National survey

for noncommunicable disease risk factors

and injuries using WHO STEPS approach

in Timor-Leste – 2014

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Ministério da Saúde

World Health Organization
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Acronyms

BMI	body mass index
BP	blood pressure
CI	confidence interval
COPD	chronic obstructive pulmonary disease
CVD	cardiovascular disease
DBP	diastolic blood pressure
dl	decilitre
EA	enumeration areas
HDL	high density lipoproteins
Hg	mercury
HLM	high-level meeting
MET	metabolic equivalents of task
mmol/L	millimoles per litre
NCD	noncommunicable disease
PDA	personal digital assistant
PEN	WHO Package of Essential NCD
PHC	primary health care
PI	principal investigator
PPS	probability proportionate to size
SBP	systolic blood pressure
UNTL	Universidade Nacional Timor Lorosa'e
WHO	World Health Organization
WHO FCTC	WHO Framework Convention on Tobacco Control

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Message

Noncommunicable diseases are the most common cause of morbidity and mortality worldwide and in the South-East Asia Region also. Planning for control of noncommunicable diseases (NCDs) needs persuasive evidence generated through a strong monitoring system and through surveillance of NCD risk factors. Using the standard protocol of STEPs noncommunicable disease risk factors survey not only provides the proper opportunity for strengthening strategies to control NCDs, but also for international and national comparisons at different time intervals.

To this end, WHO took the initiative to collect internationally comparable data on risk factors of chronic diseases to provide specific measures and interventions to reduce them. We are happy to note that the Ministry of Health Timor-Leste, has come up with this report of NCD risk factors 2014 which presents the key findings from the nationally representative survey conducted in Timor-Leste and delivers new insights into the health status of its population. It is also praiseworthy to note that the Ministry of Health is promoting collaboration and multisectoral approaches through integrated surveillance to address the major NCD risk factors.

The WHO Regional Office for South-East Asia is committed to supporting and facilitating the STEPs survey and NCD-related surveillance activities in Member States. We hope that Timor-Leste will use the rich data presented in this document to strengthen and improve the NCD programme in the country for the wellbeing of its population.

Dr Poonam Khetrapal Singh
Regional Director
WHO South-East Asia Region

Foreword

The first national survey on risks factors of Non Communicable Diseases in Timor-Leste was conducted in 2014 with full financial support from government of Timor-Leste and technical support from the World Health Organization. The survey has been conducted in 11 countries in South East Asia Region including Timor-Leste using WHO STEPS approach. The government of Timor-Leste through the Ministry of Health commissioned this study to the Faculty of Medicine and Health Sciences, *Universidade Nacional Timor Lorosa'e (UNTL).*

The survey aims to collect information on risks factors of non-communicable diseases from population aged 18-69 years old both male and female focusing on tobacco use and alcohol consumptions, diet and physical activity, anthropometric measurement, examination of fasting blood glucose and total cholesterol. The findings of this study is expected to guide planning, implementation, monitoring and evaluation of NCD interventions in Timor-Leste as well as to compare progresses made in relation to NCD situations in Timor-Leste with our neighboring countries.

On behalf of the Ministry of Health, I thank the government for making available financial resources to fund this survey, and also thank the World Health Organization for providing technical and material support, providing international experts to assist our national research team in this survey from proposal development, training of enumerators and supervisers, data analysis and report writing. My thanks goes to the National Statistics Directorate for allowing its database on 2010 population census and enumeration areas from which the sample frame were drawn in.

I congratulate the *Universidade Nacional Timor Lorosa'e* particularly the Faculty of Medicine and Health Sciences, the researchers, supervisers and enumerators for hard working and dedication in completing this study timely. I thank the study participants for their valuable information. This study would not have been possible without their participations and collaborations. I also thank the municipal administrators, all13 directors of municipal health services and all chief of villages for their cooperation for allowing this study to take place.

I welcome the report of the first NCD Risk Factors Survey 2014 and expect that all information contains in this survey to be useful and can be appropriately used, therefore,as the Minister for Health of the 6th Constitutional Government, I encourage all health managers and professionals, and other entities that work in health sector to properly use data from this survey as guidance and tools to improve the quality and the range of NCD services in Timor-Leste.

Dili, 10 November 2015

Dra. Maria do Céu Sarmento Pina da Costa

Minister for Health, RDTL

Acknowledgement

This is the first ever survey conducted in Timor-Leste, attempting to reveal the evidence on risk factors for NCD in the country. This survey is made possible through the support of the Ministry of Health and the WHO country, Regional Office and Headquarters. The Ministry of Health financed this survey and WHO provided support for training, procurement of equipment and survey materials and assignment of consultants/expert to assist Timorese researchers. Therefore, to each of them, we give our highest appreciation and gratitude. WHO also provided experts: Dr Rajesh Pandav, Dr Dhirendra N Sinha, Dr Lubna Bhatti, Ms Melanie Cowan, Dr Renu Madanlal Garg, Professor (Mr) Anand Krishnan, and Dr Gampo Dorji to support us in refining the methodology and assisting us in data analysis and writing up of the final report. We thank them for their intellectual inputs and generous contributions to this work. We also thank Mr Naveen Agarwal for his contribution in creating all the graphs in this report.

We are grateful to the former Minister of Health, H.E. Dr Sergio Lobo, for approving this survey and thank the current Minister for Health, H.E. Dr Maria do Ceu Sarmento P. da Costa, for her continuous support and for being the first to initiate the proposal for this study.

We thank *Universidade Nacional Timor Lorosa'e* for letting the researchers and lecturers of the FMCS take part in this research as supervisors.

Our gratitude goes to the enumerators who have worked very hard, criss-crossing the country, climbing mountains and valleys in order to find the samples. We thank especially the female enumerators who were in their early trimester of pregnancy, but worked tirelessly to complete the survey. We feel it is important to also include their names in this report: Aida B dos Santos, Antonio S de Carvalho, Arifin A dos Santos, Aristides C Carvalho Avelina M. Soares, Feronimo FL Hornai, Flavio J Boavida, Guerina C Rosales, Heitor C Pereira, Hermenegildo Pereira, Hernanio J da Silva, Ivonia FC Belo, Joaquim J Vaz, Joaquim S Araujo, Jacinta Vaz, Jeronimo de Sousa, Julio M Goncalves, Marcelo M Mali, Norjelito Francisco, Neslon V Caldas and Pascoela V Martins. Our gratitude goes to the 12 supervisors who supervised data collection in fields throughout the territory. These supervisors are: M/s Acacio G Pereira, Antonio Bukiifai, Antonio Ximenes, Eduardo C Gaio, Joaquim Pinto, Joaquim G de Carvalho, Jose Dionisio Ximenes, Leonildo TT da Costa, and Manuel C Fernandes; and Ms Etelvina J Tilman, Meriana Barreto, and Natalia Pereira.

We thank Mr Leoneto Pinto (WHO country office staff), Mr Francisco Soares (MoH NCD staff), Mr Joe R de Oliveira (Administrative and Finance Officer) for their support in helping us in the secretarial work. We are also thankful to the Ranemotor Company who facilitated transport during the surveys.

We thank all authorities who facilitated this survey and informed and allowed their communities to take part in it. Finally, we thank all respondents who voluntarily gave their time and information; this report could not be produced without their participation.

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Executive summary

Timor-Leste, as a newly independent country, is currently confronted with challenges of high prevalence and incidence of communicable diseases and neglected tropical diseases. However, noncommunicable diseases (NCD) such as cardiovascular diseases, hypertension, cholesterol, stroke, diabetes, chronic respiratory disease, cancer and kidney diseases etc. are also on the rise and becoming major health challenges for the Timorese national health system.

This is the report of the first Timor-Leste NCD survey using WHO STEPS approach, jointly conducted by the Ministry of Health and *Universidade Nacional Timor-Lorosae* with technical support from the World Health Organization during July–December 2014.

The purpose of this survey is to provide the baseline assessment of the key risk factors of NCD and among Timorese adults, to help develop a comprehensive national programme and set targets on NCD and injury prevention and control in Timor-Leste.

A cross-sectional study survey was implemented using WHO STEPS methodology. The survey included males and females aged 18–69 years old, residing in Timor-Leste. Sample size calculation used an expected risk factor prevalence of 50%, absolute precision of 5%, alpha error of 5% and design effect of 1.5. A multistage complex sample design was used to produce representative data. Probability proportional to size sampling was used to select 150 enumeration areas (EA) from total 1827 EA in all 13 districts. Systematic random sampling was used to then select 18 households from each of the selected EA. From each selected household, one eligible individual was selected by KISH method. The data collection instruments consisted of three steps: Step one (interviews), Step two (physical measurements) and Step three (biochemical measurements). The survey team was composed of one principal investigator, supported by four co-investigators, 12 supervisors, 21 enumerators and one administrative officer.

Data weighting and analysis was conducted in accordance with STEPs survey using Microsoft Excel, access and EpiInfo version 3.5.4 Software. In total, 320 items of questionnaire were analysed.

The survey included 2609 adults [1083 (41.5%) males and 1526 (58.5%) females] and brought the overall response rate to 96.3%. Out of the sample population, 882 (34.4%) of the sample had no formal education or schooling and 2055(78.9%) currently married.

The findings indicate that more than half (56%) of adults used some form of tobacco product, and tobacco use was much higher among men (70.6%) as compared to women (28.9%). Among respondents, 48.6% smoked and 19.8% used smokeless tobacco products. More men (69.5%) than women (9.6%) smoked tobacco; more women (26.8%) than men (16.1%) used smokeless tobacco products. Nearly nine in 10 adults were exposed to secondhand smoke in homes; more than half of adults (51%) were exposed to secondhand smoke in work places. Respondents started smoking very young, with mean age of starting smoking being 16.4 years.

