three years among all respondents**

| Advised by doctor or health worker to quit using tobacco or don't start | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % advised | 95% CI | n | % advised | 95% CI | n | % advised | 95% CI |
| 18-29 | 236 | 11.0 | 6.2-15.8 | 509 | 7.2 | 4.9-9.4 | 745 | 8.9 | 6.5-11.3 |
| 30-44 | 451 | 12.1 | 8.4-15.7 | 939 | 8.9 | 6.8-11.1 | 1390 | 10.2 | 8.3-12.2 |
| 45-59 | 229 | 16.7 | 11.4-21.9 | 512 | 13.2 | 8.3-18.1 | 741 | 14.6 | 10.9-18.4 |
| 60-69 | 124 | 18.9 | 10.1-27.6 | 291 | 17.4 | 12.2-22.6 | 415 | 18.1 | 13.3-22.9 |
| **18-69** | **1040** | **12.8** | **10.1-15.5** | **2251** | **9.5** | **8.1-10.9** | **3291** | **10.9** | **9.5-12.3** |

| Advised by doctor or health worker to reduce salt in the diet | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % advised | 95% CI | n | % advised | 95% CI | n | % advised | 95% CI |
| 18-29 | 236 | 8.1 | 3.5-12.7 | 509 | 14.9 | 11.5-18.4 | 745 | 11.9 | 9.0-14.7 |
| 30-44 | 451 | 15.0 | 11.4-18.7 | 939 | 19.3 | 16.3-22.3 | 1390 | 17.5 | 15.2-19.9 |
| 45-59 | 229 | 22.3 | 15.7-28.8 | 512 | 30.4 | 24.7-36.1 | 741 | 27.1 | 22.5-31.7 |
| 60-69 | 124 | 24.4 | 14.8-34.0 | 291 | 43.7 | 36.8-50.5 | 415 | 34.6 | 29.0-40.2 |
| **18-69** | **1040** | **13.7** | **11.2-16.3** | **2251** | **21.0** | **18.7-23.2** | **3291** | **17.9** | **16.1-19.6** |

**Annex 25: Percentage of respondents who have no natural teeth, 1-9 natural teeth, 10-19 natural teeth, or 20 or more natural teeth**

| Percentage of respondents with natural teeth | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | | | | | | |
| | n | % No natural teeth | 95% CI | n | % No natural teeth | 95% CI | n | % No natural teeth | 95% CI |
| 18-29 | 482 | 0.0 | 0.0-0.0 | 0.0 | 0.0-0.0 | 0.8 | 0.1-1.5 | 99.2 | 98.5-99.9 |
| 30-44 | 895 | 0.0 | 0.0-0.0 | 0.1 | 0.0-0.3 | 2.2 | 1.0-3.3 | 97.7 | 96.6-98.9 |
| 45-59 | 459 | 0.0 | 0.0-0.0 | 0.4 | 0.0-1.1 | 4.1 | 1.8-6.4 | 95.5 | 93.1-97.9 |
| 60-69 | 218 | 0.6 | 0.0-1.6 | 2.0 | 0.0-4.2 | 8.4 | 4.1-12.6 | 89.0 | 83.9-94.1 |
| **18-69** | **2054** | **0.0** | **0.0-0.1** | **0.2** | **0.0-0.4** | **2.2** | **1.5-3.0** | **97.5** | **96.7-98.3** |

| Percentage of respondents with natural teeth | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Women | | | | | | | | |
| | n | % No natural teeth | 95% CI | n | % No natural teeth | 95% CI | n | % No natural teeth | 95% CI |
| 18-29 | 788 | 0.0 | 0.0-0.0 | 0.4 | 0.0-1.1 | 1.1 | 0.1-2.2 | 98.5 | 97.2-99.8 |
| 30-44 | 1396 | 0.0 | 0.0-0.0 | 0.1 | 0.0-0.3 | 2.3 | 1.5-3.2 | 97.5 | 96.7-98.4 |
| 45-59 | 795 | 0.0 | 0.0-0.0 | 0.5 | 0.0-0.9 | 7.2 | 4.6-9.7 | 92.4 | 89.8-94.9 |
| 60-69 | 446 | 0.3 | 0.0-0.8 | 1.2 | 0.3-2.2 | 11.6 | 8.1-15.2 | 86.9 | 83.1-90.7 |
| **18-69** | **3425** | **0.0** | **0.0-0.0** | **0.4** | **0.0-0.7** | **3.3** | **2.4-4.1** | **96.4** | **95.5-97.3** |

**Annex 26: Main reasons for last visit to the dentist among those who ever visited a dentist, by sex and age group**

| Main reason for last visit to the dentist among those who ever visited a dentist | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Men | | | | | | | | | | |
| Age Group (years) | n | % Consultation/ advice | 95% CI | % Pain or trouble with teeth or gums | 95% CI | % Follow-uptreat-ment | 95% CI | % Routinecheck-uptreatment | 95% CI | %Other | 95% CI |
| 18-29 | 137 | 0.8 | 0.0-2.1 | 92.1 | 86.4-97.7 | 3.2 | 0.6-5.9 | 0.8 | 0.0-2.3 | 3.1 | 0.0-7.9 |
| 30-44 | 394 | 0.4 | 0.0-0.9 | 94.2 | 91.5-96.9 | 4.8 | 2.3-7.3 | 0.2 | 0.0-0.7 | 0.3 | 0.0-0.8 |
| 45-59 | 243 | 1.5 | 0.0-3.8 | 89.8 | 85.4-94.2 | 6.5 | 3.2-9.8 | 1.7 | 0.0-3.9 | 0.6 | 0.0-1.4 |
| 60-69 | 121 | 2.0 | 0.0-5.0 | 92.4 | 87.1-97.8 | 5.5 | 1.1-10.0 | 0.0 | 0.0-0.0 | 0.0 | 0.0-0.0 |
| **18-69** | **895** | **0.9** | **0.2-1.6** | **92.4** | **89.9-94.8** | **4.7** | **2.9-6.5** | **0.7** | **0.0-1.4** | **1.3** | **0.0-2.9** |

| Main reason for last visit to the dentist among those who ever visited a dentist | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Women | | | | | | | | | | |
| Age Group (years) | n | % Consultation/ advice | 95% CI | % Pain or trouble with teeth or gums | 95% CI | % Follow-uptreat-ment | 95% CI | % Routinecheck-uptreatment | 95% CI | % Other | 95% CI |
| 18-29 | 302 | 0.5 | 0.0-1.2 | 93.3 | 89.6-97.0 | 5.3 | 1.7-8.9 | 0.6 | 0.0-1.5 | 0.3 | 0.0-0.8 |
| 30-44 | 725 | 0.6 | 0.0-1.3 | 92.1 | 89.7-94.6 | 6.2 | 3.8-8.5 | 0.8 | 0.1-1.6 | 0.3 | 0.0-0.6 |
| 45-59 | 496 | 0.8 | 0.0-1.6 | 94.2 | 91.3-97.1 | 3.9 | 1.8-6.0 | 1.0 | 0.0-2.5 | 0.1 | 0.0-0.3 |
| 60-69 | 307 | 1.2 | 0.0-2.6 | 93.2 | 89.7-96.8 | 5.2 | 1.8-8.5 | 0.4 | 0.0-1.0 | 0.0 | 0.0-0.0 |
| **18-69** | **1830** | **0.7** | **0.3-1.1** | **93.1** | **91.2-95.0** | **5.3** | **3.5-7.1** | **0.8** | **0.2-1.4** | **0.2** | **0.0-0.4** |

### Annex 27: Percentage of respondents cleaning their teeth at least once / at least twice a day

| Percentage of respondents cleaning their teeth at least once a day | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % cleaningteeth at least daily | 95% CI | n | % cleaning teeth at least daily | 95% CI | n | % cleaning teeth at least daily | 95% CI |
| 18-29 | 497 | 73.3 | 68.9-77.8 | 813 | 76.8 | 73.2-80.4 | 1310 | 75.0 | 72.0-78.1 |
| 30-44 | 936 | 61.6 | 58.0-65.1 | 1447 | 65.1 | 61.8-68.3 | 2383 | 63.3 | 60.9-65.8 |
| 45-59 | 468 | 58.5 | 52.7-64.2 | 825 | 58.7 | 54.3-63.1 | 1293 | 58.6 | 55.0-62.2 |
| 60-69 | 227 | 47.6 | 40.3-55.0 | 460 | 50.3 | 44.7-56.0 | 687 | 49.0 | 44.2-53.7 |
| **18-69** | **2128** | **65.7** | **62.8-68.6** | **3545** | **68.1** | **65.7-70.5** | **5673** | **66.9** | **64.8-69.0** |

| Percentage of respondents cleaning their teeth at least twice a day | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % cleaning teeth at least twice aday | 95% CI | n | % cleaning teeth at least daily % cleaning teeth at least twice a day | 95% CI | n | % cleaning teeth at least twice a day | 95% CI |
| 18-29 | 497 | 23.4 | 18.1-28.6 | 813 | 26.3 | 22.7-29.8 | 1310 | 24.8 | 21.5-28.1 |
| 30-44 | 936 | 13.6 | 11.0-16.3 | 1447 | 18.6 | 16.2-21.0 | 2383 | 16.1 | 14.3-18.0 |
| 45-59 | 468 | 13.2 | 9.5-16.9 | 825 | 13.1 | 10.0-16.1 | 1293 | 13.1 | 10.8-15.4 |
| 60-69 | 227 | 9.4 | 4.4-14.4 | 460 | 15.8 | 11.3-20.4 | 687 | 12.6 | 9.2-16.1 |
| **18-69** | **2128** | **17.8** | **15.0-20.6** | **3545** | **20.8** | **18.8-22.8** | **5673** | **19.3** | **17.5-21.2** |

### Annex 28: Percentage of respondents using toothpaste among those cleaning their teeth

| Percentage of respondents using toothpaste among those cleaning their teeth | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % using toothpaste | 95% CI | n | % using toothpaste | 95% CI | n | % using toothpaste | 95% CI |
| 18-29 | 468 | 92.1 | 89.3-94.9 | 775 | 91.7 | 89.3-94.1 | 1243 | 91.9 | 89.9-93.8 |
| 30-44 | 854 | 85.7 | 83.0-88.3 | 1337 | 84.8 | 82.3-87.3 | 2191 | 85.2 | 83.3-87.2 |
| 45-59 | 411 | 79.1 | 74.4-83.8 | 721 | 76.0 | 72.3-79.7 | 1132 | 77.5 | 74.5-80.4 |
| 60-69 | 182 | 65.1 | 56.6-73.7 | 362 | 69.4 | 63.9-74.9 | 544 | 67.3 | 62.1-72.5 |
| **18-69** | **1915** | **86.6** | **84.6-88.6** | **3195** | **85.5** | **83.8-87.2** | **5110** | **86.1** | **84.7-87.5** |

**Annex 29: Percentage of respondents using toothpaste containing fluoride among those using toothpaste, by sex and age group**

| Percentage of respondents using toothpaste containing fluoride among those using toothpaste | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % using toothpastecon-taining fluoride | 95% CI | n | % using toothpastecontaining fluoride | 95% CI | n | % using toothpaste containing fluoride | 95% CI |
| 18-29 | 441 | 87.0 | 83.4-90.6 | 734 | 87.4 | 84.0-90.8 | 1175 | 87.2 | 84.6-89.9 |
| 30-44 | 803 | 81.2 | 78.2-84.2 | 1276 | 80.8 | 78.0-83.7 | 2079 | 81.0 | 78.8-83.3 |
| 45-59 | 387 | 74.0 | 68.7-79.3 | 688 | 72.3 | 68.2-76.5 | 1075 | 73.1 | 69.9-76.4 |
| 60-69 | 177 | 60.2 | 51.1-69.2 | 350 | 63.5 | 57.8-69.2 | 527 | 61.8 | 56.4-67.3 |
| **18-69** | **1808** | **81.7** | **79.3-84.2** | **3048** | **81.4** | **79.3-83.4** | **4856** | **81.5** | **79.8-83.3** |

**Annex 30: Percentage of respondents who use a toothbrush, wooden toothpicks, plastic toothpicks, thread (dental floss), charcoal, chewstick/miswak or something else to clean their teeth among those cleaning their teeth.**

| Percentage of respondents using various tools to clean teeth | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | | | | | | | | | |
| | n | % Tooth-brush | 95% CI | n | % Wooden tooth-picks | 95% CI | n | % Plastic tooth-picks | 95% CI | n | % Thread (dental floss) | 95% CI |
| 18-29 | 468 | 90.8 | 87.6-94.1 | 468 | 26.8 | 22.1-31.5 | 468 | 1.1 | 0.1-2.0 | 468 | 2.8 | 0.6-5.0 |
| 30-44 | 854 | 89.7 | 87.5-91.9 | 854 | 31.5 | 28.2-34.9 | 854 | 0.5 | 0.0-1.0 | 854 | 1.1 | 0.3-1.9 |
| 45-59 | 411 | 84.3 | 80.3-88.3 | 411 | 38.9 | 33.4-44.4 | 411 | 0.9 | 0.0-1.9 | 411 | 0.5 | 0.0-1.2 |
| 60-69 | 182 | 72.9 | 65.0-80.8 | 182 | 44.0 | 35.4-52.7 | 182 | 0.0 | 0.0-0.0 | 182 | 0.2 | 0.0-0.7 |
| **18-69** | **1915** | **88.5** | **86.5-90.5** | **1915** | **31.1** | **28.2-33.9** | **1915** | **0.8** | **0.3-1.3** | **1915** | **1.8** | **0.7-2.9** |

| Percentage of respondents using various tools to clean teeth | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | | | | | | |
| | n | % Charcoal | 95% CI | n | % Chewstick/ | 95% CI | n | % using toothpastecontain-ing fluoride | 95% CI |
| 18-29 | 468 | 3.6 | 1.6-5.6 | 468 | 2.9 | 1.0-4.7 | 468 | 5.5 | 2.8-8.3 |
| 30-44 | 854 | 5.2 | 3.5-6.9 | 854 | 2.4 | 1.1-3.7 | 854 | 5.6 | 3.9-7.4 |
| 45-59 | 411 | 4.1 | 1.5-6.7 | 411 | 0.4 | 0.0-1.0 | 411 | 7.3 | 4.3-10.4 |
| 60-69 | 182 | 4.9 | 0.8-9.1 | 182 | 0.5 | 0.0-1.4 | 182 | 7.2 | 3.2-11.2 |
| **18-69** | **1915** | **4.2** | **3.0-5.4** | **1915** | **2.2** | **1.2-3.2** | **1915** | **5.9** | **4.4-7.4** |

| Percentage of respondents using various tools to clean teeth | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Women | | | | | | | | | | | |
| | n | % Tooth-brush | 95% CI | n | % Wooden tooth-picks | 95% CI | n | % Plastic tooth-picks | 95% CI | n | % Thread (dental floss) | 95% CI |
| 18-29 | 775 | 92.8 | 90.3-95.4 | 775 | 27.3 | 23.4-31.2 | 775 | 0.9 | 0.1-1.8 | 775 | 1.5 | 0.5-2.4 |
| 30-44 | 1337 | 87.0 | 84.8-89.1 | 1337 | 36.2 | 33.0-39.4 | 1337 | 1.6 | 0.9-2.2 | 1337 | 2.1 | 1.2-3.1 |
| 45-59 | 721 | 78.7 | 75.0-82.4 | 721 | 45.0 | 40.3-49.8 | 721 | 1.2 | 0.4-2.0 | 721 | 2.0 | 0.5-3.4 |
| 60-69 | 362 | 75.1 | 70.2-80.1 | 362 | 43.7 | 37.8-49.6 | 362 | 1.1 | 0.0-2.1 | 362 | 1.8 | 0.2-3.5 |
| **18-69** | **3195** | **87.5** | **85.9-89.1** | **3195** | **34.1** | **31.7-36.5** | **3195** | **1.2** | **0.7-1.7** | **3195** | **1.8** | **1.2-2.4** |