The prevalence of current alcohol consumption (drank in the past 30 days) was 17.4% (42.8% men and only 2% women). Among those who drank in the past 12 months, 40% were monthly drinkers, nearly 60% were weekly drinkers and less than 1% were daily drinkers. Among current drinkers 97.1% indulged in lower-end drinking. On average, current drinkers had taken at least

one alcoholic drink on 15.1 occasions in the past 30 days and consumed 4.4 standard drinks on a single drinking occasion. More men (21.8%) engaged in heavy episodic drinking (six or more drinks on any occasion in the past 30 days) than females (1%).

The surveyed population ate fruits on average on 2.3 days in a typical week. Average vegetable consumption was relatively better than fruit consumption, with vegetables being eaten on 6.7 days in a typical week. The quantity of intake was measured by servings: one serving of fruit was defined as equal to a medium-sized banana or apple or equivalent and one serving of vegetables equal to one cup of green leafy vegetables or half a cup of cooked vegetables. The minimum requirement for an adult is five or more servings of fruit or vegetables a day. The overall daily per capita consumption in an average day of fruit was 0.9 servings; and of vegetables was five servings (5.4 servings of fruits and vegetables). Comparing this to the minimum recommended intake, 77.5% of respondents did not consume recommended amounts of fruit and vegetables on an average day.

Physical activity related to work, transportation and recreational activities was assessed in terms of minutes that caused the respondent to feel breathless or experience increased heart rate. The WHO recommendations on physical activity for health are ≥150 minutes of moderate-intensity physical activity per week, 75 minutes of vigorous physical activity per week, or an equivalent combination of the two. It was found that 16.7% (men 12.8%, women 23.3%) of all respondents did not meet the WHO recommendations. However, 73.3% of females and 39.9% of males were not engaging in vigorous physical activity.

Among women aged 30–49, only 1.1% ever had a screening test for cervical cancer.

The report also indicates that majority of drivers or passengers of motor vehicles, motorcycles or motor-scooters did not always use seat-belts or helmets. During the past 30 days, 97.5% didn't use seat-belt in a motorized vehicle and 81.9% didn't use a helmet when riding a cycle or a motorcycle.

The survey found the mean body mass index (BMI) for overall population was 21.2 kg/m^2. There was no difference mean of BMI between males (21.3 kg/m2) and females (21.0 kg/m^2). The overall prevalence of overweight was 11.2%. The overweight rate was significantly higher among age group 45–69 (18.7%) than among age group 18–44 (8.8%). Females tended to be overweight than males.

Raised blood pressure (defined as having SBP ≥140 mmHg and/or DBP ≥90 mmHg or currently on medication for raised blood pressure) was found 39.3% all adults (45.3% of men and 28% of women), 97.3% of those were currently not on medication for raised blood pressure (98.1% of men and 94.7% of women).

The overall mean fasting blood glucose level (including those currently on medication for raised blood glucose) for both sexes was 4.3 mmol/L or 77.6 mg/dl, with very little difference between men and women and among the age groups. Overall prevalence of raised blood glucose (fasting glucose level ≥7.0 mmol/L or on medication for raised blood glucose) was 1.5 %.

Prevalence of raised total cholesterol (defined as having total cholesterol ≥5.0 mmol/L or currently on medication for raised blood cholesterol) was 21% in both sexes, with more females having raised blood cholesterol than males (25.5%versus 18.5%).

Among all respondents, only 7.8% had no common risk factors for NCDs; three fourths (72.8%) had 1-2 risk factors; and one in five respondents (19.4%) had 3-5 risk factors. Among respondents, 1.4% had a 10-year CVD risk ≥ 30% or with existing CVD. Less than 20% of respondents received life style advice by health-care provider.

If combined, the risk factors (currently daily smokers, less than five servings of fruits and vegetables per day, insufficient physical activity, overweight (BMI ≥ 25 kg/m^2) and raised BP (SBP≥140 nad/or DBP ≥ 90 mmgH or currently on medication for raised BP), it was found that overall for both sexes, only 7.8% of the population had none of the above risk factors and 19.4% had three or more of the above risk factors.

Based on the findings of the first NCD risk factor survey in Timor-Leste, the following are the key recommendations:

♦ The survey suggests a low NCD health-care coverage for NCD and existence of a high treatment gap. NCD screening services should be improved and integrated and strengthened at the primary health-care services. One model for consideration is introducing the WHO Package of Essential NCD (PEN) services in the primary health-care services to increase the coverage of NCD services.

♦ Given that most primary health-care facilities in Timor-Leste are staffed by competent health professionals (doctors, nurses and midwives), interventions on NCD could be integrated into a PHC package and family health programmes (*Saúde na familia*).

♦ The survey indicated that the key NCD risk factors are highly prevalent. Strategic health promotion for NCD should be stepped up to promote physical activity, encourage consumption of healthy diet including consumption of fruits and vegetables, and reduce intake of salt, alcohol and tobacco. The national recommendations for diet, and physical activity, if available, should be advocated through the media and developed further.

♦ Addressing tobacco, alcohol and processed food requires adequate legislation and enforcement systems. In particular, legislation and education discouraging smoking in home and work settings and public spaces, marketing and health warning labels of tobacco, alcohol, and processed foods should be well regulated and enforced.

♦ Nationwide campaign to encourage smokers to quit smoking and discourage youth and students from taking up smoking should start immediately.

♦ Road safety policies including control of drink-driving, use of seat-belt and helmet should be enforced as a public health measure.

♦ NCD prevention and control should also design gender-sensitive programmes to improve consumption of fruits and or vegetables among females and reduce female overweight and undernutrition.

♦ Pap smear screening programmes should be introduced as routine services in the health-care settings. Diagnostics, treatment and control, including palliative care, should also receive appropriate attention.

♦ Increasing physical activity in the population will require appropriate structural planning and development and partnerships between various sectors including health, education, roads, planning, and transport to ensure creation of health-promoting environment such as pedestrian lanes, urban parks, and community walk trails. Adequacy of the current urban plans should be made sensitive enough to accommodate the "health-in-all-policies approach". A multisectoral framework action for NCD prevention and control should be introduced to holistically address NCD prevention and control.

♦ Health education on NCD risk factors and promotion of healthy lifestyle should be advocated in communities by quitting smoking, reducing alcohol consumption, eating healthy foods, doing regular physical activity. Health workers and those who understand the value of healthy lifestyle should be encouraged to be role models for others.

♦ Training and upgrading the knowledge and awareness on NCD risk factors, and NCD with their consequences of health workers and the population should be initiated.

♦ Surveillance system for NCD to monitor NCD trends and risk factors trends regularly should be reinforced.

♦ Health systems should be equipped with adequate infrastructure, human resource, diagnostic tools, drugs and equipment to address NCD problems in all level of health- care facilities.

1. Introduction

Noncommunicable diseases (NCD) are a group of conditions that covers cardiovascular diseases, cancer, mental health problems, diabetes mellitus, and chronic respiratory disease. Preventable actions include common NCD modifiable risk factors such as tobacco use, unhealthy diet, lack of physical activity, and the harmful use of alcohol. Exposure to the NCD risk factors lead to four major metabolic diseases: overweight/obesity, high blood pressure, raised blood sugar and blood lipids which, in turn, are responsible for four groups of major NCD: (cardiovascular diseases, diabetes, chronic respiratory diseases and cancers.

NCD are responsible for more than 36 million global deaths per year, of whom most die prematurely and contributes to a sizeable economic impact on households, industries and societies through losses in income, productivity and capital formation. The increasing burden of NCD is attributed to population ageing, rapid and unplanned urbanization, as well as international trade introducing processed foods and diets high in total energy, fats, salt, and sugar into the daily lives of people in developing countries. Aggressive marketing by tobacco and alcohol industries is also resulting in increased use of these products. Furthermore, injuries are emerging as the leading contributors to death, hospitalization and disability in South-East Asian countries. Unintentional injuries including transport accidents, falls, drowning, and burns constitute the major burden due to injuries, while intentional injuries (self-harm and assault) are also important in selected settings.

WHO's Global Strategy for the prevention and control of NCD rests on the three pillars of surveillance, primary prevention and strengthened health care. The United Nations General Assembly convened a High-Level Meeting (HLM) in New York in September 2011. As a follow-up to the Political Declaration of UN HLM, WHO developed a Global Action Plan (2013–2020) and a comprehensive monitoring framework with indicators and global voluntary targets through a consultative process. This meeting provided an opportunity for strengthening and shaping primary prevention in a most cost-effective way in tackling risk factors for NCD. While endorsing the Global Action Plan along with the list indicators and targets, the Sixty-sixth World Health Assembly in May 2013 also urged Member States to consider development of national plans of action for addressing NCD along with national monitoring framework with targets and indicators.

Brief snapshot of NCD situation in Timor-Leste prior to this survey

Timor-Leste gained independence in May 2002. Situated in the eastern half of the island of Timor, which lies between Indonesia and Australia, the country occupies a land area of 14 874 km^2 and a population of 1 066 409 in 2010 census. Thirty per cent of the population lives in the urban areas with two thirds living in the country's capital Dili (NSD 2010). Administratively, Timor-Leste is divided into 13 districts, 65 sub-districts, 442 *sucos* and 2225 *aldeias.* The climate is tropical; hot, semi-arid; rainy and dry seasons.