| Percentage of respondents using various tools to clean teeth | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Women | | | | | | | | |
| | n | % Charcoal | 95% CI | n | % Chewstick/miswak | 95% CI | n | % Other | 95% CI |
| 18-29 | 775 | 7.9 | 5.6-10.3 | 775 | 0.8 | 0.0-1.5 | 775 | 2.9 | 1.6-4.1 |
| 30-44 | 1337 | 6.1 | 4.5-7.7 | 1337 | 1.0 | 0.4-1.6 | 1337 | 6.4 | 4.8-7.9 |
| 45-59 | 721 | 8.7 | 5.9-11.5 | 721 | 1.7 | 0.6-2.9 | 721 | 12.7 | 9.6-15.8 |
| 60-69 | 362 | 10.6 | 6.7-14.5 | 362 | 1.0 | 0.0-2.1 | 362 | 12.0 | 7.7-16.3 |
| **18-69** | **3195** | **7.6** | **6.4-8.9** | **3195** | **1.0** | **0.6-1.5** | **3195** | **6.2** | **5.2-7.2** |

| Percentage of respondents using various tools to clean teeth | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | Both Sexes | | | | | | | | | | | |
| Group (years) | n | % Tooth-brush | 95% CI | n | % Wooden tooth-picks | 95% CI | n | % Plastic tooth-picks | 95% CI | n | % Thread (dental floss) | 95% CI |
| 18-29 | 1243 | 91.8 | 89.5-94.1 | 1243 | 27.0 | 23.9-30.2 | 1243 | 1.0 | 0.4-1.6 | 1243 | 2.2 | 1.0-3.4 |
| 30-44 | 2191 | 88.3 | 86.7-89.9 | 2191 | 33.9 | 31.5-36.3 | 2191 | 1.0 | 0.6-1.5 | 2191 | 1.6 | 1.0-2.2 |
| 45-59 | 1132 | 81.3 | 78.5-84.0 | 1132 | 42.2 | 38.2-46.2 | 1132 | 1.1 | 0.4-1.7 | 1132 | 1.3 | 0.5-2.1 |
| 60-69 | 544 | 74.0 | 69.3-78.7 | 544 | 43.9 | 38.5-49.3 | 544 | 0.5 | 0.0-1.1 | 544 | 1.0 | 0.2-1.9 |
| **18-69** | **5110** | **88.0** | **86.6-89.4** | **5110** | **32.6** | **30.6-34.6** | **5110** | **1.0** | **0.6-1.3** | **5110** | **1.8** | **1.2-2.4** |

| Percentage of respondents using various tools to clean teeth | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Both Sexes | | | | | | | | |
| Age Group (years) | n | % Charcoal | 95% CI | n | % Chewstick/ miswak | 95% CI | n | % Other | 95% CI |
| 18-29 | 1243 | 5.7 | 4.1-7.3 | 1243 | 1.8 | 0.8-2.9 | 1243 | 4.2 | 2.7-5.8 |
| 30-44 | 2191 | 5.7 | 4.5-6.8 | 2191 | 1.7 | 0.9-2.4 | 2191 | 6.0 | 4.8-7.2 |
| 45-59 | 1132 | 6.5 | 4.6-8.5 | 1132 | 1.1 | 0.4-1.8 | 1132 | 10.2 | 8.0-12.4 |
| 60-69 | 544 | 7.8 | 4.9-10.6 | 544 | 0.8 | 0.0-1.5 | 544 | 9.6 | 6.6-12.6 |
| **18-69** | **5110** | **5.9** | **5.0-6.8** | **5110** | **1.6** | **1.1-2.2** | **5110** | **6.0** | **5.1-7.0** |

**Annex 31: Causes of serious injuries among respondents who were injured accidentally from something other than a road traffic crash.**

| Percentage of respondents who were seriously injured other than road traffic crashes | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | Men | | | | | | | | | | | | | | |
| Group (years) | n | % Fall | 95% CI | % Burn | 95% CI | % Poisoning | 95% CI | % Cut | 95% CI | % Near drowning | 95% CI | % Animal Bites | 95% CI | % Other | 95% CI |
| 25-34 | 7 | 43.8 | 29.8-57.8 | 2.4 | 0.0-5.4 | 2.5 | 0.0-7.3 | 38.7 | 25.0-52.4 | - | - | 1.5 | 0.0-4.4 | 11.2 | 3.4-18.9 |
| 35-44 | 26 | 39.0 | 27.8-50.2 | 1.9 | 0.0-4.6 | 0.0 | 0.0-0.0 | 34.6 | 23.3-45.8 | - | - | 0.0 | 0.0-0.0 | 24.6 | 15.4-33.8 |
| 45-54 | 11 | 44.9 | 29.0-60.8 | 0.0 | 0.0-0.0 | 0.0 | 0.0-0.0 | 31.0 | 14.3-47.8 | - | - | 3.7 | 0.0-8.9 | 20.4 | 7.3-33.5 |
| 55-64 | 0 | 68.6 | 44.8-92.4 | 0.0 | 0.0-0.0 | 2.2 | 0.0-6.5 | 29.2 | 5.8-52.7 | - | - | 0.0 | 0.0-0.0 | 0.0 | 0.0-0.0 |
| **25-64** | **44** | **43.8** | **35.1-52.5** | **1.8** | **0.1-3.5** | **1.3** | **0.0-3.7** | **35.8** | **27.3-44.3** | **-** | **-** | **1.2** | **0.0-2.8** | **16.1** | **10.9-21.4** |

| Percentage of respondents who were seriously injured other than road traffic crashes | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | Women | | | | | | | | | | | | | | |
| Group (years) | n | % Fall | 95% CI | % Burn | 95% CI | % Poisoning | 95% CI | % Cut | 95% CI | % Near drowning | 95% CI | % Animal Bites | 95% CI | % Other | 95% CI |
| 25-34 | 1 | 49.8 | 36.5-63.1 | 6.0 | 0.0-13.1 | 4.9 | 0.0-10.7 | 30.7 | 18.5-42.9 | 0.5 | 0.0-1.4 | 0.2 | 0.0-0.7 | 7.9 | 0.0-16.4 |
| 35-44 | 0 | 40.8 | 28.8-52.7 | 2.0 | 0.0-4.8 | 2.2 | 0.0-5.4 | 36.1 | 25.8-46.5 | 0.0 | 0.0-0.0 | 0.0 | 0.0-0.0 | 18.9 | 9.5-28.2 |
| 45-54 | 1 | 57.3 | 43.5-71.1 | 1.1 | 0.0-2.8 | 6.9 | 1.0-12.9 | 21.4 | 11.5-31.2 | 0.0 | 0.0-0.0 | 0.5 | 0.0-1.4 | 12.8 | 2.9-22.7 |
| 55-64 | 0 | 56.9 | 39.6-74.2 | 0.0 | 0.0-0.0 | 1.8 | 0.0-5.5 | 25.9 | 10.0-41.7 | 0.0 | 0.0-0.0 | 0.0 | 0.0-0.0 | 15.4 | 4.1-26.7 |
| **25-64** | **2** | **49.0** | **41.3-56.7** | **3.5** | **0.1-6.9** | **4.3** | **1.3-7.3** | **30.2** | **24.1-36.4** | **0.2** | **0.0-0.6** | **0.2** | **0.0-0.5** | **12.5** | **6.9-18.1** |

| Percentage of respondents who were seriously injured other than road traffic crashes | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Both Sexes | | | | | | | | | | | | | | |
| | n | % Fall | 95% CI | % Burn | 95% CI | % Poisoning | 95% CI | % Cut | 95% CI | % Near drowning | 95% CI | % Animal Bites | 95% CI | % Other | 95% CI |
| 25-34 | 2 | 46.4 | 36.5-56.3 | 4.0 | 0.4-7.6 | 3.5 | 0.0-7.3 | 35.2 | 26.1-44.3 | 0.2 | 0.0-0.6 | 0.9 | 0.0-2.6 | 9.7 | 4.2-15.3 |
| 35-44 | 0 | 39.8 | 31.3-48.3 | 1.9 | 0.0-3.9 | 1.0 | 0.0-2.4 | 35.2 | 27.3-43.2 | 0.0 | 0.0-0.0 | 0.0 | 0.0-0.0 | 22.1 | 15.3-28.9 |
| 45-54 | 3 | 51.5 | 41.1-61.8 | 0.6 | 0.0-1.5 | 3.7 | 0.6-6.7 | 25.9 | 16.2-35.6 | 0.0 | 0.0-0.0 | 2.0 | 0.0-4.5 | 16.4 | 8.1-24.6 |
| 55-64 | 0 | 62.8 | 47.4-78.1 | 0.0 | 0.0-0.0 | 2.0 | 0.0-4.8 | 27.6 | 13.5-41.7 | 0.0 | 0.0-0.0 | 0.0 | 0.0-0.0 | 7.7 | 1.8-13.6 |
| **25-64** | **5** | **46.2** | **40.6-51.7** | **2.6** | **0.8-4.4** | **2.7** | **0.7-4.6** | **33.3** | **28.0-38.5** | **0.1** | **0.0-0.3** | **0.8** | **0.0-1.6** | **14.5** | **10.7-18.2** |

### Annex 32: Mean systolic blood pressure (mmHg)

| Mean systolic blood pressure (mmHg) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | Mean | 95% CI | n | Mean | 95% CI | n | Mean | 95% CI |
| 18-29 | 495 | 120.4 | 119.3-121.5 | 813 | 114.4 | 113.5-115.3 | 1308 | 117.5 | 116.8-118.2 |
| 30-44 | 934 | 122.5 | 121.6-123.5 | 1446 | 118.0 | 117.2-118.9 | 2380 | 120.3 | 119.6-121.0 |
| 45-59 | 467 | 124.5 | 122.9-126.2 | 822 | 125.5 | 124.1-127.0 | 1289 | 125.1 | 124.0-126.2 |
| 60-69 | 229 | 130.3 | 126.6-134.0 | 460 | 137.3 | 134.8-139.8 | 689 | 133.8 | 131.5-136.1 |
| **18-69** | **2125** | **122.3** | **121.7-123.0** | **3541** | **119.0** | **118.4-119.6** | **5666** | **120.7** | **120.2-121.2** |

### Annex 33: Mean diastolic blood pressure (mmHg)

| Mean systolic blood pressure (mmHg) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | Mean | 95% CI | n | Mean | 95% CI | n | Mean | 95% CI |
| 18-29 | 495 | 75.8 | 75.0-76.7 | 813 | 77.1 | 76.4-77.7 | 1308 | 76.4 | 75.9-77.0 |
| 30-44 | 934 | 80.5 | 79.7-81.4 | 1446 | 80.0 | 79.4-80.6 | 2380 | 80.3 | 79.7-80.8 |
| 45-59 | 467 | 82.2 | 81.1-83.3 | 822 | 83.5 | 82.7-84.4 | 1289 | 82.9 | 82.2-83.6 |
| 60-69 | 229 | 82.6 | 80.5-84.7 | 460 | 85.3 | 84.0-86.6 | 689 | 83.9 | 82.7-85.2 |
| **18-69** | **2125** | **78.7** | **78.2-79.3** | **3541** | **79.7** | **79.3-80.1** | **5666** | **79.2** | **78.9-79.6** |

### Annex 34: Systolic Blood Pressure ≥140 and/or Diastolic Blood Pressure ≥ 90 mmHg

| SBP ≥140 and/or DBP ≥ 90 mmHg | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % | 95% CI | n | % | 95% CI | n | % | 95% CI |
| 18-29 | 487 | 8.4 | 5.8-11.0 | 794 | 7.8 | 5.6-10.0 | 1281 | 8.1 | 6.5-9.8 |
| 30-44 | 919 | 17.5 | 14.7-20.3 | 1425 | 15.6 | 13.4-17.7 | 2344 | 16.5 | 14.6-18.4 |
| 45-59 | 456 | 25.0 | 20.2-29.8 | 811 | 30.1 | 26.1-34.1 | 1267 | 27.7 | 24.5-30.9 |
| 60-69 | 225 | 33.3 | 25.7-41.0 | 457 | 48.0 | 42.4-53.6 | 682 | 40.7 | 36.0-45.4 |
| **18-69** | **2087** | **15.5** | **13.6-17.3** | **3487** | **16.9** | **15.4-18.4** | **5574** | **16.2** | **15.0-17.4** |

### Annex 35: Systolic Blood Pressure ≥160 and/or Diastolic Blood Pressure ≥ 100 mmHg

| SBP ≥140 and/or DBP ≥ 90 mmHg or currently on medication for raised blood pressure | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % | 95% CI | n | % | 95% CI | n | % | 95% CI |
| 18-29 | 487 | 1.3 | 0.0-2.7 | 794 | 1.1 | 0.4-1.8 | 1281 | 1.2 | 0.5-2.0 |
| 30-44 | 919 | 4.4 | 2.8-5.9 | 1425 | 4.2 | 3.1-5.4 | 2344 | 4.3 | 3.3-5.3 |
| 45-59 | 456 | 5.8 | 3.6-8.0 | 811 | 9.4 | 7.1-11.7 | 1267 | 7.7 | 6.1-9.4 |
| 60-69 | 225 | 10.5 | 5.3-15.7 | 457 | 19.2 | 14.8-23.6 | 682 | 14.8 | 11.5-18.2 |
| **18-69** | **2087** | **3.6** | **2.7-4.5** | **3487** | **4.8** | **4.1-5.5** | **5574** | **4.2** | **3.6-4.8** |

### Annex 36: Systolic Blood Pressure ≥140 and/or Diastolic Blood Pressure ≥ 90 mmHg or currently on medication for raised blood pressure

| SBP ≥140 and/or DBP ≥ 90 mmHg or currently on medication for raised blood pressure | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | Women | | | Both Sexes | | |
| Age Group (years) | n | % | 95% CI | n | % | 95% CI | n | % | 95% CI |
| 18-29 | 487 | 8.4 | 5.8-11.0 | 794 | 8.6 | 6.3-10.8 | 1281 | 8.5 | 6.8-10.2 |
| 30-44 | 919 | 17.7 | 14.9-20.5 | 1425 | 16.0 | 13.8-18.2 | 2344 | 16.8 | 14.9-18.7 |
| 45-59 | 456 | 25.0 | 20.2-29.8 | 811 | 32.1 | 27.9-36.3 | 1267 | 28.8 | 25.5-32.1 |
| 60-69 | 225 | 35.7 | 28.1-43.3 | 457 | 50.5 | 44.8-56.2 | 682 | 43.2 | 38.5-47.8 |
| **18-69** | **2087** | **15.7** | **13.8-17.5** | **3487** | **17.9** | **16.4-19.4** | **5574** | **16.8** | **15.6-18.0** |

**Annex 37: Systolic Blood Pressure ≥160 and/or Diastolic Blood Pressure ≥ 100 mmHg or currently on medication for raised blood pressure**

| SBP ≥160 and/or DBP ≥ 100 mmHg or currently on medication for raised blood pressure | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % | 95% CI | n | % | 95% CI | n | % | 95% CI |
| 18-29 | 487 | 1.3 | 0.0-2.7 | 794 | 1.9 | 0.8-3.0 | 1281 | 1.6 | 0.7-2.5 |
| 30-44 | 919 | 4.6 | 3.0-6.1 | 1425 | 5.3 | 4.0-6.6 | 2344 | 4.9 | 3.9-6.0 |
| 45-59 | 456 | 6.2 | 3.9-8.4 | 811 | 12.8 | 10.1-15.5 | 1267 | 9.7 | 7.9-11.5 |
| 60-69 | 225 | 17.9 | 11.2-24.6 | 457 | 27.2 | 22.0-32.5 | 682 | 22.6 | 18.2-26.9 |
| **18-69** | **2087** | **4.2** | **3.2-5.1** | **3487** | **6.6** | **5.7-7.4** | **5574** | **5.4** | **4.7-6.0** |

**Annex 38: Raised blood pressure diagnosis, treatment and control among those with raised blood pressure (SBP ≥ 140 and/or DBP ≥ 90 mmHg) or on medication for raised blood pressure**

| Raised blood pressure diagnosis, treatment and control among those with raised blood pressure (SBP ≥ 140 and/or DBP ≥ 90 mmHg) or on medication for raised blood pressure | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | | | | | | |
| | n | % with raised blood pressure,not previously diagnosed | 95% CI | % with previ- ously diagnosedraised blood pressure, not onmed- ication | 95% CI | % with previously diagnosed raised blood pressure, onmedica- tion but notcontrolled | 95% CI | % with previously diagnosed raised blood pressure, on medication andblood pres- sure controlled | 95% CI |
| 18-29 | 46 | 95.3 | 88.1-100.0 | 3.6 | 0.0-10.5 | 1.1 | 0.0-3.4 | 0.0 | 0.0-0.0 |
| 30-44 | 167 | 92.3 | 88.0-96.6 | 5.4 | 2.1-8.7 | 1.4 | 0.0-3.0 | 0.9 | 0.0-2.2 |
| 45-59 | 116 | 83.6 | 76.7-90.4 | 12.9 | 6.7-19.2 | 3.5 | 0.5-6.4 | 0.0 | 0.0-0.0 |
| 60-69 | 77 | 66.2 | 52.2-80.1 | 9.8 | 0.0-20.0 | 17.3 | 4.9-29.7 | 6.7 | 0.4-13.0 |
| **18-69** | **406** | **87.0** | **83.2-90.9** | **7.5** | **4.3-10.6** | **4.2** | **2.0-6.4** | **1.3** | **0.3-2.4** |

| Raised blood pressure diagnosis, treatment and control among those with raised blood pressure (SBP ≥ 140 and/or DBP ≥ 90 mmHg) or on medication for raised blood pressure | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Women | | | | | | | | |
| | n | % with raised blood pressure,not previously diagnosed | 95% CI | % with previously diagnosed raised blood pres- sure, not onmedication | 95% CI | % with previously diag- nosed raised bloodpres- sure, onmedicationbut not controlled | 95% CI | % with previously diag- nosed raised blood pres- sure, on medication and blood pressure controlled | 95% CI |
| 18-29 | 72 | 83.0 | 72.1-94.0 | 6.8 | 0.8-12.8 | 1.3 | 0.0-3.7 | 8.9 | 0.0-18.5 |
| 30-44 | 234 | 73.9 | 67.2-80.6 | 17.7 | 11.6-23.7 | 5.7 | 1.8-9.6 | 2.7 | 0.5-5.0 |
| 45-59 | 267 | 60.5 | 51.8-69.3 | 19.6 | 10.8-28.3 | 13.7 | 8.3-19.1 | 6.2 | 2.5-9.9 |
| 60-69 | 228 | 59.2 | 51.3-67.0 | 16.5 | 11.3-21.7 | 19.4 | 13.0-25.7 | 5.0 | 2.0-8.0 |
| **18-69** | **801** | **68.8** | **64.5-73.2** | **15.8** | **12.1-19.5** | **9.8** | **7.3-12.3** | **5.5** | **3.0-8.0** |

**Annex 39: Percentage of respondents (excluding pregnant women) in each BMI category**

| BMI classifications | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Men | | | | | | | | |
| Age Group (years) | n | % Under-weight <18.5 | 95% CI | % Normalweight 18.5-24.9 | 95% CI | % BMI 25.0-29.9 | 95% CI | % Obese ≥30.0 | 95% CI |
| 18-29 | 752 | 6.2 | 4.0-8.4 | 71.1 | 66.9-75.3 | 17.8 | 14.4-21.1 | 4.9 | 3.1-6.7 |
| 30-44 | 1351 | 6.0 | 4.6-7.5 | 62.5 | 59.4-65.7 | 21.1 | 18.4-23.8 | 10.4 | 8.6-12.2 |
| 45-59 | 819 | 11.7 | 9.2-14.2 | 61.6 | 57.5-65.7 | 18.7 | 15.5-21.9 | 8.0 | 5.5-10.5 |
| 60-69 | 459 | 12.7 | 9.5-15.8 | 67.3 | 62.3-72.3 | 12.3 | 8.7-16.0 | 7.7 | 4.5-10.9 |
| **18-69** | **3381** | **7.6** | **6.3-8.9** | **66.4** | **64.0-68.8** | **18.6** | **16.7-20.5** | **7.4** | **6.3-8.5** |

| Women | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Women | | | | | | | | |
| Age Group (years) | n | % Under-weight <18.5 | 95% CI | % Normalweight 18.5-24.9 | 95% CI | % BMI 25.0-29.9 | 95% CI | % Obese ≥30.0 | 95% CI |
| 18-29 | 752 | 6.2 | 4.0-8.4 | 71.1 | 66.9-75.3 | 17.8 | 14.4-21.1 | 4.9 | 3.1-6.7 |
| 30-44 | 1351 | 6.0 | 4.6-7.5 | 62.5 | 59.4-65.7 | 21.1 | 18.4-23.8 | 10.4 | 8.6-12.2 |
| 45-59 | 819 | 11.7 | 9.2-14.2 | 61.6 | 57.5-65.7 | 18.7 | 15.5-21.9 | 8.0 | 5.5-10.5 |
| 60-69 | 459 | 12.7 | 9.5-15.8 | 67.3 | 62.3-72.3 | 12.3 | 8.7-16.0 | 7.7 | 4.5-10.9 |
| **18-69** | **3381** | **7.6** | **6.3-8.9** | **66.4** | **64.0-68.8** | **18.6** | **16.7-20.5** | **7.4** | **6.3-8.5** |

| Both Sexes | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Women | | | | | | | | |
| Age Group (years) | n | % Under-weight <18.5 | 95% CI | % Normalweight 18.5-24.9 | 95% CI | % BMI 25.0-29.9 | 95% CI | % Obese ≥30.0 | 95% CI |
| 18-29 | 1247 | 8.5 | 6.0-10.9 | 77.0 | 73.9-80.0 | 12.0 | 9.9-14.1 | 2.6 | 1.6-3.5 |
| 30-44 | 2284 | 7.4 | 6.0-8.7 | 68.9 | 66.5-71.2 | 18.0 | 16.1-19.9 | 5.8 | 4.8-6.8 |
| 45-59 | 1285 | 14.1 | 11.8-16.3 | 64.8 | 61.7-68.0 | 15.7 | 13.2-18.2 | 5.4 | 3.7-7.1 |
| 60-69 | 687 | 18.6 | 14.9-22.2 | 66.8 | 62.1-71.4 | 8.6 | 6.2-11.0 | 6.0 | 3.0-9.1 |
| **18-69** | **5503** | **9.7** | **8.4-11.0** | **71.7** | **69.8-73.5** | **14.3** | **13.0-15.6** | **4.3** | **3.6-4.9** |

### Annex 40: Prevalence of raised fasting blood glucose

| Currently on medication for diabetes | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % | 95% CI | n | % | 95% CI | n | % | 95% CI |
| 18-29 | 497 | 0.2 | 0.0-0.7 | 813 | 0.3 | 0.0-0.7 | 1310 | 0.3 | 0.0-0.6 |
| 30-44 | 936 | 0.1 | 0.0-0.4 | 1447 | 1.0 | 0.0-2.2 | 2383 | 0.6 | 0.0-1.2 |
| 45-59 | 468 | 1.4 | 0.0-2.9 | 825 | 3.7 | 0.5-6.9 | 1293 | 2.6 | 0.8-4.4 |
| 60-69 | 229 | 0.5 | 0.0-1.6 | 461 | 3.0 | 1.1-4.9 | 690 | 1.8 | 0.7-2.9 |
| **18-69** | **2130** | **0.4** | **0.1-0.7** | **3546** | **1.3** | **0.7-1.9** | **5676** | **0.9** | **0.5-1.2** |

### Annex 41: Raised blood glucose diagnosis and treatment among all respondents.

| Raised blood glucose diagnosis and treatment among all respondents | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | | | | | | |
| | n | % with raised blood glucose,not previously diagnosed | 95% CI | % with previously diagnosed raised blood glucose, noton medication | 95% CI | % with previouslydiagnosed raised blood glucose, on med-ication | 95% CI | % | 95% CI |
| 18-29 | 444 | 1.8 | 0.0-3.6 | 0.1 | 0.0-0.3 | 0.0 | 0.0-0.0 | 0.3 | 0.0-0.6 |
| 30-44 | 850 | 2.1 | 0.8-3.4 | 1.0 | 0.1-1.9 | 0.1 | 0.0-0.4 | 0.6 | 0.0-1.2 |
| 45-59 | 425 | 3.1 | 1.0-5.2 | 2.3 | 0.7-4.0 | 1.6 | 0.0-3.3 | 2.6 | 0.8-4.4 |
| 60-69 | 210 | 3.7 | 0.0-7.9 | 2.5 | 0.0-5.9 | 0.6 | 0.0-1.8 | 1.8 | 0.7-2.9 |
| **18-69** | **1929** | **2.2** | **1.1-3.4** | **0.9** | **0.4-1.4** | **0.3** | **0.1-0.6** | **0.9** | **0.5-1.2** |

### Annex 42: Prevalence of raised blood total cholesterol ≥5.0 mmol.L or ≥190 mg/dl

| Total choleste<rol ≥ 5.0 mmol/L or ≥ 190 mg/dl | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % | 95% CI | n | % | 95% CI | n | % | 95% CI |
| 18-29 | 459 | 1.9 | 0.2-3.7 | 763 | 1.7 | 0.7-2.7 | 1222 | 1.8 | 0.8-2.8 |
| 30-44 | 867 | 2.4 | 1.2-3.6 | 1364 | 2.7 | 1.8-3.6 | 2231 | 2.6 | 1.8-3.3 |
| 45-59 | 436 | 2.5 | 0.6-4.5 | 789 | 5.3 | 3.4-7.1 | 1225 | 4.0 | 2.6-5.4 |
| 60-69 | 219 | 0.6 | 0.0-1.8 | 442 | 11.3 | 3.8-18.9 | 661 | 6.1 | 2.0-10.1 |
| **18-69** | **1981** | **2.1** | **1.2-3.0** | **3358** | **3.3** | **2.5-4.1** | **5339** | **2.7** | **2.1-3.3** |

| Total cholesterol ≥ 5.0 mmol/L or ≥ 190 mg/dl | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | % | 95% CI | n | % | 95% CI | n | % | 95% CI |
| 18-29 | 459 | 1.4 | 0.0-3.0 | 763 | 0.1 | 0.0-0.2 | 1222 | 0.8 | 0.0-1.6 |
| 30-44 | 867 | 0.3 | 0.0-0.6 | 1364 | 0.5 | 0.0-0.9 | 2231 | 0.4 | 0.1-0.7 |
| 45-59 | 436 | 0.0 | 0.0-0.0 | 789 | 0.9 | 0.1-1.7 | 1225 | 0.5 | 0.1-0.9 |
| 60-69 | 219 | 0.6 | 0.0-1.8 | 442 | 1.6 | 0.0-4.2 | 661 | 1.1 | 0.0-2.6 |
| **18-69** | **1981** | **0.8** | **0.0-1.5** | **3358** | **0.5** | **0.2-0.7** | **5339** | **0.6** | **0.2-1.0** |

**Annex 43: Mean high density lipoprotein**

| Mean HDL (mg/dl) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | Men | | | Women | | | Both Sexes | | |
| | n | Mean | 95% CI | n | Mean | 95% CI | n | Mean | 95% CI |
| 18-29 | 460 | 41.7 | 40.1-43.2 | 764 | 44.6 | 43.6-45.7 | 1224 | 43.1 | 42.1-44.1 |
| 30-44 | 869 | 45.9 | 44.7-47.1 | 1365 | 45.3 | 44.5-46.0 | 2234 | 45.6 | 44.9-46.3 |
| 45-59 | 437 | 48.3 | 46.5-50.0 | 789 | 47.5 | 45.9-49.1 | 1226 | 47.8 | 46.6-49.1 |
| 60-69 | 218 | 51.3 | 48.2-54.5 | 442 | 48.9 | 46.8-51.0 | 660 | 50.1 | 48.2-52.0 |
| **18-69** | **1984** | **44.7** | **43.8-45.5** | **3360** | **45.6** | **45.0-46.2** | **5344** | **45.1** | **44.6-45.7** |

### Annex 44: Tobacco use prevalence (both smoking and smokeless), by sex and age

| Men | | | | | |
|---|---|---|---|---|---|
| Age Group (years) | n | Current tobaccouser | 95% CI | No user | 95% CI |
| 18-29 | 460 | 3.3 | 1.7-5.0 | 96.7 | 95.0-98.3 |
| 30-44 | 869 | 12.8 | 10.4-15.2 | 87.2 | 84.8-89.6 |
| 45-59 | 439 | 17.4 | 13.6-21.3 | 82.6 | 78.7-86.4 |
| 60-69 | 221 | 34.7 | 27.3-42.0 | 65.3 | 58.0-72.7 |
| **18-69** | **1989** | **10.6** | **9.0-12.2** | **89.4** | **87.8-91.0** |
| **Women** | | | | | |
| 18-29 | 764 | 1.1 | 0.1-2.1 | 98.9 | 97.9-99.9 |
| 30-44 | 1362 | 3.0 | 2.0-3.9 | 97.0 | 96.1-98.0 |
| 45-59 | 788 | 10.2 | 7.7-12.7 | 89.8 | 87.3-92.3 |
| 60-69 | 439 | 15.8 | 12.1-19.5 | 84.2 | 80.5-87.9 |
| **18-69** | **3353** | **4.3** | **3.6-5.1** | **95.7** | **94.9-96.4** |
| **Both sexes** | | | | | |
| 18-29 | 1224 | 2.2 | 1.3-3.2 | 97.8 | 96.8-98.7 |
| 30-44 | 2231 | 7.8 | 6.5-9.2 | 92.2 | 90.8-93.5 |
| 45-59 | 1227 | 13.5 | 11.3-15.8 | 86.5 | 84.2-88.7 |
| 60-69 | 660 | 25.3 | 20.9-29.6 | 74.7 | 70.4-79.1 |
| **18-69** | **5342** | **7.5** | **6.6-8.3** | **92.5** | **91.7-93.4** |