Timor-Leste is facing a double burden of disease. Communicable diseases such as TB, malaria and dengue continue to pose a public health challenge, while on the other hand, NCDs including cardiovascular and chronic obstructive pulmonary diseases have emerged among the top ten causes of mortality. Hospital data from 2012 indicate that about 22% of all deaths were due to

NCDs (cardiovascular diseases, stroke, diabetes, chronic respiratory disease and kidney diseases). Available information indicates that tobacco use and the use of firewood and kerosene for cooking are the major risk factors for NCD. In particular, tobacco use is highly prevalent among males. According to the Demographic Health Survey (2009), current tobacco use among males between ages 15–49 years is 69.5% while tobacco use among females was low (4.7%). Prevalence of overweight among women and diabetes are also emerging as possible public health problems. Overweight among females was 5.1%, and the urban females were 2.5 times more overweight than their rural counterparts (DHS 2009–2010). According to the blindness survey on population >40 years, the prevalence of raised blood sugar was 4.6%. No information is available on diet and physical activity and blood pressure from the Timorese population.

Information on NCD and injury risk factors is essential to plan an evidence-based national strategy for their prevention and control. Timor-Leste is in the process of formulating its national strategy for NCD and injury prevention and control and fixing its own targets.

Timor-Leste's grand strategic development plan 2011–2030 envisions a healthier population as a result of comprehensive, high quality health services accessible to all Timorese people. To achieve a healthier population in the country, the role of prevention and control of NCD and injuries cannot be ignored; they play a central part in this.

Purpose of the STEPS Survey

This is the first national survey in Timor-Leste to establish a baseline on NCDs and injury situations for understanding the magnitude of the NCDs and injuries ,with which NCDs trends can be tracked in future. The data from the study are also expected to help develop a comprehensive national programme and set targets on NCD and injury prevention and control in Timor-Leste. WHO provided full technical support for the survey including the training of the teams for data collection.

Study objectives

(1)   To assess the prevalence and establish a baseline of key NCD risk factors in the Timorese population using WHO STEPs approach;

(2)   To assess the burden of injuries and identify key risk factors; and

(3)   To utilize the data from the survey to develop evidence-based national strategy for NCD and injury prevention and control.

2. Methodology

The NCD Risk Factor Survey was commossioned by the Ministry of Health to the Universidade Nacional Timor Lorosa'e (UNTL). The technical agreement for this survey was officially signed by the Minister for Health Dr Sergío Gama Lobo Sp.B and the Rector of the UNTL Prof Dr Aurélio Guterres on 8 July 2014

Figure 2.1: The signing of the Technical Agreement by the Minister for Health and the Rector of the Universidade Nacional Timor Lorosa'e

Study design

This was a cross-sectional survey conducted using the WHO's eSTEPS survey methodology to assess the prevalence of risk factors for NCD and injuries among the Timorese population.

Study population

The target population of the study was all individuals (both male and females), aged 18–69 years old residing in Timor-Leste. The purpose was to generalize from the study sample to overall population of the country in order to make inferences about the situation of NCD and injuries.

Sample size

Since there was no existing prevalence data on NCDs and injuries in Timor-Leste, assumption was made that the estimated prevalence of the risk factors within the target population was 50%.

Using assumptions of absolute precision – 5%; alpha error of 5%; design effect of 1.5 for complex sampling strategy; and response rate of 85% provided a sample size of 576 or (384*1.5). The total sample size for the country is based on the age/sex subgroups for which the estimates were required. The sub-groups were 18–44 years and 45–69 years for each sex i.e. four subgroups only which gives the final sample size of 2304 or (576*4).

Sample size was based on the following assumptions:

♦ Prevalence of risk factor – 50% (Maximizes sample size for a given precision)

♦ Absolute precision – 5%

♦ Alpha error of - 5%

♦ Design effect – 1.5

♦ Strata = 4 (age groups 18–44, 45–69 for each sex) = 2304

♦ With a correction for an anticipated 85% response rate, this came to 2710.

Sampling procedure: A multi-stage sampling procedure was adopted. All 13 districts were included in the sample. Although the National Parliament Act **Parlamento nacional: LEI N.O 11/2009 de 7 de Outubro** *Divisão Administrativa do Território* defines the administrative division of the territory of Timor-Leste in which "district" is replaced by "municipality" and the term "municipality" has been increasingly used in 2015, in this survey we continue to use "district". The sample was drawn proportionally from enumeration areas (EA) in districts. Timor-Leste has a total 1827 EAs based on census 2010. At the first stage, a total of 150 EA were selected by probability proportional to size (PPS) sampling method. Number of EAs selected per district for this survey is presented in Table 1. At the second stage, 18 households were selected from each EA by systematic random sampling (2710/150). Thirdly, from each selected household; one individual was selected within the required age-group by KISH sampling.

Table 2.1: Number of Enumeration Areas selected per district

No	Districts	Population	Percentage (%)	Total *sucos*	EA per district	EA selected	Household
1	Aileu	47 643	4.15	31	80	6	108
2	Ainoro	63 121	5.49	21	99	8	144
3	Baucau	116 934	10.18	59	204	16	288
4	Bobonaro	96 271	8.38	50	210	15	270
5	Covalima	62 203	5.41	30	111	9	162
6	Dili	266 236	23.17	31	297	29	522
7	Ermera	124 687	10.85	52	206	16	288
8	Lautem	65 475	5.7	34	127	9	162
9	Liquica	67 831	5.9	23	109	8	144
10	Manatuto	45 098	3.93	29	78	6	108
11	Manufahi	51 904	4.52	29	87	6	108
12	Oecusse	68 654	5.98	18	121	11	198
13	Viqueque	72 797	6.34	35	96	11	198
	Total	1 148 854	100	442	1827	150	2700

Source: Directorate of the National Statistics, Ministry of Planning and Finance

Study instruments

The data collection instruments consisted of three steps and corresponding modules, based on WHO STEPS methodology and was translated into Tetum as follows:

STEP 1 included demographic information and behavioural measurements such as assessments on tobacco use, alcohol consumption, diet including salt and physical activity (Figure 2.1). These questions were adapted for the national context and optional modules on violence and injury and tobacco policy were added.

Figure 2.2: An enumerator conducting interview for STEP-1 accompanied by supervisors

STEP 2 included anthropometric measurements, which included height, weight and waist circumference. Height and weight were measured to calculate the body mass index (BMI). Height was measured by a portable height/length measuring scale to the nearest millimeter (Figure 2.3).

Figure 2.3: Enumerators assembling height equipment to measure the height

Weight was measured by an electronic platform scale. Waist circumference was measured in a separate room or area screened off from other people, in order to maintain the privacy of

participants. This was measured by an elastic measuring tape directly on the skin at the end of a normal expiration, at the midpoint between the lower margin of the last palpable rib and the top of the hip bone with the arms relaxed at the sides. Waist circumference was measured to the nearest millimeter.

Blood pressure was measured using digital sphygmomanometers on the left arm, while the participants were in sitting position with the hand resting on the armrest of the chair or some objects; after ensuring that they had rested for 10 minutes. A second and third reading was taken after two minutes' resting interval (Figure 2.4) and the mean of the last two measurements of blood pressure used for analysis.

Figure 2.4: Measuring blood pressure using digital sphygmomanometer

STEP 3 included biochemical measurements including fasting blood glucose and cholesterol were done by dry chemistry method using CardioChek devices (Figure 2.5). All the measurements were taken at the house of the participant.

Figure 2.5: Measuring fasting blood glucose and cholesterol

Fieldwork and data collection

Study team: The study team was composed of one principal investigator (PI), and four co-investigators. PI was fully responsible for the overall planning, implementation, supervision, data analysis and report-writing of the risk factors survey. The co-investigators contributed to the implementation of the study from proposal development, data collection, data analysis and writing up the report. The co-investigators also supervised data collection, ensuring that enumerators and district supervisors conducted the survey in a rigorous and scientifically sound manner. They also supported translation of questionnaires and report of the survey, and assisted in data analysis and report writing.

Data Collection Team: The project recruited 21 enumerators from the newly graduated medical doctors and nurses to collect data in the field and 12 supervisors to supervise data collection. Thereafter, the enumerators were divided into seven teams of three enumerators each. Twelve supervisors were assigned to supervise data collection in districts.

Data collection plan: Data was collected using HP iPAQs personal digital assistants (PDA) loaded with eSTEPs software. Data collection, commencing on 8 October 2014, was divided into two phases and was completed on 18 December 2014. The first phase started with eight districts (Aileu, Ainaro, Bobonaro, Covalima, Dili, Ermera, Liquiça and Oecussi). All seven groups of enumerators conducted data collection in Dili district. After completing data collection in Dili, six groups were assigned to collect data in 12 districts, supervised by 11 supervisors. The remaining group and one supervisor were sent to undertake data collection in the enclave district of Oecussi and in the island of Atauro (part of Dili District). After completion of these seven districts, the data collection team moved to phase two, with the remaining six districts (Baucau, Lautem, Manatuto, Manufati and Viqueque). Each EA was covered in three days, depending on the size of households and geographical and climatic conditions. In addition, enumerators were provided with the map of EA supplied by the National Statistics Directorate, Ministry of Finance, to assist in identifying geographic boundaries of the selected EA (Figure 2.6).

Figure 2.6: Enumerators reading the map to identify the demarcation of EA

Day 1 – Survey of the *suco* for verification of the number of households, calculation of sampling interval, approaching households, taking consent from the selected individuals, interviewing for the STEP 1 and STEP 2, informing the respondents to fast for next day.

Day 2 and 3 – Morning fasting samples to be taken from the respondents (by trained enumerators only) whose interviews were completed the previous day. The remaining respondents were interviewed and asked to be fasting for the next day to collect blood samples. The data collection effectively took 45 days.

Training of interviewers

The training of enumerators (21) and district supervisors was held in Dili on 23–27 June 2014 at the National Institute of Health, Ministry of Health. The training workshop was conducted with the technical support from the World Health Organization, Ministry of Health, and technical task force (Figure 2.7). The members of the task force committee assisted in the training of enumerators as facilitators. Training also included methods of interpersonal communication, obtaining informed consent and correct measuring methods of physical and biochemical measurement factors and learning electronic data collection using PDA.