### Annex 45: Cotinine 200 ng/mL test, by sex and age

| Men | | | | | |
|---|---|---|---|---|---|
| Age Group (years) | n | Cotinine 200 ng/mL (+) | 95% CI | Cotinine 200 ng/mL (-) | 95% CI |
| 18-29 | 460 | 4.4 | 2.3-6.5 | 95.6 | 93.5-97.7 |
| 30-44 | 869 | 14.4 | 11.7-17.1 | 85.6 | 82.9-88.3 |
| 45-59 | 439 | 21.8 | 17.4-26.2 | 78.2 | 73.8-82.6 |
| 60-69 | 221 | 35.1 | 28.1-42.2 | 64.9 | 57.8-71.9 |
| **18-69** | **1989** | **12.3** | **10.6-14.1** | **87.7** | **86.0-89.4** |
| **Women** | | | | | |
| 18-29 | 764 | 2.8 | 1.3-4.3 | 97.2 | 95.7-98.7 |
| 30-44 | 1362 | 6.7 | 4.8-8.5 | 93.3 | 91.5-95.2 |
| 45-59 | 788 | 19.9 | 16.0-23.9 | 80.1 | 76.1-84.0 |
| 60-69 | 439 | 28.7 | 23.7-33.7 | 71.3 | 66.3-76.3 |
| **18-69** | **3353** | **8.8** | **7.6-10.1** | **91.2** | **89.9-92.4** |
| **Both sexes** | | | | | |
| 18-29 | 1224 | 3.6 | 2.3-4.9 | 96.4 | 95.1-97.7 |
| 30-44 | 2231 | 10.5 | 8.8-12.1 | 89.5 | 87.9-91.2 |
| 45-59 | 1227 | 20.8 | 17.9-23.7 | 79.2 | 76.3-82.1 |
| 60-69 | 660 | 31.9 | 27.6-36.2 | 68.1 | 63.8-72.4 |
| **18-69** | **5342** | **10.6** | **9.5-11.7** | **89.4** | **88.3-90.5** |

### Annex 46: Cotinine 10 ng/mL test, by sex and age

| Men | | | | | |
|---|---|---|---|---|---|
| Age Group (years) | n | Cotinine 10 ng/mL (+) | 95% CI | Cotinine 10 ng/mL (-) | 95% CI |
| 18-29 | 460 | 18.8 | 13.9-23.7 | 81.2 | 76.3-86.1 |
| 30-44 | 869 | 25.5 | 22.1-29.0 | 74.5 | 71.0-77.9 |
| 45-59 | 439 | 36.0 | 30.6-41.4 | 64.0 | 58.6-69.4 |
| 60-69 | 221 | 52.2 | 44.5-59.8 | 47.8 | 40.2-55.5 |
| **18-69** | **1989** | **25.9** | **22.9-28.8** | **74.1** | **71.2-77.1** |
| **Women** | | | | | |
| 18-29 | 764 | 16.4 | 13.1-19.7 | 83.6 | 80.3-86.9 |
| 30-44 | 1362 | 17.7 | 15.0-20.5 | 82.3 | 79.5-85.0 |
| 45-59 | 788 | 31.0 | 26.6-35.5 | 69.0 | 64.5-73.4 |
| 60-69 | 439 | 37.9 | 32.3-43.6 | 62.1 | 56.4-67.7 |
| **18-69** | **3353** | **20.9** | **18.8-23.1** | **79.1** | **76.9-81.2** |
| **Both sexes** | | | | | |
| 18-29 | 1224 | 17.7 | 14.6-20.7 | 82.4 | 79.3-85.4 |
| 30-44 | 2231 | 21.6 | 19.3-23.9 | 78.4 | 76.1-80.7 |
| 45-59 | 1227 | 33.3 | 29.7-37.0 | 66.7 | 63.0-70.3 |
| 60-69 | 660 | 45.1 | 40.2-50.0 | 54.9 | 50.0-59.8 |
| **18-69** | **5342** | **23.4** | **21.4-25.3** | **76.6** | **74.7-78.6** |

### Annex 47: Tobacco use vs cotinine 200 ng/mL test, by sex and age

| Men | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | n | Reported tob. use andCotinine 200 ng/ mL(+) | 95% CI | No reported tob. use and Cotinine 200 ng/mL(+) | 95% CI | Reported tob. use and Cotinine 200 ng/ mL(-) | 95%CI | No reported tob. use and Cotinine 200 ng/ mL(-) | 95% CI |
| 18-29 | 460 | 2.7 | 1.2-4.2 | 1.7 | 0.2-3.2 | 0.6 | 0.0-1.3 | 95.0 | 92.8-97.2 |
| 30-44 | 869 | 11.2 | 8.8-13.6 | 3.2 | 1.8-4.5 | 1.6 | 0.8-2.5 | 84.0 | 81.3-86.7 |
| 45-59 | 439 | 16.4 | 12.6-20.2 | 5.4 | 3.0-7.7 | 1.0 | 0.2-1.9 | 77.2 | 72.8-81.6 |
| 60-69 | 221 | 31.6 | 24.7-38.6 | 3.5 | 1.2-5.9 | 3.1 | 0.5-5.7 | 61.8 | 54.4-69.2 |
| **18-69** | **1989** | **9.5** | **8.0-10.9** | **2.9** | **1.9-3.8** | **1.2** | **0.7-1.6** | **86.5** | **84.7-88.3** |
| **Women** | | | | | | | | | |
| 18-29 | 764 | 0.9 | 0.0-1.9 | 1.9 | 0.7-3.0 | 0.2 | 0.0-0.5 | 97.0 | 95.5-98.5 |
| 30-44 | 1362 | 2.4 | 1.6-3.3 | 4.2 | 2.5-5.9 | 0.6 | 0.1-1.0 | 92.8 | 90.9-94.6 |
| 45-59 | 788 | 9.2 | 6.8-11.6 | 10.7 | 7.2-14.2 | 1.0 | 0.2-1.8 | 79.1 | 75.1-83.0 |
| 60-69 | 439 | 14.8 | 11.2-18.4 | 13.9 | 9.8-18.0 | 1.0 | 0.0-2.0 | 70.3 | 65.3-75.4 |
| **18-69** | **3353** | **3.8** | **3.1-4.5** | **5.0** | **4.0-6.0** | **0.5** | **0.3-0.8** | **90.6** | **89.3-91.9** |
| **Both sexes** | | | | | | | | | |
| 18-29 | 1224 | 1.8 | 0.9-2.7 | 1.8 | 0.8-2.7 | 0.4 | 0.0-0.8 | 96.0 | 94.7-97.3 |
| 30-44 | 2231 | 6.8 | 5.4-8.1 | 3.7 | 2.6-4.8 | 1.1 | 0.6-1.6 | 88.5 | 86.8-90.1 |
| 45-59 | 1227 | 12.5 | 10.3-14.8 | 8.3 | 5.9-10.6 | 1.0 | 0.4-1.6 | 78.2 | 75.3-81.2 |
| 60-69 | 660 | 23.2 | 19.2-27.3 | 8.7 | 6.2-11.1 | 2.0 | 0.6-3.4 | 66.0 | 61.6-70.5 |
| **18-69** | **5342** | **6.6** | **5.8-7.4** | **3.9** | **3.2-4.7** | **0.8** | **0.6-1.1** | **88.6** | **87.4-89.7** |

**Annex 48: Exposed to second-hand smoke vs cotinine 10 ng/mL test, by sex and age**

| Men | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group (years) | n | Reported exposureto second-hand smoke and Cotinine 10 ng/ mL(+) | 95% CI | No reported exposureto second-hand smoke and Cotinine 10 ng/mL(+) | 95% CI | Reported exposure to second-hand smoke and Cotinine10 ng/ mL(-) | 95% CI | No reported exposure to second-hand smoke and Cotinine 10 ng/ mL(-) | 95% CI |
| 18-29 | 460 | 11.7 | 8.2-15.2 | 7.1 | 3.5-10.7 | 36.2 | 30.6-41.8 | 45.0 | 39.3-50.7 |
| 30-44 | 869 | 16.4 | 13.6-19.2 | 9.1 | 6.9-11.4 | 30.5 | 27.1-33.9 | 44.0 | 40.0-48.0 |
| 45-59 | 439 | 21.3 | 17.0-25.6 | 14.7 | 10.6-18.7 | 20.1 | 15.7-24.5 | 43.9 | 38.3-49.5 |
| 60-69 | 221 | 31.0 | 24.1-38.0 | 21.1 | 14.7-27.6 | 16.7 | 11.0-22.4 | 31.2 | 23.9-38.4 |
| **18-69** | **1989** | **16.0** | **13.9-18.0** | **9.9** | **7.8-11.9** | **30.6** | **27.5-33.6** | **43.6** | **40.3-46.8** |
| **Women** | | | | | | | | | |
| 18-29 | 764 | 9.7 | 7.3-12.1 | 6.7 | 4.5-8.9 | 29.3 | 25.3-33.2 | 54.3 | 50.0-58.6 |
| 30-44 | 1362 | 11.6 | 9.5-13.7 | 6.2 | 4.7-7.7 | 27.3 | 24.4-30.3 | 54.9 | 51.4-58.4 |
| 45-59 | 788 | 19.5 | 15.6-23.5 | 11.5 | 8.8-14.2 | 26.0 | 22.1-29.9 | 43.0 | 38.4-47.6 |
| 60-69 | 439 | 21.7 | 16.6-26.8 | 16.2 | 12.5-20.0 | 22.1 | 16.9-27.2 | 40.0 | 34.6-45.3 |
| **18-69** | **3353** | **12.9** | **11.2-14.5** | **8.0** | **6.8-9.3** | **27.6** | **25.4-29.8** | **51.5** | **49.1-53.8** |
| **Both sexes** | | | | | | | | | |
| 18-29 | 1224 | 10.7 | 8.6-12.9 | 6.9 | 4.8-9.0 | 32.8 | 29.2-36.5 | 49.5 | 45.8-53.2 |
| 30-44 | 2231 | 14.0 | 12.1-15.8 | 7.6 | 6.3-9.0 | 28.9 | 26.5-31.3 | 49.5 | 46.8-52.2 |
| 45-59 | 1227 | 20.4 | 17.4-23.3 | 13.0 | 10.5-15.4 | 23.3 | 20.5-26.0 | 43.4 | 39.7-47.0 |
| 60-69 | 660 | 26.4 | 22.1-30.6 | 18.7 | 15.0-22.3 | 19.4 | 15.5-23.2 | 35.6 | 30.9-40.2 |
| **18-69** | **5342** | **14.4** | **13.0-15.8** | **9.0** | **7.7-10.2** | **29.1** | **27.1-31.1** | **47.6** | **45.4-49.7** |

**Annex 49: 10-year cardiovascular disease (CVD) risk* among respondents aged 40-69 years**

| Unpaid work and unemployed | | | | | | | |
|---|---|---|---|---|---|---|---|
| Age Group | Men | | | | | | |
| (years) | n | <10% | 95% CI | 10-20% | 95% CI | ≥20% | 95% CI |
| 40-54 | 532 | 99.7 | 98.2-100.0 | 0.3 | 0-1.9 | 0.0 | - |
| 55-69 | 302 | 84.1 | 78.5-88.5 | 15.6 | 11.3-21.3 | 0.3 | 0-1.3 |
| **40-69** | **834** | **94.5** | **92.3-96.1** | **5.5** | **3.9-7.6** | **0.0** | **-** |
| **Percentage of respondents by level of 10-year CVD risk** | | | | | | | |
| Age Group | Women | | | | | | |
| (years) | n | <10% | 95% CI | 10-20% | 95% CI | ≥20% | 95% CI |
| 40-54 | 931 | 100.0 | - | 0 | - | 0.0 | - |
| 55-69 | 642 | 92.7 | 90.1-94.6 | 7.4 | 5.4-10.0 | 0.0 | - |
| **40-69** | **1573** | **97.5** | **96.7-98.2** | **2.5** | **1.8-3.4** | **0.0** | **-** |
| **Unpaid work and unemployed** | | | | | | | |
| Age Group | Both Sexes | | | | | | |
| (years) | n | <10% | 95% CI | 10-20% | 95% CI | ≥20% | 95% CI |
| 40-54 | 1463 | 99.9 | 99.1-100.0 | 0.1 | 0.0-0.9 | 0.0 | - |
| 55-69 | 944 | 88.7 | 85.8-91.1 | 11.2 | 8.8-14.1 | 0.1 | 0.0-0.6 |
| **40-69** | **2407** | **96.1** | **95.0-97.0** | **3.9** | **3.0-5.0** | **0.0** | **-** |

Note: 10-year CVD risk is defined according to age, sex, smoking status, blood pressure, history of diabetes, total cholesterol, and body mass index.

**Annex 50: Percentage of eligible persons (defined as aged 40-69 years with a 10-year cardiovascular disease (CVD) risk* ≥20%, including those with existing CVD) receiving drug therapy and counseling** (including glycaemic control) to prevent heart attacks and strokes.**

| Percentage of eligible persons receiving drug therapy and counseling to prevent heart attacks and strokes | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Age Group | Men | | | Women | | | Both Sexes | | |
| (years) | n | % | 95% CI | n | % | 95% CI | n | % | 95% CI |
| 40-54 | 18 | 6.8 | - | 79 | 18.5 | - | 97 | 15.8 | - |
| 55-69 | 24 | 24.6 | - | 79 | 31.1 | - | 103 | 28.5 | - |
| **40-69** | **42** | **17.4** | **-** | **158** | **23.5** | **-** | **200** | **21.6** | **-** |

**Annex 51: Summary of combined risk factors, by age group and sex**

| Summary of Combined Risk Factors | | | | | | | |
|---|---|---|---|---|---|---|---|
| Age Group | Men | | | | | | |
| (years) | n | % With 0 riskfactors | 95% CI | % With 1-2 riskfactors | 95% CI | % With 3-5risk factors | 95% CI |
| 18-44 | 1378 | 6.7 | 5.0-8.5 | 89.0 | 86.9-91.1 | 4.2 | 3.0-5.5 |
| 45-69 | 667 | 4.9 | 3.0-6.7 | 84.6 | 81.4-87.9 | 10.5 | 7.9-13.2 |
| **18-69** | **2045** | **6.3** | **4.9-7.8** | **88.1** | **86.2-89.9** | **5.6** | **4.4-6.8** |
| **Summary of Combined Risk Factors** | | | | | | | |
| Age Group | Women | | | | | | |
| (years) | n | % with 0 riskfactors | 95% CI | % with 1-2 riskfactors | 95% CI | % with 3-5risk factors | 95% CI |
| 18-44 | 2057 | 6.8 | 5.2-8.3 | 86.7 | 84.7-88.7 | 6.6 | 5.3-7.8 |
| 45-69 | 1242 | 2.6 | 1.6-3.7 | 82.4 | 79.9-85.0 | 14.9 | 12.5-17.3 |
| **18-69** | **3299** | **5.7** | **4.5-6.9** | **85.6** | **84.0-87.3** | **8.7** | **7.5-9.8** |

| Summary of Combined Risk Factors | | | | | | | |
|---|---|---|---|---|---|---|---|
| Age Group (years) | Both Sexes | | | | | | |
| | n | % with 0 riskfactors | 95% CI | % with 1-2 riskfactors | 95% CI | % with 3-5risk factors | 95% CI |
| 18-44 | 3435 | 6.8 | 5.5-8.0 | 87.9 | 86.4-89.4 | 5.4 | 4.5-6.2 |
| 45-69 | 1909 | 3.7 | 2.7-4.7 | 83.5 | 81.3-85.6 | 12.8 | 11.0-14.7 |
| **18-69** | **5344** | **6.0** | **5.0-7.0** | **86.9** | **85.6-88.1** | **7.1** | **6.3-7.9** |

**Introduction:** This is the generic STEPS Instrument which countries will use to develop their tailored instrument. It contains the: CORE items (unshaded boxes) EXPANDED items (shaded boxes).

**Core Items**: The Core items for each section ask questions required to calculate basic variables.
For example: current daily smokers,mean BMI.
Note: All the core questions should be asked, removing core questions will impact the analysis.

**Expanded items**: The Expanded items for each section ask more detailed information. Examples include: use of smokeless tobacco sedentary behavior.

**Guide to the columns:** The table below is a brief guide to each of the columns in the Instrument.

| Column | Description | Country Tailoring |
|---|---|---|
| Question | Each question is to be read to the participants | Select sections to use.<br>Add expanded and optional questions as desired. |
| Response | This column lists the available response options which the interviewer will be circling or filling in the text boxes. The skip instructions are shown on the right hand side of the responses and should be carefully followed during interviews. | Add country-specific responses for demographic responses (e.g., C6).<br>Change skip question identifiers where necessary. |
| Code | The column is designed to match data from the instrument into the data entry tool, data analysis syntax, data book, and fact sheet. | This should never be changed or removed. The code is used as a general identifier for the data entry and analysis. |

| Survey Information | | | | |
|---|---|---|---|---|
| Location and Date | Response | | | Code |
| Cluster/Centre/Village ID | ⌊_⌊_⌊_⌊_⌊_⌊_⌋ | | | I1 |
| Cluster/Centre/Village name | | | | I2 |
| Interviewer ID | ⌊_⌊_⌊_⌊_⌋ | | | I3 |
| Date of completion of the instrument | ⌊_⌊_⌋ dd | ⌊_⌊_⌋ mm | ⌊_⌊_⌊_⌊_⌋ year | I4 |
| Consent, Interview Language and Name | Response | | | Code |
| Consent has been read and obtained | Yes<br>No | 1<br>2 | <br>If NO, END | I5 |
| Interview Language *[Insert Language]* | English<br>*[Kinyarwanda]*<br>*[Add others]*<br>*[Add others]* | 1<br>2<br>3<br>4 | | I6 |
| Time of interview (24 hour clock) | ⌊_⌊_⌋ Hrs | ⌊_⌊_⌋ mins | | I7 |
| Family Surname | | | | I8 |
| First Name | | | | I9 |

| | | | |
|---|---|---|---|
| **Additional Information that may be helpful** | | | |
| **Contact phone number where possible** | | | I10 |

## Step 1 Demographic Information

**CORE: Demographic Information**

| Question | Response | | Code |
|---|---|---|---|
| **Sex** (*Record Male / Female as observed*) | Male<br>Female | 1<br>2 | C1 |
| **What is your date of birth?**<br><br>**Don't Know 77 77 7777** | ⌊_⌋⌊_⌋ ⌊_⌋⌊_⌋ ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ *If Known, Go to C4*<br>dd mm year | | C2 |
| **How old are you?** | Years | ⌊_⌋⌊_⌋ | C3 |
| **In total, how many years have you spent at school and in full-time study (excluding pre- school)?** | Years | ⌊_⌋⌊_⌋ | C4 |

**EXPANDED: Demographic Information**

| | | | |
|---|---|---|---|
| **What is the highest level of education you have completed?**<br><br>*[INSERT COUNTRY-SPECIFIC CATEGORIES]* | No formal schooling<br>Less than primary school<br>Primary school completed<br>Secondary school completed<br>High school completed<br>College/University completed<br>Post graduate degree<br>Refused | 1<br>2<br>3<br>4<br>5<br>6<br>7<br>88 | C5 |
| **What is your marital status?** | Never married<br>Currently married<br>Separated<br>Divorced<br>Widowed<br>Cohabitation<br>Refused | 1<br>2<br>3<br>4<br>5<br>6<br>88 | C7 |
| **Which of the following best describes your main work status over the past 12 months?**<br><br>*[INSERT COUNTRY-SPECIFIC CATEGORIES]*<br><br>**(USE SHOW CARD)** | Government employee<br>Non-government employee<br>Self-employed<br>Non-paid<br>Student<br>Homemaker<br>Retired<br>Unemployed (able to work)<br>Unemployed (unable to work)<br>Refused | 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>88 | C8 |
| **How many people older than 18 years, including yourself, live in your household?** | Number of people ⌊_⌋⌊_⌋ *If Not Known, Go to C11* | | C9 |

| EXPANDED: Demographic Information, Continued | | | |
|---|---|---|---|
| **Question** | **Response** | | **Code** |
| Taking the past year, can you tell me what the average earnings of the household have been?<br>(*RECORD ONLY ONE, NOT ALL 3*) | Per week ⌊_⌊_⌊_⌊_⌊_⌊_⌋ *Go to T1* | | C10a |
| | OR per month ⌊_⌊_⌊_⌊_⌊_⌊_⌋ *Go to T1* | | C10b |
| | OR per year ⌊_⌊_⌊_⌊_⌊_⌊_⌋ *Go to T1* | | C10c |
| | Refused 88 | | C10d |
| Can you give an estimate of the annual household income if I read some options to you? Is it<br>*[INSERT QUINTILE VALUES IN LOCAL CURRENCY]*<br>*(READ OPTIONS)* | ≤ Quintile (Q)1 | 1 | C11 |
| | More than Q 1, ≤ Q 2 | 2 | |
| | More than Q 2, ≤ Q 3 | 3 | |
| | More than Q 3, ≤ Q 4 | 4 | |
| | More than Q 4 | 5 | |
| | Don't Know | 77 | |
| | Refused | 88 | |

## Step 1: Behavioral Measurements

### CORE: Tobacco Use

**Now I am going to ask you some questions about tobacco use. Firstly you will be asked questions about the conventional tobacco products such as cigarettes, cigars, pipes, shisha and smokeless tobacco use. Then you will be asked questions about the new and emerging products which are the heated tobacco products (HTPs) and the electronic cigarettes**

| Question | Response | | Code |
|---|---|---|---|
| Do you currently smoke any tobacco products, such as cigarettes, cigars, pipes?<br>(*USE SHOWCARD*) | Yes 1<br>No 2 If No, go to T8 | | T1 |
| Which of the following tobacco products do you currently smoke?<br>*(Please indicate which product you currently smoke)*<br>*(USE SHOWCARDS)* | Manufactured cigarettes | 1 | T1a |
| | Hand rolled cigarettes | 2 | T1b |
| | Pipes | 3 | T1c |
| | Cigars | 4 | T1d |
| | Shisha | 5 | T1e |
| | Other | 6 | T1f |
| Do you currently smoke tobacco products daily? | Yes | 1 | T2 |
| | No | 2 *If No, go to T3* | |
| Which of the following tobacco products do you currently smoke daily?<br>*(Pleas indicate the product smoked daily)*<br>*(USE SHOWCARDS)* | Manufactured Cigarettes | 1 | T2a |
| | Hand rolled cigarettes | 2 | T2b |
| | Pipes | 3 | T2c |
| | Cigars | 4 | T2d |
| | Shisha | 5 | T2e |
| | Others | 6 | T2f |
| How old were you when you first started smoking? | Age (years) | ⌊_⌊_⌋ *If Known, go to T5a/T5aw* | T3 |
| | Don't know | 77 | |
| Do you remember how long ago it was? | In Years | ⌊_⌊_⌋ *If Known, go to T5a/T5aw* | T4a |
| | OR in Months | ⌊_⌊_⌋ *If Known, go to T5a/T5aw* | T4b |
| | OR in Weeks | ⌊_⌊_⌋ | T4c |

## Step 1: Behavioral Measurements

| | | DAILY↓ | WEEKLY↓ | |
|---|---|---|---|---|
| On average, how many of the following products do you smoke each day/week? (IF LESS THAN DAILY, RECORD WEEKLY) (RECORD FOR EACH TYPE, USE SHOWCARD) Don't Know 7777 | Manufactured cigarettes | ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ | ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ | T5a/T5aw |
| | Hand-rolled cigarettes | ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ | ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ | T5b/T5bw T5c/T5cw |
| | Pipes full of tobacco | ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ | ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ | T5d/T5dw |
| | Cigars, cheroots, cigarillos | ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ | ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ | T5e/T5ew |
| | Number of Shisha sessions | ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ | ⌊_⌋⌊_⌋⌊_⌋⌊_⌋ | T5f/ T5fw |
| | Other (please specify): ⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋ *If other, go to T5 other, else go to T6* | | | |
| | Other (please specify): ⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋⌊_⌋ | | | T5other/ T5otherw |
| During the past 12 months, have you tried to stop smoking? | Yes | 1 | | T6 |
| | No | 2 | | |
| During any visit to a doctor or other health worker in the past 12 months, were you advised to quit smoking tobacco? | Yes | 1 | *If T2=Yes, go to T12; if T2=No, go to T9* | T7 |
| | No | 2 | *If T2=Yes, go to T12; if T2=No, go to T9* | |
| | No visit during the past 12 months | 3 | *If T2=Yes, go to T12; if T2=No, go to T9* | |
| In the past, did you ever smoke any tobacco products? *(USE SHOWCARD)* | Yes | 1 | | T8 |
| | No | 2 | *If No, go to T12* | |
| In the past, did you ever smoke daily? | Yes | 1 | *If T1=Yes, go to T12, else go to T10* | T9 |
| | No | 2 | *If T1=Yes, go to T12, else go to T10* | |
| **EXPANDED: Tobacco Use** | | | | |
| How old were you when you stopped smoking? | Age (years) | ⌊_⌋⌊_⌋ | *If Known, go to T12* | T10 |
| | Don't Know | 77 | | |
| How long ago did you stop smoking? (RECORD ONLY 1, NOT ALL 3) Don't Know 77 | Years ago | ⌊_⌋⌊_⌋ | *If Known, go to T12* | T11a |
| | OR Months ago | ⌊_⌋⌊_⌋ | *If Known, go to T12* | T11b |
| | OR Weeks ago | ⌊_⌋⌊_⌋ | | T11c |
| Do you currently use any smokeless tobacco products such as *[snuff, chewing tobacco, betel]*? *(Exclude HTPs) (USE SHOWCARD)* | Yes | 1 | | T12 |
| | No | 2 | *If No, go to T15* | |
| Do you currently use smokeless tobacco products daily? | Yes | 1 | | T13 |
| | No | 2 | *If No, go to T15* | |

## Step 1: Behavioral Measurements

| | | DAILY ↓ | WEEKLY ↓ | |
|---|---|---|---|---|
| On average, how many times a day/week do you use ....<br>(IF LESS THAN DAILY, RECORD WEEKLY)<br>(RECORD FOR EACH TYPE, USE SHOWCARD)<br>Don't Know 7777 | Manufactured cigarettes | \|_\|_\|_\| | \|_\|_\|_\| | T5a/T5aw |
| | Hand-rolled cigarettes | \|_\|_\|_\| | \|_\|_\|_\| | T5b/T5bw |
| | Pipes full of tobacco | \|_\|_\|_\| | \|_\|_\|_\| | T5c/T5cw |
| | Cigars, cheroots, cigarillos | \|_\|_\|_\| | \|_\|_\|_\| | T5d/T5dw |
| | Number of Shisha sessions | \|_\|_\|_\| | \|_\|_\|_\| | T5e/T5ew |
| | Other (please specify): | \|_\|_\|_\|_\|_\|_\| *If other, go to T5 other, else go to T6* | | T5f/T5fw |
| | Other (please specify): | \|_\|_\|_\|_\|_\|_\| | | T5 other/T5 other w |

| | | | |
|---|---|---|---|
| During the past 12 months, have you tried to stop smoking? | Yes<br>No | 1<br>2 | T6 |
| During any visit to a doctor or other health worker in the past 12 months, were you advised to quit smoking tobacco? | Yes<br>No<br>No visit during the past 12 months | 1 *If T2=Yes, go to T12; if T2=No, go to T9*<br>2 *If T2=Yes, go to T12; if T2=No, go to T9*<br>3 *If T2=Yes, go to T12; if T2=No, go to T9* | T7 |
| In the past, did you ever smoke any tobacco products? (*USE SHOWCARD*) | Yes<br>No | 1<br>2 *if No, go to T12* | T8 |
| In the past, did you ever smoke daily? | Yes 1 if T1=yes, go to T12, else go to T10<br>No 2 if T1=Yes, go to T12 | | T9 |

## EXPANDED: Tobacco Use

| Question | Response | | Code |
|---|---|---|---|
| How old were you when you stopped smoking? | Age (years)<br>Don't know | \|_\|_\| *If Known, go to T12*<br>77 | T10 |
| How long ago did you stop smoking?<br>*(RECORD ONLY 1, NOT ALL 3)*<br>Don't Know 77 | Years ago | \|_\|_\| *If Known, go to T12* | T11a |
| | OR Months ago | \|_\|_\| *If Known, go to T12* | T11b |
| | OR Weeks ago | \|_\|_\| *If Known, go to T12* | T11c |
| Do you currently use any smokeless tobacco products such as *[snuff, chewing tobacco, betel]? (Exclude HTPs) (USE SHOWCARD)* | Yes<br>No | 1<br>2 If No, go to T15 | T12 |
| Do you currently use smokeless tobacco products daily? | Yes<br>No | 1<br>2 If No, go to T14aw | T13 |

## Step 1: Behavioral Measurements

| | | DAILY ↓ | WEEKLY ↓ | | |
|---|---|---|---|---|---|
| On average, how many times a day/ week do you use .... | Snuff, by mouth | ⌊_⌊_⌊_⌊_⌋ | ⌊_⌊_⌊_⌊_⌋ | | T14a/T14aw |
| *(IF LESS THAN DAILY, RECORD WEEKLY)* | Snuff, by nose | ⌊_⌊_⌊_⌊_⌋ | ⌊_⌊_⌊_⌊_⌋ | | T14b/T14bw |
| | Chewing tobacco | ⌊_⌊_⌊_⌊_⌋ | ⌊_⌊_⌊_⌊_⌋ | | T14c/T14cw |
| *(RECORD FOR EACH TYPE, USE SHOW-CARD)* | Betel, quid | ⌊_⌊_⌊_⌊_⌋ | ⌊_⌊_⌊_⌊_⌋ | | T14d/T14dw |
| Don't Know 7777 | Other *T13=- No, go to T16, else go to T17* | ⌊_⌊_⌊_⌊_⌊_⌋ | | *If Other, go to T14other, if* | T14e/T14ew |
| | Other (please specify): *go to T17* | ⌊_⌊_⌊_⌊_⌊_⌋ | | *If T13=No, go to T16, else* | T14other/T14otherw |

| | | | |
|---|---|---|---|
| In the past, did you ever use smokeless tobacco products such as [snuff, chewing tobacco, or betel]? | Yes<br>No | 1<br>2 *If No, go to T17* | T15 |
| In the past, did you ever use smokeless tobacco products such as [snuff, chewing tobacco, or betel] daily? | Yes<br>No | 1<br>2 | T16 |
| During the past 30 days, did someone smoke in your home? | Yes<br>No | 1<br>2 | T17 |
| During the past 30 days, did someone smoke in closed areas in your workplace (in the building, in a work area or a specific office)? | Yes<br>No<br>Don't work in a closed area | 1<br>2<br>3 | T18 |

**EXPANDED: Use of heated tobacco products**

**You have been asked about the conventional tobacco products. Now I will ask you questions about heated tobacco products (HTPs). HTPs heat tobacco to produce aerosols containing nicotine and other chemicals. Examples of heated tobacco products (HTPs) are iQOS, Ploom [Insert country specific examples) (SEE SHOW CARDS).**

| Question | | | |
|---|---|---|---|
| Do you currently use heated tobacco products? Eg iQOS, Ploom TECH, Glo and PAX. | Yes<br>No | 1<br>2 *If No, go to EC1* | HTP1 |
| Do you currently use heated tobacco products daily? | Yes<br>No | 1<br>2 | HTP2 |
| How old were you when you first started using heated tobacco products? | Age (Years) *EC1* | ⌊_⌋ *If known, go to* | HTP3 |
| Do you remember how long ago it was? | In years *EC1* | ⌊_⌋ *If known, go to* | HTP4a |