Figure 2.7: Training of enumerators and supervisors

Quality control

One field coordinator was identified for each district. The team coordinator ensured completeness of data collection. The team coordinator also ensured high compliance rate in the sample and brought to notice any problem to the PI at the earliest so that action can be taken. The coordinator also visited one house among the houses visited by two field workers a day before and filled the details in a hard copy (including anthropometry), which was compared to the handheld entries at the end of the day.

District supervisors supervised the data collection team twice a week to maintain rigorous data collection procedures and ensure the completeness of data collection, and help resolve any problem arising during data collection period. They liaised with the local authorities and community

leaders before commencement of the study in a district, information head of respective selected *sucos* where EA were drawn from before the commencement of the data collection and ensured that community and community leaders are informed about the study. This is important in order to maximize the participant of community and study sample in this study.

Principal investigator and co-investigators supervised the data collection team once per week to maintain rigorous data collection procedures and ensured the completeness of data collection, and helped resolve any problem arising during data collection period which could not be handled by enumerators and supervisors in the field.

Data management and analysis

Data management: The data from PDAs were transferred to the computer at the end of coverage of each EA. These were uploaded into one complete file. Data cleaning and data weighting was done in accordance with the WHO STEPS guidelines for analysis.

Data analysis: Data analysis was conducted in accordance with STEPs survey. EpiInfo software was used to assist data analysis. Frequency tables were calculated for various variables. The team was supported by an experienced statistician provided by WHO, who worked with the research team to undertake statistical analysis of this survey.

Ethical considerations

Ethical clearance was obtained from the Technical and Ethical Review Committee of the Cabinet of Ethics and Quality Control, Ministry of Health for ethical review. Written informed consent was obtained from the participants of the survey. Confidentiality was maintained in the process of collection, management and analysis of data. All those found to be having abnormal values for biomedical risk factors were referred to the nearest health facilities.

3. Background characteristics

A total of 2609 respondents participated in the study with 1083 (41.5%) males and 1526 (58.5%) females (Table 1.3). By age group, 62.3% were in the 18–44 years age group and 37.7% were aged 45–69 years. According to the education level, 34.4% had no formal schooling, 17.3% had less than primary education, 22.1% had secondary school education, 2.9% had college/university and others either completed pre-secondary or secondary levels.

Almost equal proportion of male and female respondents were currently married (80% of males and 78% of females). Slightly more females were widowed as compared to males (8% versus 3%).

Overall, males were more employed than females. Among male respondents, 37.7% were self-employed, 32.7% unpaid, 16% government employees, and 14% were nongovernment employees. Nearly three fourth of females (72.5%) were unpaid workers, while only one third (32.7%) of males were unpaid workers. (Table 3.1)

Table 3.1: Characteristics of the study participants

Variables	Males		Females		Both sexes	
Age group (in years) (n=2609)	n	(%)	n	(%)	n	(%)
18–44	602	37.1	1022	62.9	1624	62.2
45–69	481	48.8	504	51.2	985	37.8
18–69	1083	41.5	1526	58.5	2609	100.0
Education (n=2562)	**n=1069**		**n=1493**		**n=2562**	
No formal schooling	326	30.5	556	37.2	882	34.4
Less than primary school	213	19.9	230	15.4	443	17.3
Primary school completed	92	8.6	119	8.0	211	8.2
Pre secondary school completed	104	9.7	191	12.8	295	11.5
Secondary school completed	233	21.8	333	22.3	566	22.1
College diploma completed	45	4.2	34	2.3	79	3.1
College/university completed	48	4.5	27	1.8	75	2.9
Post graduate degree	8	0.8	3	0.2	11	0.4
Marital status	**n=1079**		**n=1523**		**n=2602**	
Never married	155	14.4	160	10.5	315	12.1
Currently married	863	80.0	1192	78.3	2055	78.9
Separated	11	1.0	19	1.2	30	1.2
Divorced	9	0.8	17	1.1	26	1.0
Widowed	31	2.9	116	7.6	147	5.6
Cohabiting	10	0.9	19	1.2	29	1.1

Variables	Males		Females		Both sexes	
Age group (in years) (n=2609)	n	(%)	n	(%)	n	(%)
Employment status	**n= 1033**		**n=1465**		**n=2498**	
Government employee	165	16	68	4.6	233	9.3
Non-government employee	141	13.6	58	4.0	199	8.0
Self-employed	389	37.7	277	18.9	666	26.7
Unpaid	338	32.7	1062	72.5	1400	56.0

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4. Tobacco use

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

Current smokers are respondents who smoked any tobacco products (e.g. cigarettes, cigars or hand-rolled tobacco) in the past 30 days. Current smokers are composed of daily smokers and non-daily smokers. Daily smokers are those who smoke tobacco products every day; and non-daily smokers those current smokers who smoke tobacco products not on a daily basis.

Non-smokers consisted of those who never smoked and former smokers; never smoked refers to those who had never smoked tobacco products, whereas former smokers were those who had quit smoking.

Current tobacco users

More than half of the respondents (56.1%) reported current use of any form of tobacco (smoked or smokeless tobacco) (Figure 4.1). Tobacco use was much higher among men (70.6%) as compared to women (28.9%).

Nearly half (48.6%) of the respondents were current smokers with a much higher prevalence among males (69.5% males and 9.6% females). More women (26.8%) than men (16.1%) used smokeless tobacco products.

Figure 4.1: Current tobacco users by sex and type of tobacco
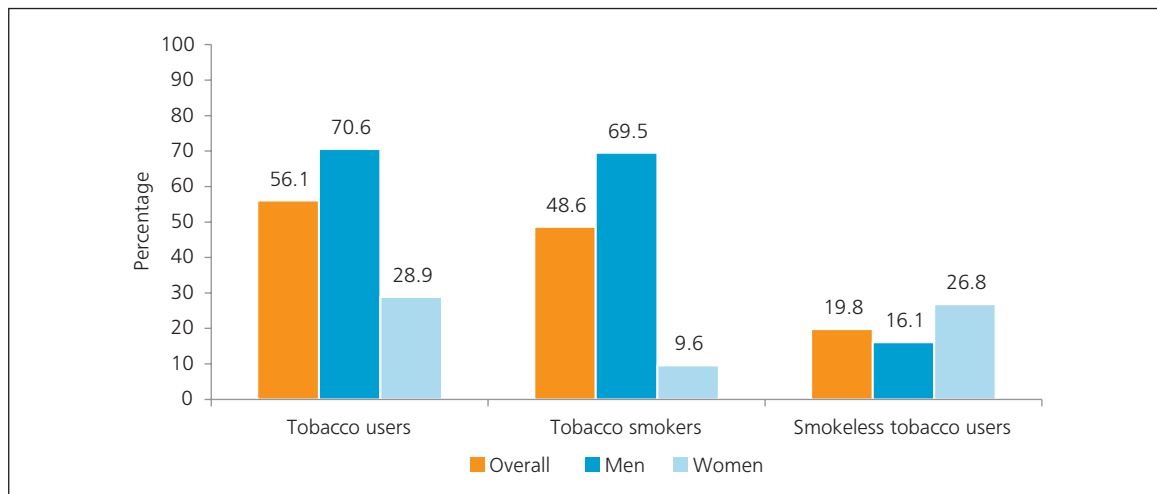
Older people smoked more than younger groups both among men and women (Figure 4.2).

Figure 4.2: Percentage of current tobacco smokers by sex and age
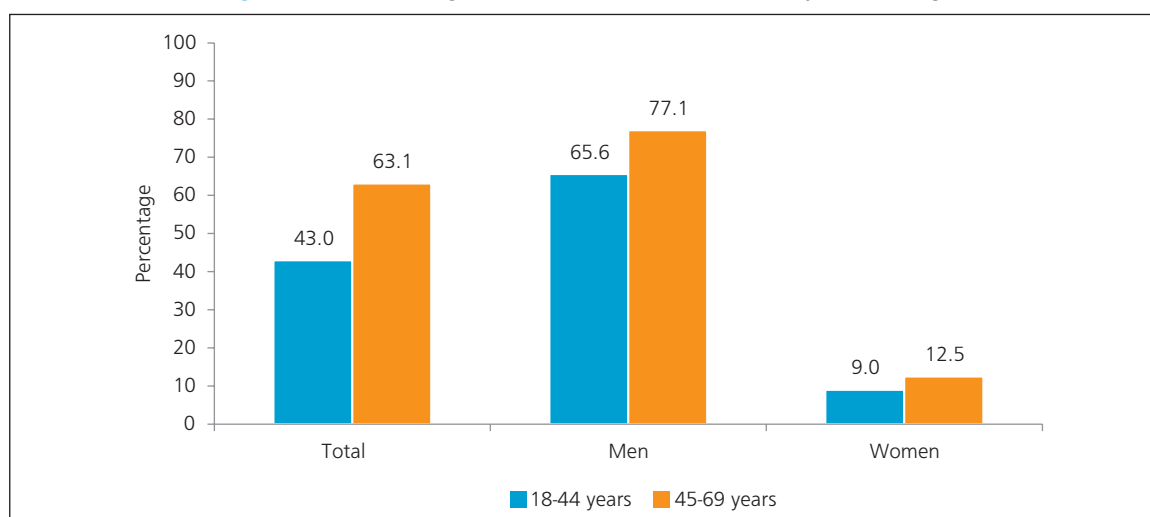
Daily and non-daily smokers

The proportion of current daily smokers was significantly higher among men (49.6%) as compared to women (7.8%). Ratios of non-daily and daily smoking among men was 1:2.5, while this proportion among women was 1:4 (Figure 4.3). A higher proportion of the older age group smoked daily as compared to the younger age group. (Annex 1, Table 4.2)