**EXPANDED: Use of electronic cigarettes**

**Previous questions asked you about tobacco products. Now I will ask you questions about electronic cigarettes (e-cigarettes). These devices heat a liquid that may or may not contain nicotine. E-cigarettes are also known as vaporizers, vapes, vape pends, vape mods [INSERT COUNTRY SPECIFIC EXAMPLES] These do not include heated tobacco products (HTPs)**

| Question | Response | | Code |
|---|---|---|---|
| **Do you currently use electronic cigarettes?** *Eg e-cigar, vape pens and mods or Juul [Add country specific examples]*<br>*[INSERT EXAMPLES]*<br>*(USE SHOWCARD)* | Yes<br>No | 1<br>2 *If No, go to A1* | EC1 |
| Do you currently use electronic cigarettes daily? | Yes<br>No | 1<br>2 | EC2 |
| How old were you when you first started using electronic cigarettes? | Age (Years)<br>Don't know | ⌊_⌋⌊_⌋ *If known, go to A1*<br>77 | EC3 |
| Do you remember how long ago it was?<br>(*RECORD ONLY 1, NOT ALL 3*) | In years<br>OR in Months<br>OR in Weeks | ⌊_⌋⌊_⌋ *If known, go to A1*<br>⌊_⌋⌊_⌋ *If known, go to A1*<br>⌊_⌋⌊_⌋ *If known, go to A1* | EC4a<br>EC4b<br>EC4c |

## CORE: Alcohol Consumption

**The next questions ask about the consumption of alcohol.**

| Question | Response | | Code |
|---|---|---|---|
| Have you ever consumed any alcohol such as beer, wine, spirits or *[add other local examples]?*<br>(*USE SHOWCARD OR SHOW EXAMPLES*) | Yes<br>No | 1<br>2 *If No, go to A16* | A1 |
| Have you consumed any alcohol within the past 12 months? | Yes<br>No | 1<br>2 *If Yes, go to A4* | A2 |
| Have you stopped drinking due to health reasons, such as a negative impact on your health or on the advice of your doctor or other health worker? | Yes<br>No | 1 *If Yes, go to A16*<br>2 *If No, go to A16* | A3 |
| During the past 12 months, how frequently have you had at least one standard alcoholic drink?<br>*(READ RESPONSES, USE SHOWCARD)* | Daily<br>5-6 days per week<br>3-4 days per week<br>1-2 days per week<br>1-3 days per month<br>Less than once a month<br>Never | 1<br>2<br>3<br>4<br>5<br>6<br>7 | A4 |
| Have you consumed any alcohol within the past 30 days? | Yes<br>No | 1<br>2 *If No, go to A13* | A5 |
| During the past 30 days, on how many occasions did you have at least one standard alcoholic drink? | Number<br>Don't know | ⌊_⌋⌊_⌋ *If Zero, go to A13*<br>77 | A6 |
| During the past 30 days, when you drank alcohol, how many standard drinks on average did you have during one drinking occasion?<br>(*USE SHOWCARD*) | Number<br>Don't know | ⌊_⌋⌊_⌋<br>77 | A7 |
| During the past 30 days, what was the largest number of standard drinks you had on a single occasion, counting all types of alcoholic drinks together? | Largest number<br>Don't Know | ⌊_⌋⌊_⌋<br>77 | A8 |
| During the past 30 days, how many times did you have six or more standard drinks in a single drinking occasion? | Number of times<br>Don't Know | ⌊_⌋⌊_⌋<br>77 | A9 |

| | | | |
|---|---|---|---|
| During each of the past 7 days, how many standard drinks did you have each day?<br>*(USE SHOWCARD)*<br><br>Don't Know 77 | Monday | ⌊⌊⌋⌋ | A10a |
| | Tuesday | ⌊⌊⌋⌋ | A10b |
| | Wednesday | ⌊⌊⌋⌋ | A10c |
| | Thursday | ⌊⌊⌋⌋ | A10d |
| | Friday | ⌊⌊⌋⌋ | A10e |
| | Saturday | ⌊⌊⌋⌋ | A10f |
| | Sunday | ⌊⌊⌋⌋ | A10g |

**CORE: Alcohol Consumption, continued**

I have just asked you about your consumption of alcohol during the past 7 days. The questions were about alcohol in general, while the next questions refer to your consumption of home brewed alcohol brought over the border/from another country, any alcohol not intended for drinking or other untaxed alcohol. Please only think about these types of alcohol when answering the next questions.

| Question | Response | | Code |
|---|---|---|---|
| During the past 7 days, did you consume any home brewed alcohol, any alcohol brought over the border/from another country, any alcohol not intended for drinking or other untaxed alcohol?<br>*[AMEND ACCORDING TO LOCAL CONTEXT] (USE SHOWCARD)* | Yes<br>No | 1<br>2 *If No, go to A13* | A11 |
| On average, how many standard drinks of the follow- ing did you consume during the past 7 days?<br><br>*[INSERT COUNTRY-SPECIFIC EXAMPLES] (USE SHOWCARD)*<br>Don't Know 77 | Home brewed spirits, e.g. moonshine | ⌊⌊⌋⌋ | A12a |
| | Home brewed beer or wine, e.g. beer, palm or fruit wine | ⌊⌊⌋⌋ | A12b |
| | Alcohol brought over the border/from another country | ⌊⌊⌋⌋ | A12c |
| | Alcohol not intended for drinking, e.g. alcohol-based medicines, perfumes, after shaves | ⌊⌊⌋⌋ | A12d |
| | Other untaxed alcohol in the country | ⌊⌊⌋⌋ | A12e |

**EXPANDED: Alcohol Consumption**

| | | | |
|---|---|---|---|
| During the past 12 months, how often have you found that you were not able to stop drinking once you had started? | Daily or almost daily<br>Weekly<br>Monthly<br>Less than monthly<br>Never | 1<br>2<br>3<br>4<br>5 | A13 |
| During the past 12 months, how often have you failed to do what was normally expected from you because of drinking? | Daily or almost daily<br>Weekly<br>Monthly<br>Less than monthly<br>Never | 1<br>2<br>3<br>4<br>5 | A14 |
| During the past 12 months, how often have you needed a first drink in the morning to get yourself going after a heavy drinking session? | Daily or almost daily<br>Weekly<br>Monthly<br>Less than monthly<br>Never | 1<br>2<br>3<br>4<br>5 | A15 |
| During the past 12 months, have you had family problems or problems with your partner due to someone else's drinking? | Yes, more than monthly<br>Yes, monthly<br>Yes, several times but less than monthly<br>Yes, once or twice<br>No | 1<br>2<br>3<br>4<br>5 | A16 |

## CORE: Diet

The next questions ask about the fruits and vegetables that you usually eat. I have a nutrition card here that shows you some ex- amples of local fruits and vegetables. Each picture represents the size of a serving. As you answer these questions please think of a typical week in the last year.

| Question | Response | | Code |
|---|---|---|---|
| In a typical week, on how many days do you eat fruit? (*USE SHOWCARD*) | Number of days | ⌊_⌋⌊_⌋ *If Zero days, go to D3* | D1 |
| | Don't Know | 77 | |
| How many servings of fruit do you eat on one of those days? (*USE SHOWCARD*) | Number of servings | ⌊_⌋⌊_⌋ | D2 |
| | Don't Know | 77 | |
| In a typical week, on how many days do you eat vegetables? (*USE SHOWCARD*) | Number of days | ⌊_⌋⌊_⌋ *If Zero days, go to D5* | D3 |
| | Don't Know | 77 | |
| How many servings of vegetables do you eat on one of those days? *(USE SHOWCARD*) | Number of servings | ⌊_⌋⌊_⌋ | D4 |
| | Don't know | 77 | |

### Dietary salt

With the next questions, we would like to learn more about salt in your diet. Dietary salt includes ordinary table salt, unrefined salt such as sea salt, iodized salt, salty stock cubes and powders, and salty sauces such as soy sauce or fish sauce (see showcard). The following questions are on adding salt to the food right before you eat it, on how food is prepared in your home, on eating processed foods that are high in salt such as [from neighbouring countries like Uganda, Kenya, Tanzania, or from European Countries], and questions on controlling your salt intake. Please answer the questions even if you consider yourself to eat a diet low in salt.

| | | | |
|---|---|---|---|
| How often do you add salt or a salty sauce such as soy sauce to your food right before you eat it or as you are eating it? (SELECT ONLY ONE) (USE SHOWCARD) | Always | 1 | D5 |
| | Often | 2 | |
| | Sometimes | 3 | |
| | Rarely | 4 | |
| | Never | 5 | |
| | Don't know | 77 | |
| How often is salt, salty seasoning or a salty sauce added in cooking or preparing foods in your household? | Always | 1 | D6 |
| | Often | 2 | |
| | Sometimes | 3 | |
| | Rarely | 4 | |
| | Never | 5 | |
| | Don't know | 77 | |
| How often do you eat processed food high in salt? By processed food high in salt, I mean foods that have been altered from their natural state, such as packaged salty snacks, canned salty food including pickles and preserves, salty food prepared at a fast food restaurant, cheese, bacon and pro- cessed meat [from neighboring countries like Uganda, Kenya, Tanzania, or from European Countries]. [INSERT EXAMPLES] (USE SHOWCARD) | Always | 1 | D7 |
| | Often | 2 | |
| | Sometimes | 3 | |
| | Rarely | 4 | |
| | Never | 5 | |
| | Don't know | 77 | |
| How much salt or salty sauce do you think you consume? | Far too much | 1 | D8 |
| | Too much | 2 | |
| | Just the right amount | 3 | |
| | Too little | 4 | |
| | Far too little | 5 | |
| | Don't know | 77 | |

## EXPANDED: Diet

| Question | Response | | | Code |
|---|---|---|---|---|
| How important to you is lowering the salt in your diet? | Very important | 1 | | D9 |
| | Somewhat important | 2 | | |
| | Not at all important | 3 | | |
| | Don't know | 77 | | |
| Do you think that too much salt or salty sauce in your diet could cause a health problem? | Yes | 1 | | D10 |
| | No | 2 | | |
| | Don't know | 77 | | |
| Do you do any of the following on a regular basis to control your salt intake? *(RECORD FOR EACH)* | | | | |
| Limit consumption of processed foods | Yes | 1 | | D11a |
| | No | 2 | | |
| Look at the salt or sodium content on food labels | Yes | 1 | | D11b |
| | No | 2 | | |
| Buy low salt/sodium alternatives | Yes | 1 | | D11c |
| | No | 2 | | |
| Use spices other than salt when cooking | Yes | 1 | | D11d |
| | No | 2 | | |
| Avoid eating foods prepared outside of a home | Yes | 1 | | D11e |
| | No | 2 | | |
| Do other things specifically to control your salt intake | Yes | 1 | *If Yes, go to D11other* | D11f |
| | No | 2 | | |
| Other (please specify) | ⌊_⌊_⌊_⌊_⌊_⌊_⌊_⌋ | | | D11other |

## CORE: Physical Activity

Next I am going to ask you about the time you spend doing different types of physical activity in a typical week. Please answer these questions even if you do not consider yourself to be a physically active person.

Think first about the time you spend doing work. Think of work as the things that you have to do such as paid or unpaid work, study/training, household chores, harvesting food/crops, fishing or hunting for food, seeking employment. [Insert other examples if needed]. In answering the following questions 'vigorous-intensity activities' are activities that require hard physical effort and cause large increases in breathing or heart rate, 'moderate-intensity activities' are activities that require moderate physical effort and cause small increases in breathing or heart rate.

| Question | Response | | | Code |
|---|---|---|---|---|
| **Work** | | | | |
| Does your work involve vigorous-intensity activity that causes large increases in breathing or heart rate like *[carrying or lifting heavy loads, digging or construction work]* for at least 10 minutes continuously? *[INSERT EXAMPLES] (USE SHOWCARD)* | Yes | 1 | | P1 |
| | No | 2 | *If No, go to P4* | |
| In a typical week, on how many days do you do vigorous-intensity activities as part of your work? | Number of days | ⌊_⌊_⌋ | | P2 |
| How much time do you spend doing vigorous- intensity activities at work on a typical day? | ⌊_⌊_⌋ : ⌊_⌊_⌋ Hours : minutes | | | P3 (a-b) |
| | Hrs mins | | | |

| | | | |
|---|---|---|---|
| **Does your work involve moderate-intensity activity, that causes small increases in breathing or heart rate such as brisk walking** *[or carrying light loads]* **for at least 10 minutes continuously?**<br>*[INSERT EXAMPLES] (USE SHOWCARD)* | **Yes**<br>**No** | **1**<br>**2** *If No, go to P7* | **P4** |
| **In a typical week, on how many days do you do moderate-intensity activities as part of your work?** | **Number of days** | ⌊_⌋⌊_⌋ | **P5** |
| **How much time do you spend doing moderate-in- tensity activities at work on a typical day?** | ⌊_⌋⌊_⌋ : ⌊_⌋⌊_⌋<br>**Hours : minutes**<br>**Hrs mins** | | **P6 (a-b)** |
| **Travel to and from places** | | | |
| **The next questions exclude the physical activities at work that you have already mentioned.**<br>**Now I would like to ask you about the usual way you travel to and from places. For example to work, for shopping, to market, to place of worship.**<br>*[Insert other examples if needed]* | | | |
| **Do you walk or use a bicycle (pedal cycle) for at least 10 minutes continuously to get to and from places?** | **Yes**<br>**No** | **1**<br>**2** *If No, go to P10* | **P7** |
| **In a typical week, on how many days do you walk or bicycle for at least 10 minutes continuously to get to and from places?** | **Number of days** | ⌊_⌋⌊_⌋ | **P8** |
| **How much time do you spend walking or bicycling for travel on a typical day?** | ⌊_⌋⌊_⌋ : ⌊_⌋⌊_⌋<br>**Hours: minutes**<br>**Hrs mins** | | **P9 (a-b)** |

**CORE: Physical Activity, Continued**

| Question | Response | | Code |
|---|---|---|---|
| **Recreational activities** | | | |
| **The next questions exclude the work and transport activities that you have already mentioned.**<br>**Now I would like to ask you about sports, fitness and recreational activities (leisure),** *[Insert relevant terms].* | | | |
| **Do you do any vigorous-intensity sports, fitness or recreational (leisure) activities that cause large increases in breathing or heart rate like** *[running or football]* **for at least 10 minutes continuously?**<br>*[INSERT EXAMPLES] (USE SHOWCARD)* | **Yes**<br>**No** | **1**<br>**2** *If No, go to P 13* | **P10** |
| **In a typical week, on how many days do you do vigorous-intensity sports, fitness or recreational (leisure) activities?** | **Number of days** | ⌊_⌋⌊_⌋ | **P11** |
| **How much time do you spend doing vigorous- intensity sports, fitness or recreational activities on a typical day?** | ⌊_⌋⌊_⌋ : ⌊_⌋⌊_⌋<br>**Hours: minutes**<br>**Hrs mins** | | **P12 (a-b)** |
| **Do you do any moderate-intensity sports, fitness or recreational (leisure) activities that cause a small increase in breathing or heart rate such as brisk walking,** *[cycling, swimming, volleyball]* **for at least 10 minutes continuously?**<br>*[INSERT EXAMPLES] (USE SHOWCARD)* | **Yes**<br>**No** | **1**<br>**2** *If No, go to P16* | **P13** |
| **In a typical week, on how many days do you do moderate-intensity sports, fitness or recreational (leisure) activities?** | **Number of days** | ⌊_⌋⌊_⌋ | **P14** |

| | | |
|---|---|---|
| How much time do you spend doing moderate- intensity sports, fitness or recreational (leisure) activities on a typical day? | ⌊_⌊_⌋ : ⌊_⌊_⌋<br>Hours : minutes<br>Hrs mins | P15 (a-b) |

## EXPANDED: Physical Activity

### Sedentary behavior

The following question is about sitting or reclining at work, at home, getting to and from places, or with friends including time spent sitting at a desk, sitting with friends, traveling in car, bus, train, reading, playing cards or watching television, but do not include time spent sleeping.

*[INSERT EXAMPLES] (USE SHOWCARD)*

| | | |
|---|---|---|
| How much time do you usually spend sitting or reclining on a typical day? | ⌊_⌊_⌋ : ⌊_⌊_⌋<br>Hours : minutes<br>Hrs mins | P16 (a-b) |

## CORE: History of Raised Blood Pressure

| Question | Response | | Code |
|---|---|---|---|
| Have you ever had your blood pressure measured by a doctor or other health worker? | Yes<br>No | 1<br>2 *If No, go to H6* | H1 |
| Have you ever been told by a doctor or other health worker that you have raised blood pressure or hypertension? | Yes<br>No | 1<br>2 *If No, go to H6* | H2a |
| Were you first told in the past 12 months? | Yes<br>No | 1<br>2 | H2b |
| In the past two weeks, have you taken any drugs (medication) for raised blood pressure prescribed by a doctor or other health worker? | Yes<br>No | 1<br>2 | H3 |
| Have you ever seen a traditional healer for raised blood pressure or hypertension? | Yes<br>No | 1<br>2 | H4 |
| Are you currently taking any herbal or traditional remedy for your raised blood pressure? | Yes<br>No | 1<br>2 | H5 |

## CORE: History of Diabetes

| | | | |
|---|---|---|---|
| Have you ever had your blood sugar measured by a doctor or other health worker? | Yes<br>No | 1<br>2 *If No, go to H12* | H6 |
| Have you ever been told by a doctor or other health worker that you have raised blood sugar or diabetes? | Yes<br>No | 1<br>2 *If No, go to H12* | H7a |
| Were you first told in the past 12 months? | Yes<br>No | 1<br>2 | H7b |
| In the past two weeks, have you taken any drugs (medication) for diabetes prescribed by a doctor or other health worker? | Yes<br>No | 1<br>2 | H8 |
| Are you currently taking insulin for diabetes prescribed by a doctor or other health worker? | Yes<br>No | 1<br>2 | H9 |
| Have you ever seen a traditional healer for diabetes or raised blood sugar? | Yes<br>No | 1<br>2 | H10 |
| Are you currently taking any herbal or traditional remedy for your diabetes? | Yes<br>No | 1<br>2 | H11 |

| CORE: History of Raised Total Cholesterol | | | |
|---|---|---|---|
| **Question** | **Response** | | **Code** |
| Have you ever had your cholesterol (fat levels in your blood) measured by a doctor or other health worker? | Yes<br>No | 1<br>2 *If No, go to H17* | H12 |
| Have you ever been told by a doctor or other health worker that you have raised cholesterol? | Yes<br>No | 1<br>2 *If No, go to H17* | H13a |
| Were you first told in the past 12 months? | Yes<br>No | 1<br>2 | H13b |
| In the past two weeks, have you taken any oral treatment (medication) for raised total cholesterol prescribed by a doctor or other health worker? | Yes<br>No | 1<br>2 | H14 |
| Have you ever seen a traditional healer for raised cholesterol? | Yes<br>No | 1<br>2 | H15 |
| Are you currently taking any herbal or traditional remedy for your raised cholesterol? | Yes<br>No | 1<br>2 | H16 |
| **CORE: History of Cardiovascular Diseases** | | | |
| Have you ever had a heart attack or chest pain from heart disease (angina) or a stroke (cerebro-vascular accident or incident)? | Yes<br>No | 1<br>2 | H17 |
| Are you currently taking aspirin regularly to prevent or treat heart disease? | Yes<br>No | 1<br>2 | H18 |
| Are you currently taking statins (Lovastatin/ Simvastatin/Atorvastatin or any other statin) regularly to prevent or treat heart disease? | Yes<br>No | 1<br>2 | H19 |

| CORE: Lifestyle Advice | | | |
|---|---|---|---|
| **Question** | **Response** | | **Code** |
| During the past 12 months, have you visited a doctor or other health worker? | Yes<br>No<br>*and C1=2, go to CX1* | 1<br>2 *If No and C1=1, go to M1 If No* | H20 |
| During any of your visits to a doctor or other health worker in the past 12 months, were you advised to do any of the following?<br>*(RECORD FOR EACH)* | | | |
| Quit using tobacco or don't start | Yes<br>No | 1<br>2 | H20a |
| Reduce salt in your diet | Yes<br>No | 1<br>2 | H20b |
| Eat at least five servings of fruit and/or vegetables each day | Yes<br>No | 1<br>2 | H20c |
| Reduce fat in your diet | Yes<br>No | 1<br>2 | H20d |
| Start or do more physical activity | Yes<br>No | 1<br>2 | H20e |
| Maintain a healthy body weight or lose weight | Yes<br>No | 1<br>2 | H20f |
| Reduce sugary beverages in your diet | Yes<br>No | 1 *If C1=1 go to M1*<br>2 *If C1=1 go to M1* | H20g |

## CORE (for women only): Cervical Cancer Screening

The next question asks about cervical cancer prevention. Screening tests for cervical cancer prevention can be done in different ways, including Visual Inspection with Acetic Acid/vinegar (VIA), pap smear and Human Papillomavirus (HPV) test. VIA is an inspection of the surface of the uterine cervix after acetic acid (or vinegar) has been applied to it. For both pap smear and HPV test, a doctor or nurse uses a swab to wipe from inside your vagina, take a sample and send it to a laboratory. It is even possible that you were given the swab yourself and asked to swab the inside of your vagina. The laboratory checks for abnormal cell changes if a pap smear is done, and for the HP virus if an HPV test is done.

| | | | |
|---|---|---|---|
| Have you ever had a screening test for cervical cancer, using any of these methods described above? | Yes<br>No<br>Don't know | 1<br>2 *If No, go to CX11*<br>77 | CX1 |

## Step 2 Physical Measurements

### CORE: Blood Pressure

| Question | Response | | Code |
|---|---|---|---|
| Interviewer ID | | ⌊_⌊_⌊_⌊_⌋ | M1 |
| Device ID for blood pressure | | ⌊_⌊_⌋ | M2 |
| Cuff size used | Small<br>Medium<br>Large | 1<br>2<br>3 | M3 |
| Reading 1 | Systolic ( mmHg) | ⌊_⌊_⌊_⌊_⌋ | M4a |
| | Diastolic (mmHg) | ⌊_⌊_⌊_⌊_⌋ | M4b |
| Reading 2 | Systolic ( mmHg) | ⌊_⌊_⌊_⌊_⌋ | M5a |
| | Diastolic (mmHg) | ⌊_⌊_⌊_⌊_⌋ | M5b |
| Reading 3 | Systolic ( mmHg) | ⌊_⌊_⌊_⌊_⌋ | M6a |
| | Diastolic (mmHg) | ⌊_⌊_⌊_⌊_⌋ | M6b |
| During the past two weeks, have you been treated for raised blood pressure with drugs (medication) prescribed by a doctor or other health worker? | Yes<br>No | 1<br>2 | M7 |

### CORE: Height and Weight

| | | | |
|---|---|---|---|
| For women: Are you pregnant? | Yes<br>No | 1 If Yes, go to M 16<br>2 | M8 |
| Interviewer ID | | ⌊_⌊_⌊_⌊_⌋ | M9 |
| Device IDs for height and weight | Height<br>Weight | ⌊_⌊_⌋<br>⌊_⌊_⌋ | M10a<br>M10b |
| Height | In Centimeters (cm) | ⌊_⌊_⌊_.⌊_⌋ | M11 |
| Weight<br>If too large for scale 666.6 | In Kilograms (kg) | ⌊_⌊_⌊_.⌊_⌋ | M12 |

### CORE: Waist

| | | | |
|---|---|---|---|
| Device ID for waist | | ⌊_⌊_⌊_⌊_⌋ | M13 |
| Waist circumference | In Centimeters (cm) | ⌊_⌊_⌊_.⌊_⌋ | M14 |

| EXPANDED: Hip Circumference and Heart Rate | | | |
|---|---|---|---|
| Hip circumference | In Centimeters (cm) | ⌊_⌊_⌊_⌋.⌊_⌋ | M15 |
| Heart Rate | | | |
| Reading 1 | Beats per minute | ⌊_⌊_⌊_⌋ | M16a |
| Reading 2 | Beats per minute | ⌊_⌊_⌊_⌋ | M16b |
| Reading 3 | Beats per minute | ⌊_⌊_⌊_⌋ | M16c |

## Step 3: Biochemical Measurements

### CORE: Blood Glucose

| Question | Response | | Code |
|---|---|---|---|
| During the past 12 hours have you had anything to eat or drink, other than water? | Yes<br>No | 1<br>2 | B1 |
| Technician ID | | ⌊_⌊_⌊_⌊_⌋ | B2 |
| Device ID | | ⌊_⌊_⌊_⌋ | B3 |
| Time of day blood specimen taken (24 hour clock) | ⌊_⌊_ : ⌊_⌊_<br>Hours : minutes<br>Hrs mins | | B4 |
| Fasting blood glucose<br>*[CHOOSE ACCORDINGLY: MMOL/L OR MG/DL]* | mmol/l<br>mg/dl | ⌊_⌊_⌊_.⌊_⌋<br>⌊_⌊_⌊_.⌊_⌋ | B5 |
| Today, have you taken insulin or other drugs (medication) that have been prescribed by a doctor or other health worker for raised blood glucose? | Yes<br>No | 1<br>2 | B6 |

### CORE: Blood Lipids

| | | | |
|---|---|---|---|
| Device ID | | ⌊_⌊_⌋ | B7 |
| Total cholesterol<br>*[CHOOSE ACCORDINGLY: MMOL/L OR MG/DL]* | mmol/l<br>mg/dl | ⌊_⌊_⌊_.⌊_⌋<br>⌊_⌊_⌊_.⌊_⌋ | B8 |
| During the past two weeks, have you been treated for raised cholesterol with drugs (medication) prescribed by a doctor or other health worker? | Yes<br>No | 1<br>2 | B9 |

### CORE: Urinary sodium and creatinine

| | | | |
|---|---|---|---|
| Had you been fasting prior to the urine collection? | Yes<br>No | 1<br>2 | B10 |
| Technician ID | | ⌊_⌊_⌊_⌊_⌋ | B11 |
| Device ID | | ⌊_⌊_⌋ | B12 |
| Time of day urine sample taken (24 hour clock) | ⌊_⌊_ : ⌊_⌊_<br>Hours : minutes<br>Hrs mins | | B13 |
| Urinary sodium | mmol/l | ⌊_⌊_⌊_.⌊_⌋ | B14 |
| Urinary creatinine | mmol/l | ⌊_⌊_⌊_.⌊_⌋ | B15 |
| | mg/dl | ⌊_⌊_⌊_.⌊_⌋ | |

## Cervical Cancer

### CORE and EXPANDED: Cervical cancer (expanded questions are shaded)

**The next questions ask about cervical cancer prevention. Screening tests for cervical cancer prevention can be done in different ways, including Visual Inspection with Acetic Acid/vinegar (VIA), pap smear and Human Papillomavirus (HPV) test. VIA is an inspection of the surface of the uterine cervix after acetic acid (or vinegar) has been applied to it. For both pap smear and HPV test, a doctor or nurse uses a swab to wipe from inside your vagina, take a sample and send it to a laboratory. It is even possible that you were given the swab yourself and asked to swab the inside of your vagina. The laboratory checks for abnormal cell changes if a pap smear is done, and for the HP virus if an HPV test is done.**

| Question | Response | | Code |
|---|---|---|---|
| *The next questions CX2 – CX10 are administered only to those that ever had a screening test for cervical cancer (CX1=1). If CX1=2, go to CX11.* | | | |
| At what age were you first tested for cervical cancer? | Age | ⌊_⌋⌊_⌋ | CX2 |
| | Don't know | 77 | |
| | Refused | 88 | |
| When was your last (most recent) test for cervical cancer? | Less than 1 year ago | 1 | CX3 |
| | 1-2 years ago | 2 | |
| | 3-5 years ago | 3 | |
| | More than 5 years ago | 4 | |
| | Don't know | 77 | |
| | Refused | 88 | |
| What is the main reason you had your last test for cervical cancer? | Part of a routine exam | 1 | CX4 |
| | Following up on abnormal or inconclusive result | 2 | |
| | Recommended by healthcare provider | 3 | |
| | Recommended by other source | 4 | |
| | Experiencing pain or other symptoms | 5 | |
| | Other | 6 | |
| | Don't know | 77 | |
| | Refused | 88 | |
| Where did you receive your last test for cervical cancer?<br><br>*[INSERT COUNTRY-SPECIFIC CATEGORIES]* | Doctor's office | 1 | CX5 |
| | Mobile clinic | 2 | |
| | Community clinic | 3 | |
| | Hospital | 4 | |
| | Other | 5 | |
| | Don't know | 77 | |
| | Refused | 88 | |
| What was the result of your last (most recent) test for cervical cancer? | Did not receive result | 1 *If CC6=1, go to next section* | CX6 |
| | Normal/ Negative | 2 *If CC6=2, go to next section* | |
| | Abnormal /Positive | 3 | |
| | Suspect cancer | 4 | |
| | Inconclusive | 5 | |
| | Don't know | 77 | |
| | Refused | 88 | |

| CORE and EXPANDED: Cervical cancer | | | |
|---|---|---|---|
| **Question** | **Response** | | **Code** |
| Did you have any follow-up visits because of your test results? | Yes | 1 | CX7 |
| | No | 2 | |
| | Don't know | 77 | |
| | Refused | 88 | |
| Did you receive any treatment to your cervix because of your test result? | Yes | 1 | CX8 |
| | No | 2 *If No, go to CC10* | |
| | Don't know | 77 *If Don't know, go to next section* | |
| | Refused | 88 *If Refused, go to next section* | |
| Did you receive treatment during the same visit as your last test for cervical cancer? | Yes | 1 *If Yes, go to next section* | CX9 |
| | No | 2 *If No, go to next section* | |
| | Don't know | 77 *If Don't know, go to next section* | |
| | Refused | 88 *If Refused, go to next section* | |
| What is the main reason you did not receive treatment? | Was not told I needed treatment | 1 | CX10 |
| | Did not know how/where to get treatment | 2 | |
| | Embarrassment | 3 | |
| | Too expensive | 4 | |
| | Didn't have time | 5 | |
| | Clinic too far away | 6 | |
| | Poor service quality | 7 | |
| | Fear (afraid of procedure; afraid of social stigma) | 8 | |
| | Cultural beliefs | 9 | |
| | Family member would not allow it | 10 *If CC10=10, go to C10Spec, else go to next section* | |
| | Don't know | 77 | |
| | Refused | 88 | |
| | Family member (please specify) | \|_\|_\|_\|_\|_\|_\|_\| | CX10Spec |
| What is the main reason you have never had a cervical cancer test? | Did not know how/where to get test | 1 | CX11 |
| | Embarrassment | 2 | |
| | Too expensive | 3 | |
| | Didn't have time | 4 | |
| | Clinic too far away | 5 | |
| | Poor service quality | 6 | |
| | Fear (afraid of procedure; afraid of social stigma) | 7 | |
| | Cultural beliefs | 8 | |
| | Family member would not allow it | 9 *If CC11=9, go to C11Spec, else go to next section* | |
| | Don't know | 77 | |
| | Refused | 88 | |

## Oral Health

### Oral Health

The next questions ask about your oral health status and related behaviours.