Figure 4.3: Proportion of never smokers, former smokers, non-daily and daily smokers among respondents by sex
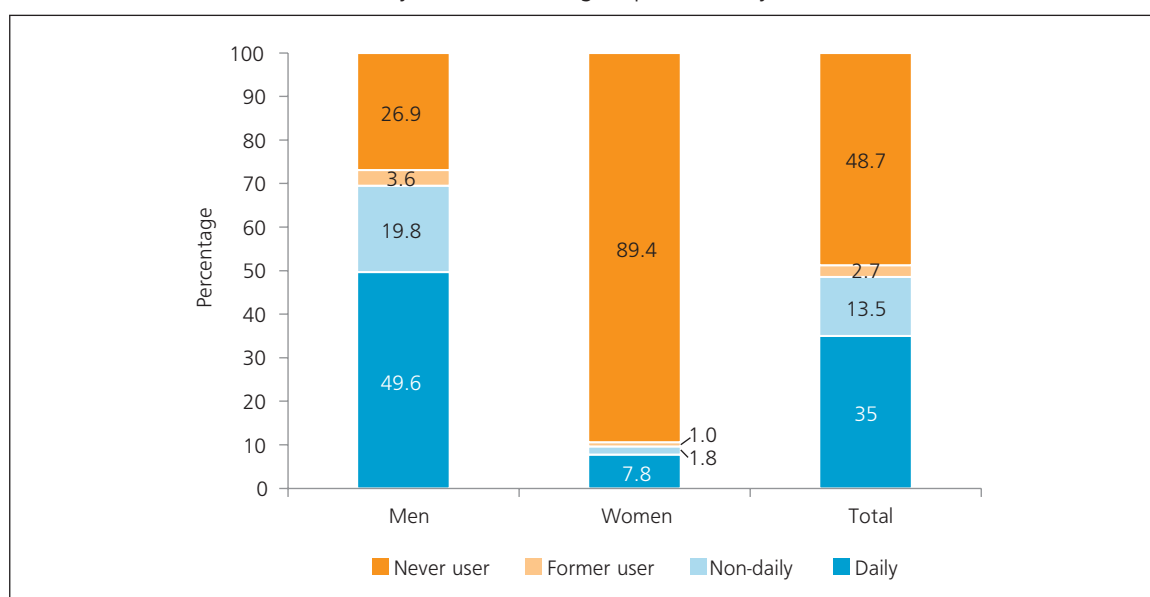
Types of smoked tobacco products used

Most of the the current smokers (94.8%) used manufactured cigarettes, which men smoked more than women (95.2% versus 89.3%) (Annex 1, Table 4.7).

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Age of initiation and duration of smoking

Figure 4.4 presents the mean age at which daily smokers started smoking. The survey found that the mean age of initiation of smoking was 16.3 years for men and 17.6 years for women. The age of starting smoking in men is similar between the younger and older age groups (16.2 and 16.4 years old respectively); however, women in the younger age group started smoking much earlier (16.4 years old) than those in the older age group (25 years) (Annex 1, Table 2.4).

The mean duration of smoking was 27.2 years with prolonged exposures among males (28 years for males and 17.5 years for females) (Figure 4.4).

Figure 4.4: Mean age of initiation and duration of smoking among current daily smokers by sex
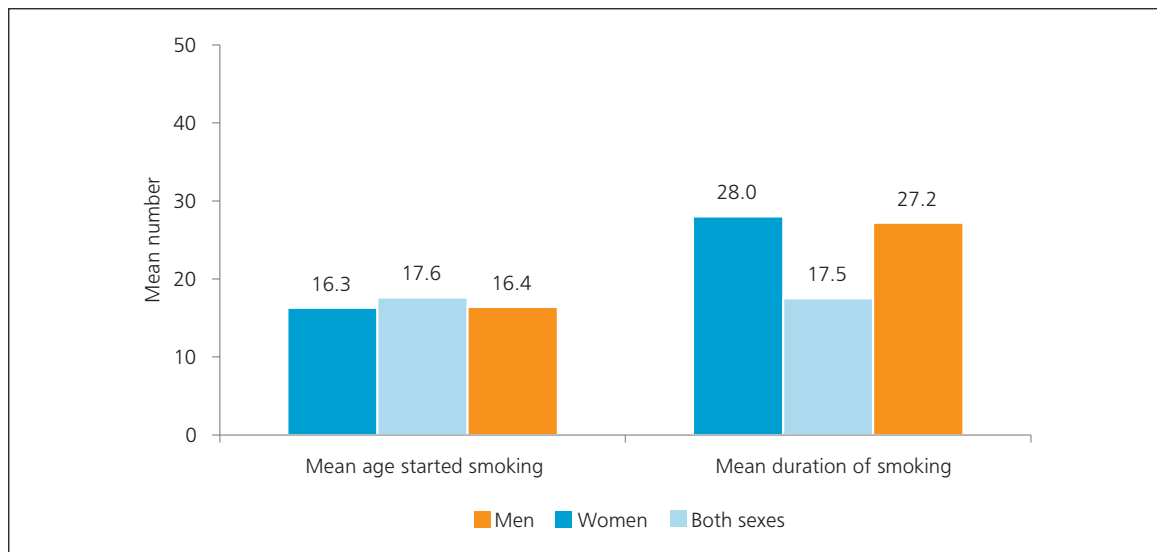
Current smokeless tobacco users

Overall, 19.8% of respondents used smokeless tobacco products such as snuff, chewing tobacco, betel etc. with much higher prevalence among women (26.8%) as compared to men (16.1%) (Figure 4.1). Older people among (45–69) both men and women used smokeless tobacco more than the younger age group (Figure 4.5).

Figure 4.5: Prevalence of current smokeless tobacco use, by sex and age
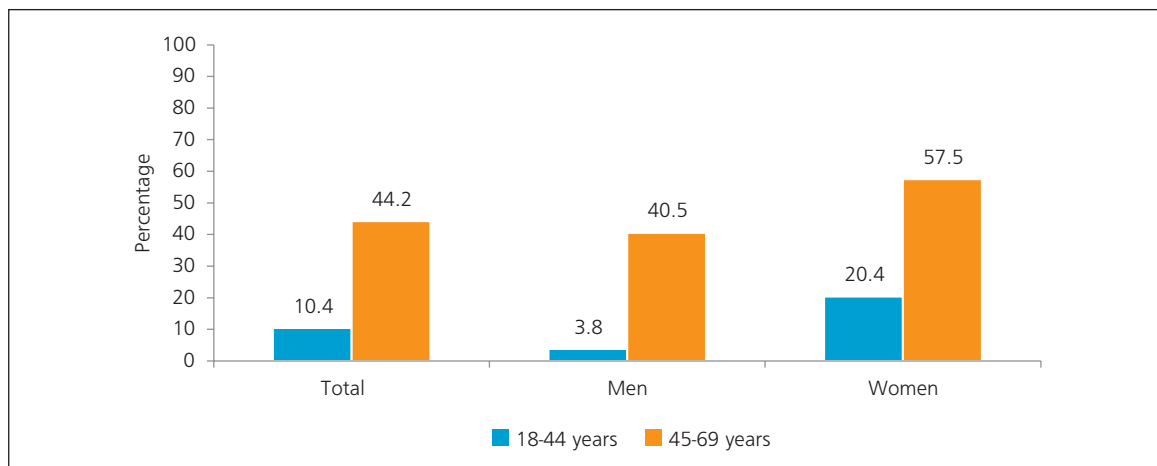
The ratio of non-daily and daily smokeless tobacco use among men was 1:7, while this proportion among women was 1:1 (Figure 4.6)

Figure 4.6: Proportion of never users, former users, non-daily and daily users of smokeless tobacco products, by sex
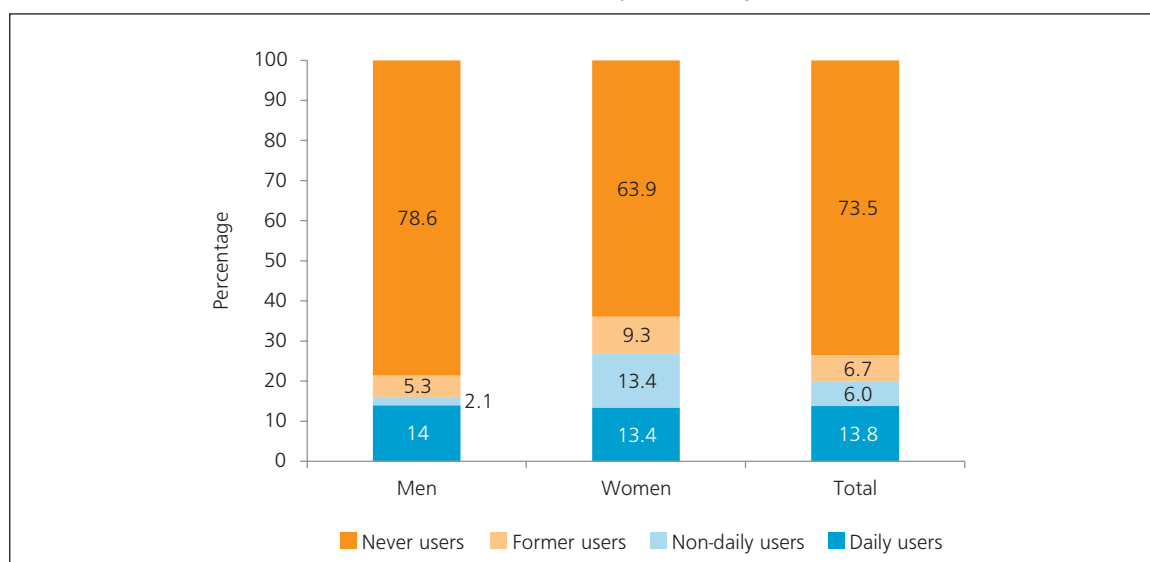
Types of smokeless tobacco products used

The most common smokeless tobacco product to be used was betel quid (59.3%) followed by chewing tobacco (13.2%). Use of betel quid among men is more than five times and in women nearly four times higher than chewing tobacco (Annex 1, Table 4.21).

Exposure to second-hand smoke

About 92.1% of total respondents reported being exposed to second-hand smoke at home during the past 30 days. This proportion was slightly higher in men than women (94.6% versus 87.4%). The overall prevalence of exposure to second-hand smoke in work place was 51.0%. The percentage of women exposed to second-hand smoke at home (87.4%) was more than twice as compared to exposure at workplace (38.9%). It was also observed that exposure of men at workplace was much higher than women (74.4% versus 38.9%). (Figure 4.7)

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Figure 4.7: Exposure to secondhand smoke among respondents by sex
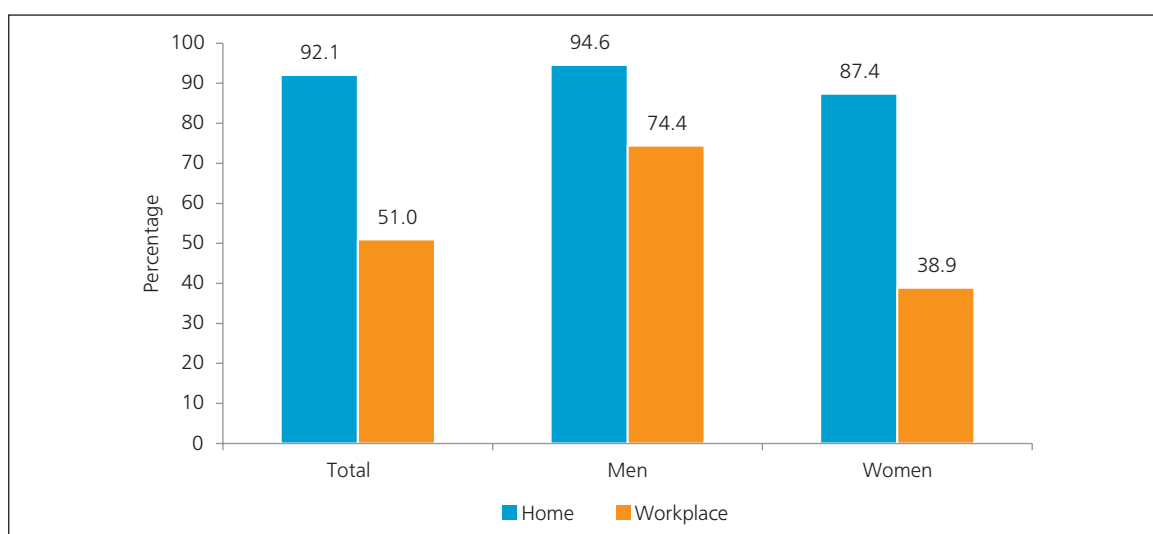
Smoking cessation

It is interesting to note that 23% of current smokers of both sexes have tried to stop smoking, with more women trying to quit smoking than men (75.2% women, 19.1% men) (Annex 1, Table 2.14). More people in the younger age group (18–44 years) wanted to quit than their older counterparts (45–69 years). (Figure 4.8)

Among these current smokers, 22.5% reported that a doctor or other health worker had advised them to stop smoking in the past 12 months and the proportion between male and female were about the same (Annex 1, Table 4.15).

Figure 4.8: Current smokers who have tried to stop smoking
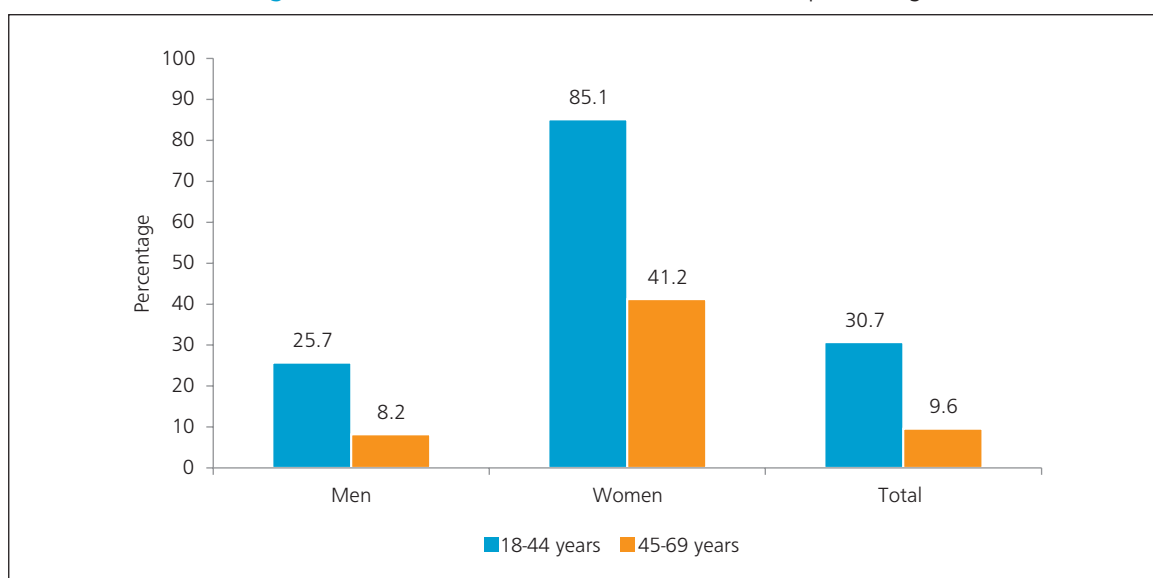
Tobacco policy

The survey also collected information on select tobacco policy measures, such as noticing information in the newspapers, and on television and radio, about the danger of smoking that encouraged quitting. In total, nearly a quarter (22.3%) noticed such information in newspapers, and nearly one thirds of them reported seeing this on television (32.4%) and on radio (32.9%) (Figure 4.9).

Figure 4.9: Percentage of respondents who noticed information during the past 30 days in the media about the dangers of smoking that encourages quitting
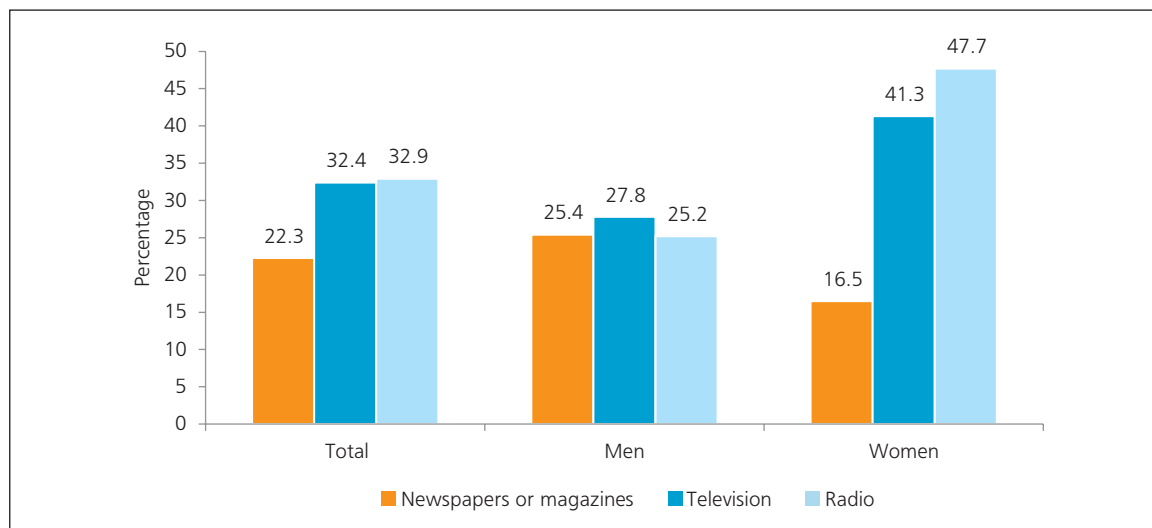
Among current smokers, 35.7% of both genders noticed health warnings on cigarette packages, and nearly 18.6% saw and thought of quitting as a result of those warnings (Figure 4.10).

Figure 4.10: Percentage of current smokers who noticed health warnings on cigarette packages and who noticed and thought of quitting
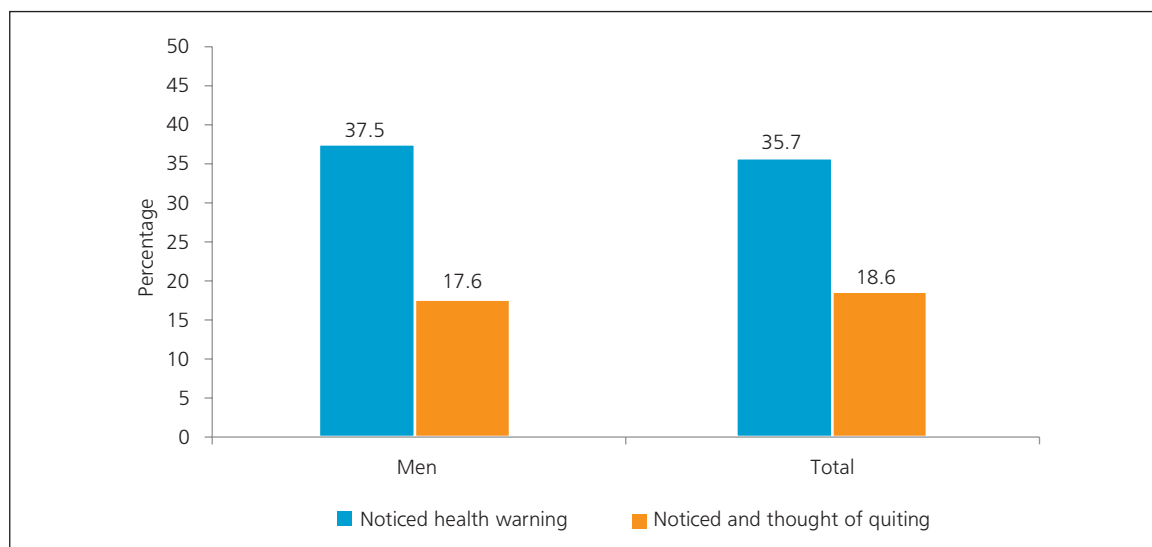
On the other hand, Table 4.8 shows more than a quarter respondents seeing advertisements in stores that promoted cigarettes, and interestingly nearly one third of respondents (29.0%) received free samples of cigarettes. People were also exposed to other forms of indirect tobacco advertisements (Figure 4.11).