| Question | Response | | Code |
|---|---|---|---|
| How many natural teeth do you have? | No natural teeth | 1 *If no natural teeth, go to 04* | 01 |
| | 1 to 9 teeth | 2 | |
| | 10 to 19 teeth | 3 | |
| | 20 teeth or more | 4 | |
| | Don't know | 77 | |
| How would you describe the state of your teeth? | Excellent | 1 | 02 |
| | Very Good | 2 | |
| | Good | 3 | |
| | Average | 4 | |
| | Poor | 5 | |
| | Very Poor | 6 | |
| | Don't Know | 77 | |
| How would you describe the state of your gums? | Excellent | 1 | 03 |
| | Very Good | 2 | |
| | Good | 3 | |
| | Average | 4 | |
| | Poor | 5 | |
| | Very Poor | 6 | |
| | Don't know | 77 | |
| How would you describe the state of your mouth (mucosa)? | Excellent | 1 | 04 |
| | Very Good | 2 | |
| | Good | 3 | |
| | Average | 4 | |
| | Poor | 5 | |
| | Very Poor | 6 | |
| | Don't know | 77 | |
| Do you have any removable dentures? | Yes | 1 | 05 |
| | No | 2 *If No, go to 07* | |
| Which of the following removable dentures do you have? *(RECORD FOR EACH)* | | | |
| An upper jaw denture | Yes | 1 | 06a |
| | No | 2 | |
| A lower jaw denture | Yes | 1 | 06b |
| | No | 2 | |
| During the past 12 months, did your teeth, gums or mouth cause any pain or discomfort? | Yes | 1 | 07 |
| | No | 2 | |
| How long has it been since you last saw a dentist? | Less than 6 months | 1 | 08 |
| | 6-12 months | 2 | |
| | More than 1 year but less than 2 years | 3 | |
| | 2 or more years but less than 5 years | 4 | |
| | 5 or more years | 5 | |
| | Never received dental care | 6 *If Never, go to 010* | |

| Oral Health | | | |
|---|---|---|---|
| What was the main reason for your last visit to the dentist? | Consultation / advice | 1 | |
| | Pain or trouble with teeth, gums or mouth | 2 | |
| | Treatment / Follow-up treatment | 3 | 09 |
| | Routine check-up treatment | 4 | |
| | Other | 5 If Other, go to 09 other | |
| | Other (please specify) | ⌊_⌊_⌊_⌊_⌊_⌊_⌋ | 09other |

| Oral Health, Continued | | | |
|---|---|---|---|
| Question | Response | | Code |
| How often do you clean your teeth? | Never | 1 *If Never, go to 014a* | |
| | Once a month | 2 | |
| | 2-3 times a month | 3 | |
| | Once a week | 4 | 010 |
| | 2-6 times a week | 5 | |
| | Once a day | 6 | |
| | Twice or more a day | 7 | |
| Do you use toothpaste to clean your teeth? | Yes | 1 | |
| | No | 2 *If No, go to 013a* | 011 |
| Do you use toothpaste containing fluoride? | Yes | 1 | |
| | No | 2 | 012 |
| | Don't know | 77 | |
| Do you use any of the following to clean your teeth? *(RECORD FOR EACH)* | | | |
| Toothbrush | Yes | 1 | 013a |
| | No | 2 | |
| Wooden toothpicks | Yes | 1 | 013b |
| | No | 2 | |
| Plastic toothpicks | Yes | 1 | 013c |
| | No | 2 | |
| Thread (dental floss) | Yes | 1 | 013d |
| | No | 2 | |
| Charcoal | Yes | 1 | 013e |
| | No | 2 | |
| Chewstick / miswak | Yes | 1 | 013f |
| | No | 2 | |
| Other | Yes | 1 *If Yes, go to 013 other* | 013g |
| | No | 2 | |
| | Other (please specify) | ⌊_⌊_⌊_⌊_⌊_⌊_⌋ | 013 other |
| Have you experienced any of the following problems during the past 12 months because of the state of your teeth, gums or mouth? *(RECORD FOR EACH)* | | | |
| Difficulty in chewing foods | Yes | 1 | 014a |
| | No | 2 | |
| Difficulty with speech/trouble pronouncing words | Yes | 1 | 014b |
| | No | 2 | |
| Mouth feels dry | Yes | 1 | 014c |
| | No | 2 | |
| Have a persistent wound and/or swelling in the mouth for more than three weeks | Yes | 1 | |
| | No | 2 | 014d |

| Oral Health | | | | |
|---|---|---|---|---|
| Have a red or red and white patch in the mouth | Yes | 1 | O14e | |
| | No | 2 | | |
| Felt tense because of problems with teeth or mouth | Yes | 1 | O14f | |
| | No | 2 | | |
| Embarrassed about appearance of teeth | Yes | 1 | O14g | |
| | No | 2 | | |
| Avoid smiling because of teeth | Yes | 1 | O14h | |
| | No | 2 | | |
| Sleep is often interrupted | Yes | 1 | O14i | |
| | No | 2 | | |
| Days not at work because of teeth or mouth | Yes | 1 | O14j | |
| | No | 2 | | |
| Difficulty doing usual activities | Yes | 1 | O14k | |
| | No | 2 | | |
| Less tolerant of spouse or people close to you | Yes | 1 | O14l | |
| | No | 2 | | |
| Reduced participation in social activities | Yes | 1 | O14m | |
| | No | 2 | | |

| Violence and Injury | | | | |
|---|---|---|---|---|
| In the past 30 days, how often did you use a seat belt when you were the driver or passenger of a motor vehicle? | All of the time | 1 | | V1 |
| | Sometimes | 2 | | |
| | Never | 3 | | |
| | Have not been in a vehicle in past 30 days | 4 | | |
| | No seat belt in the car I usually am in | 5 | | |
| | Don't Know | 77 | | |
| | Refused | 88 | | |
| In the past 30 days, how often did you wear a helmet when you drove or rode as a passenger on a motorcycle or motor- scooter? | All of the time | 1 | | V2 |
| | Sometimes | 2 | | |
| | Never | 3 | | |
| | Have not been on a motorcycle or motor-scooter in past 30 days | 4 | | |
| | Do not have a helmet | 5 | | |
| | Don't Know | 77 | | |
| | Refused | 88 | | |
| In the past 12 months, have you been involved in a road traffic crash as a driver, passenger, pedestrian, or cyclist? | Yes (as driver) | 1 | | V3 |
| | Yes (as passenger) | 2 | | |
| | Yes (as pedestrian) | 3 | | |
| | Yes (as a cyclist) | 4 | | |
| | No | 5 | *If No, go to V5* | |
| | Don't know | 77 | *If don't know, go to V5* | |
| | Refused | 88 | *If Refused, go to V5* | |
| Did you have any injuries in this road traffic crash which required medical attention? | Yes | 1 | | V4 |
| | No | 2 | | |
| | Don't know | 77 | | |
| | Refused | 88 | | |

## Violence and Injury

The next questions ask about the most serious accidental injury you have had in the past 12 months.

| | | | |
|---|---|---|---|
| In the past 12 months, were you injured accidentally, other than the road traffic crashes which required medical attention? | Yes | 1 | V5 |
| | No | 2 *If No, go to V8* | |
| | Don't know | 77 *If don't know, go to V8* | |
| | Refused | 88 *If Refused, go to V8* | |
| Please indicate which of the following was the cause of this injury. | Fall | 1 | V6 |
| | Burn | 2 | |
| | Poisoning | 3 | |
| | Cut | 4 | |
| | Near-drowning | 5 | |
| | Animal bite | 6 | |
| | Other (specify) | 7 | |
| | Don't know | 77 | |
| | Refused | 88 | |
| | Other (please specify) ⌊_____⌋ | | V6 other |

## CORE: Injury, Continued

| Question | Response | | Code |
|---|---|---|---|
| Where were you when you had this injury? | Home | 1 | V7 |
| | School | 2 | |
| | Workplace | 3 | |
| | Road/Street/Highway | 4 | |
| | Farm | 5 | |
| | Sports/athletic area | 6 | |
| | Other (specify) | 7 | |
| | Don't know | 77 | |
| | Refused | 88 | |
| | Other (please specify) ⌊_____⌋ | | V7 other |

## EXPANDED: Unintentional Injury

The next questions ask about behaviors related to your safety and whether or not you drink alcohol while driving or being a passenger.

| Question | Response | | Code |
|---|---|---|---|
| In the past 30 days, how often did you wear a helmet when you rode a bicycle or pedal cycle? | Always | 1 | V8 |
| | Sometimes | 2 | |
| | Never | 3 | |
| | Did not ride in the past 30 days | 4 | |
| | Don't Know | 77 | |
| | Refused | 88 | |
| In the past 30 days, how many times have you driven a motorized vehicle when you have had 2 or more alcoholic drinks? *(USE SHOWCARD)* | Number of times | ⌊__⌋ | V9 |
| | Don't Know | 77 | |
| | Refused | 88 | |
| In the past 30 days, how many times have you ridden in a motorized vehicle where the driver has had 2 or more alcoholic drinks? *(USE SHOWCARD)* | Number of times | ⌊__⌋ | V10 |
| | Don't Know | 77 | |
| | Refused | 88 | |

## Violence and Injury

### CORE: Violence

The following questions are about different experiences and behaviors that are related to violence.

| Question | Response | | Code |
|---|---|---|---|
| In the past 12 months, how many times were you in a violent incident in which you were injured and required medical attention? | Never | 1 *If never, go to V14* | V11 |
| | Rarely (1- 2 times) | 2 | |
| | Sometimes (3 - 5 times) | 3 | |
| | Often (6 or more times) | 4 | |
| | Don't know | 77 *If don't know, go to V14* | |
| | Refused | 88 *If Refused, go to V14* | |
| The next questions ask about the most serious violent incidence you have had in the past 12 months. | | | |
| Please indicate which of the following caused your most serious injury in the last 12 months. *(USE SHOWCARDS)* | Being shot with a firearm | 1 | V12 |
| | A weapon (other than a firearm) was used by the person who injured me | 2 | |
| | Being injured without any weapon (slapped, pushed...) | 3 | |
| | Don't know | 77 | |
| | Refused | 88 | |
| Please indicate the relationship between yourself and the person(s) who caused your injury. | Intimate partner | 1 | V13 |
| | Parent | 2 | |
| | Child, sibling, or other relative | 3 | |
| | Friend or acquaintance | 4 | |
| | Unrelated caregiver | 5 | |
| | Stranger | 6 | |
| | Official or legal authorities | 7 | |
| | Other (specify) | 8 | |
| | Refused | 88 | |
| | Other (please specify) | \|_\|_\|_\|_\|_\|_\|_\| | V13 other |
| Looking back on your childhood (before age 18 years), did a parent or adult in the household ever push, grab, shove, slap, hit, burn, or throw something at you? | Never | 1 | V14 |
| | Very rarely | 2 | |
| | Once a month | 3 | |
| | Once a week | 4 | |
| | Almost daily | 5 | |
| | Don't know | 77 | |
| | Refused | 88 | |
| Looking back on your childhood, did an adult or anyone at least five years older than you ever touch you sexually or try to make you touch them sexually or force you to have sex? | Yes | 1 | V15 |
| | No | 2 | |
| | Refused | 88 | |
| Since your 18th birthday, have you ever experienced a sex act involving either vaginal, oral, or anal penetration against your will? | Never | 1 | V16 |
| | Once | 2 | |
| | A few times (2 to 3 times) | 3 | |
| | Many times (4 or more times) | 4 | |
| | Don't know | 77 | |
| | Refused | 88 | |

## EXPANDED: Violence

The next questions ask about behaviors related to your safety.

| Question | Response | | Code |
|---|---|---|---|
| In the past 12 months, have you been frightened for the safety of yourself or your family because of the anger or threats of another person(s)? | Yes | 1 | |
| | No | 2 *If no, go to V19* | V17 |
| | Refused | 88 *If refused, go to V19* | |
| Please specify of whom you were most often frightened. | Intimate partner | 1 | |
| | Parent | 2 | |
| | Child, sibling, or other relative | 3 | |
| | Friend or acquaintance | 4 | |
| | Unrelated caregiver | 5 | V18 |
| | Stranger | 6 | |
| | Official or legal authority | 7 | |
| | Other (specify) | 8 | |
| | Refused | 88 | |
| | Other (please specify) | \|_\|_\|_\|_\|_\|_\|_\| | V18 other |
| Have you carried a loaded firearm on your person outside the home in the last 30 days? | No | 1 | |
| | Yes, for protection | 2 | |
| | Yes, for work | 3 | V19 |
| | Yes, for sport (e.g., hunting target practice) | 4 | |
| | Refused | 88 | |

# Tobacco Policy

## Tobacco Policy

You have been asked questions on tobacco consumption before. The next questions ask about tobacco control policies. They include questions on your exposure to the media and advertisement, on cigarette promotions, health warnings and cigarette purchases.

| Question | Response | | Code |
|---|---|---|---|
| During the past 30 days, have you noticed information about the dangers of smoking cigarettes or that encourages quitting through the following media? *(RECORD FOR EACH)* | | | |
| Newspapers or magazines | Yes | 1 | |
| | No | 2 | TP1a |
| | Don't know | 77 | |
| Television | Yes | 1 | |
| | No | 2 | TP1b |
| | Don't know | 77 | |
| Radio | Yes | 1 | |
| | No | 2 | TP1c |
| | Don't know | 77 | |
| During the past 30 days, have you noticed any advertisements or signs promoting cigarettes in stores where cigarettes are sold? | Yes | 1 | |
| | No | 2 | TP2 |
| | Don't know | 77 | |
| During the past 30 days, have you noticed any of the following types of cigarette promotions? *(RECORD FOR EACH)* | | | |

| | | | |
|---|---|---|---|
| Free samples of cigarettes | Yes | 1 | TP3a |
| | No | 2 | |
| | Don't know | 77 | |
| Cigarettes at sale prices | Yes | 1 | TP3b |
| | No | 2 | |
| | Don't know | 77 | |
| Coupons for cigarettes | Yes | 1 | TP3c |
| | No | 2 | |
| | Don't know | 77 | |
| Free gifts or special discount offers on other products when buying cigarettes | Yes | 1 | TP3d |
| | No | 2 | |
| | Don't know | 77 | |
| Clothing or other items with a cigarette brand name or logo | Yes | 1 | TP3e |
| | No | 2 | |
| | Don't know | 77 | |
| Cigarette promotions in the mail | Yes | 1 | TP3f |
| | No | 2 | |
| | Don't know | 77 | |
| The next questions TP4 - TP7 are administered to current smokers only. | | | |
| During the past 30 days, did you notice any health warnings on cigarette packages? | Yes | 1 | TP4 |
| | No | 2 *If no, go to TP6* | |
| | Did not see any cigarette packages | 3 *If "did not see any cigarette pack ages", go to TP6* | |
| | Don't know | 77 *If Don't know, go to TP6* | |
| During the past 30 days, have warning labels on cigarette packages led you to think about quitting? | Yes | 1 | TP5 |
| | No | 2 | |
| | Don't know | 77 | |
| The last time you bought manufactured cigarettes for yourself, how many cigarettes did you buy in total? | Number of cigarettes | ⌊\|\|\|\|⌋ | TP6 |
| | Don't know or Don't smoke or purchase manuf. Cigarettes | 7777 | |
| | If "Don't know or don't smoke or purchase manuf. cig.", | *End section* | |
| In total, how much money did you pay for this purchase? (DIGITS TO BE ADAPTED TO COUNTRY NEEDS) | Amount | ⌊\|\|\|\|⌋ | TP7 |
| | Don't know | 7777 | |
| | Refused | 8888 | |

# STEPS

## PREVALENCE OF NONCOMMUNICABLE DISEASE RISK FACTORS

## THE REPUBLIC OF RWANDA _ 2022

www.moh.gov.rw | www.rbc.gov.rw