Figure 4.11: Percentage of respondents who noticed cigarette promotions during the past 30 days
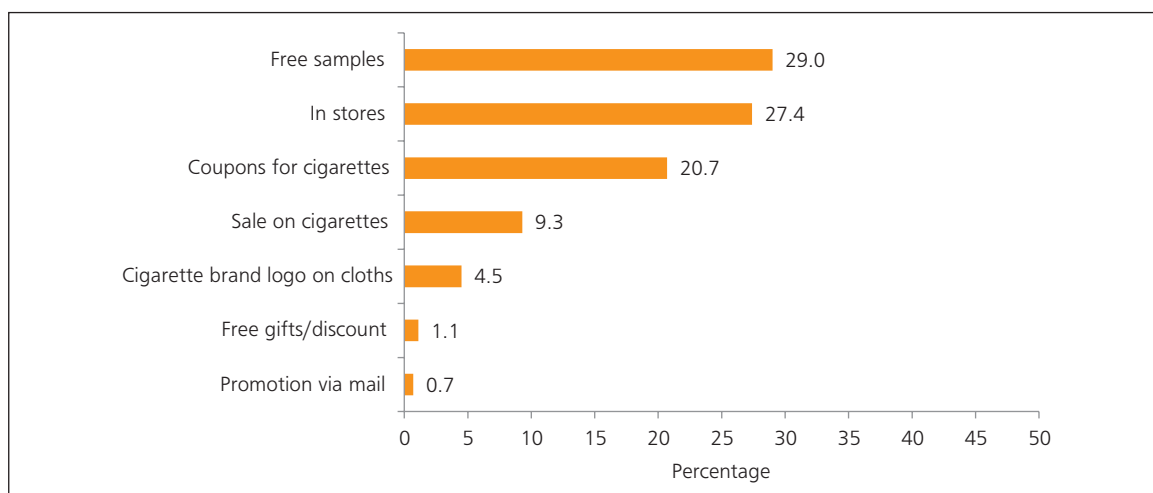
The mean average price paid for 20 manufactured cigarettes was US$ 4.7. Men spent on an average US$ 4.8, while women spent US$ 2.8 for manufactured cigarettes. The younger age group spent more than the older age groups in both sexes (Annex 1, Table 4.30).

5. Alcohol consumption

Respondents were asked whether they had ever consumed alcohol or not. If they had never consumed alcohol, they were classified as lifetime abstainer. If they had ever drunk alcohol, they were then asked about the frequency and the quantity of alcohol they consumed. Respondents who consumed alcohol in the past 30 days were classified as current drinkers.

Alcohol users

Figure 5.1 shows the alcohol consumption status. Among the respondents, 28.6% were current drinkers (drank alcohol in the past 30 days). Current drinking was almost exclusively occurring among males (42.8% males and 2.0% females). Considering the drinking history, 8.2% who drank alcohol in the past 12 months were not current drinkers. Among respondents, 57.7% were lifetime abstainers and 5.5% abstained in the past 12 months. The majority of lifetime abstainers were females (92.1%).

Figure 5.1: Percentage of alcohol consumption status for man, women and both sexes
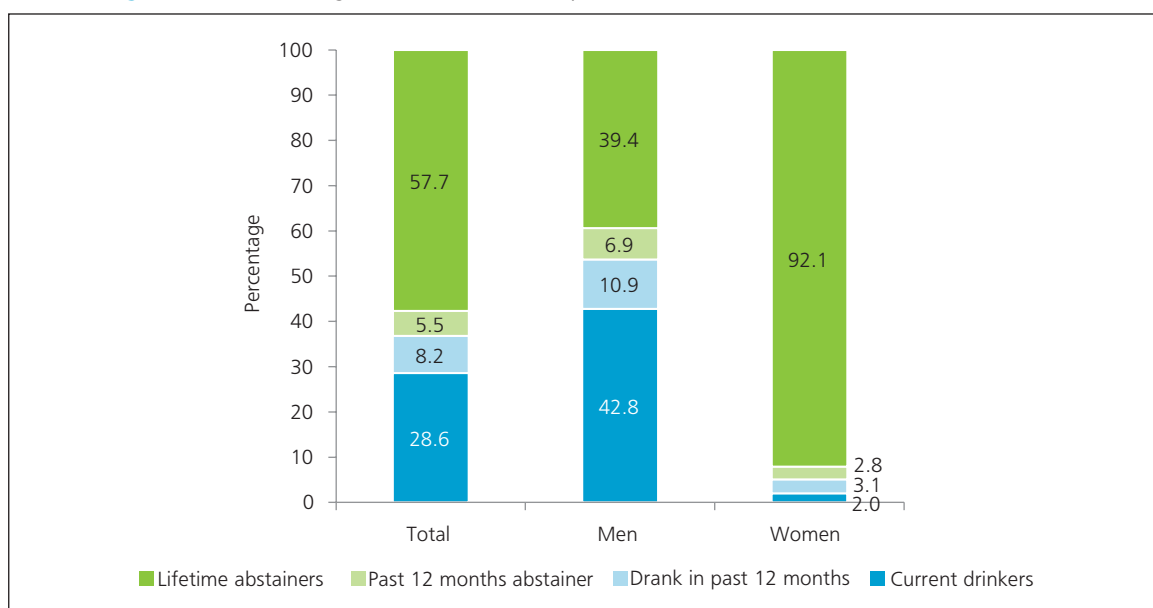
Frequency of alcohol consumption

Figure 5.2 shows the frequency of alcohol consumption in men and women in the past 12 months. Four out of five (83%) women consumed 1-3 drinks or less per month, the rest (17%) were weekly or daily drinkers, Among men, three out of five (62.6%) were weekly or daily drinkers and the rest (two out of five (37.4%)) drank 1-3 drinks or less per month..

Among men, the highest proportion was 26.1% for those who drank alcohol 3-4 days/week, followed by 21.4% who drank 5–6 days/per week, 19.3% drank less than once a month drank, and the lowest percentage were the daily consumers with 0.2%. Whereas for women, almost

half (50.6%) drank alcohol less than once a month, those having alcohol 1–3 days/month and 1–2 days/week were ranked second (32.4%) and third place (15.9%) respectively. (Figure 5.2)

In both sexes, around a quarter (24.9%) respondents drank 3-4 days per week, those who drank alcohol less than one a month had a proportion of 20.8% and those drinking alcohol 5-6 days per week with 20.4%, the lowest being who drank alcohol daily (0.2%) (Figure 5.2).

Figure 5.2: Frequency of alcohol consumption in the past 12 months
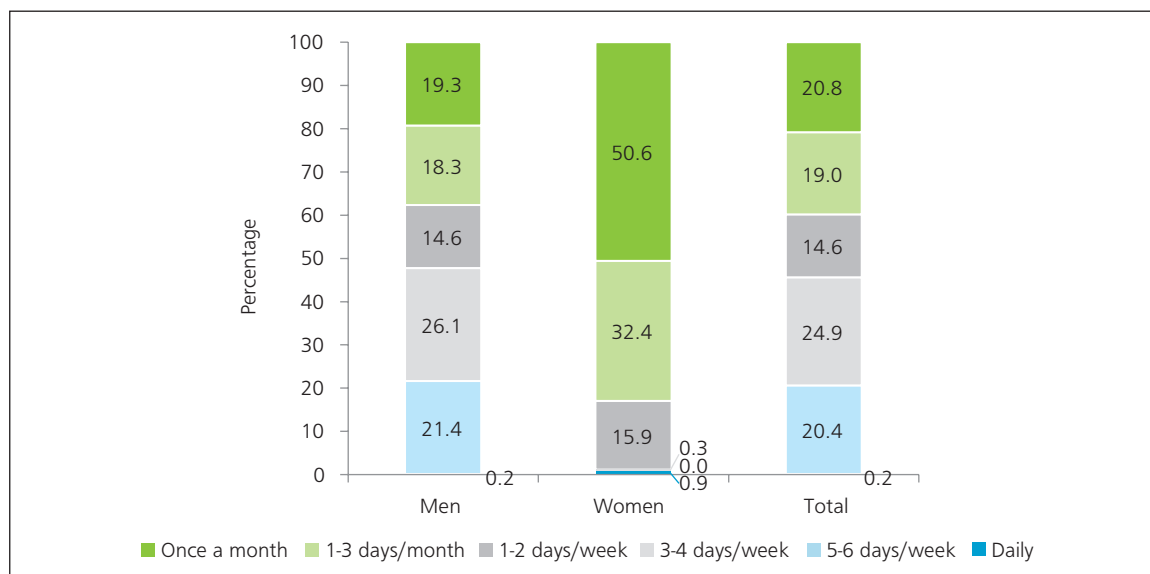
Drinking alcohol on 1-2 days in the past seven days reported 39.5% of current drinkers, followed by 5–6 days/week with 22.3% of the respondents. Nearly one out of five (20.1%) current drinkers reported that they consumed alcohol on daily basis (Figure 5.3). Daily drinking was common among men (20.4%). Most of the women either didn't consume alcohol in the last seven days (11.0%) or had drinks 1–2 days in a week (67.6%) (Figure 5.3).

Figure 5.3: Frequency of alcohol consumption in the past seven days among current drinkers
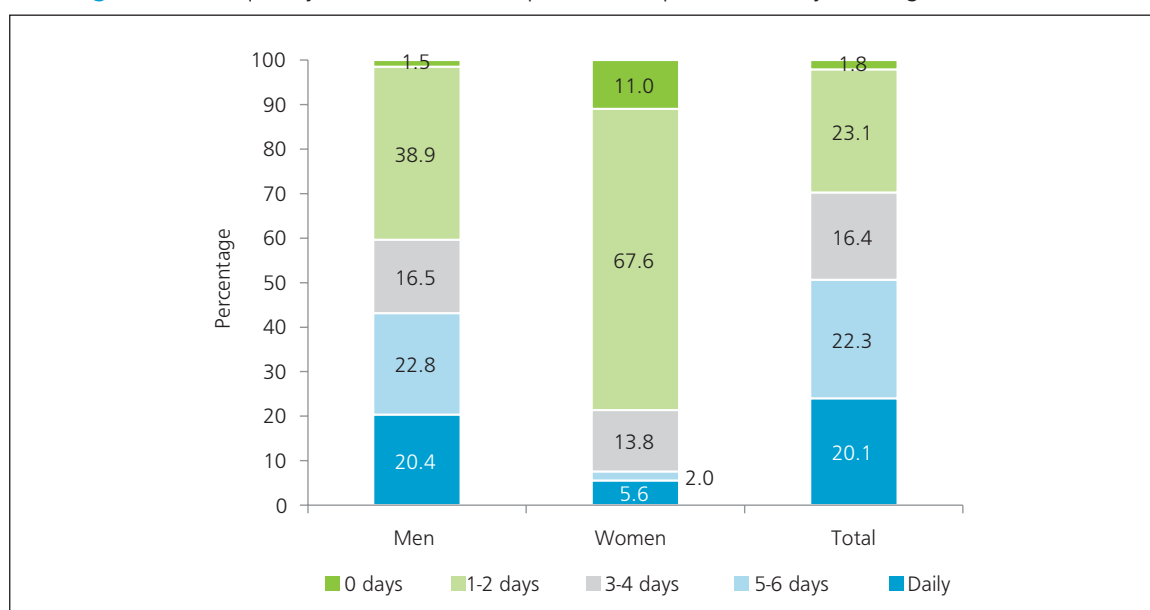
Drinking pattern

Figure 5.4 shows the percentage for high-end, intermediate and lower-end level drinking among current drinkers (drinking alcohol in the past 30 days) in males, females and both sexes (see definition in figure 5.4). As compared to women (1.2%), more men (25.1%) drank at high-end. Nearly three fourth of men (72.8%) and most of the women (91.1%) drank at the lower-end.

Figure 5.4: Proportion of drinkers by amount and sex among current (past 30 days) drinkers
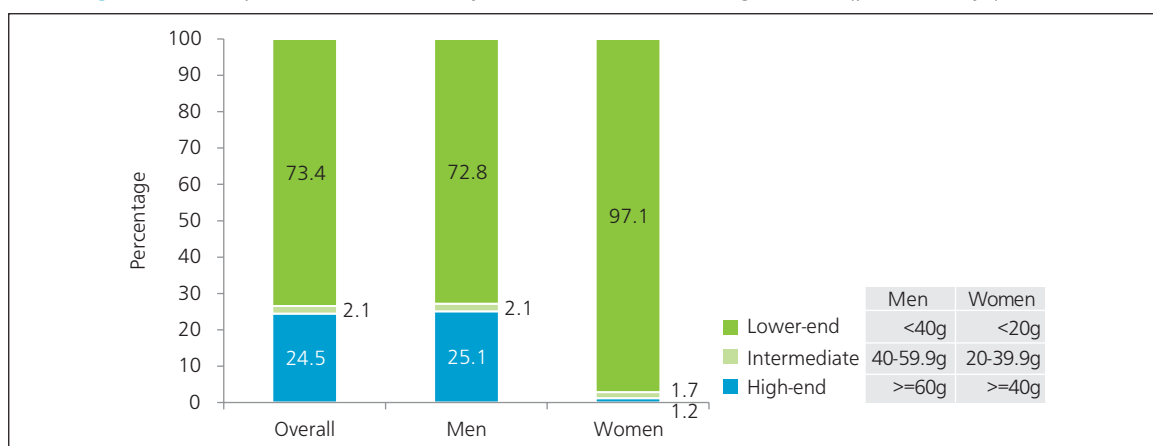
Drinking alcohol on high-end level is more common in men than in women as shown in figure 5.5.

Figure 5.5: Drinking level among all respondents on average per occasion
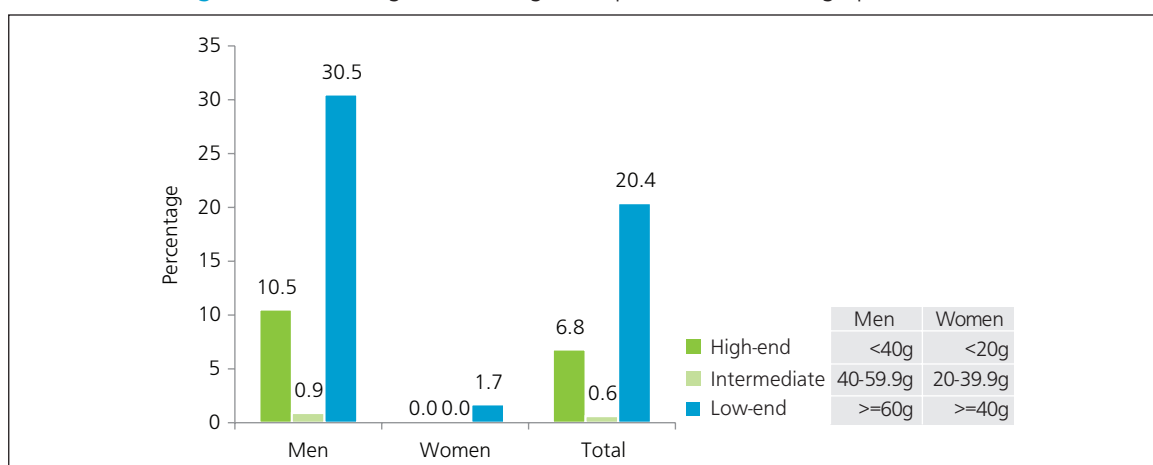
Consumption of unrecorded alcohol

On an average 60.7% of adults reported that they had consumed unrecorded alcohol; for males it was two times higher (61.4%) than for females (33.5%). For both sexes, younger age group seemed to consume more unrecorded alcohol as opposed to older age group (Figure 5.6).

Figure 5.6: Percentage of consumption of unrecorded alcohol
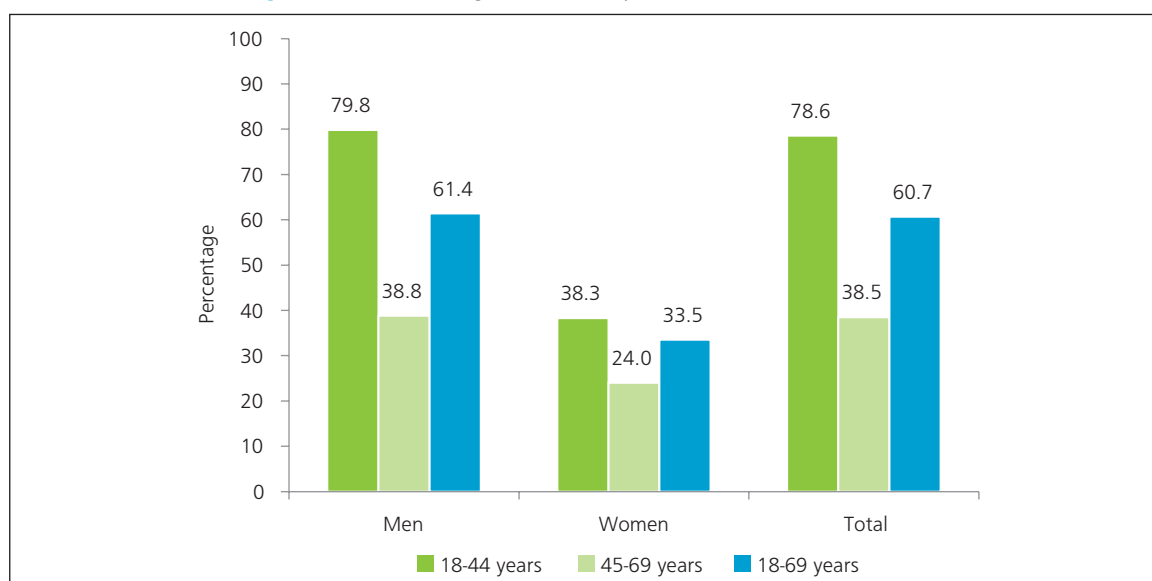
The mean number of standard drinks on average per day in the past seven days among current drinkers was much higher in men (1.4 mean standard drinks) in comparison to women (0.4 mean standard drinks). The mean number of standard drinks of unrecorded alcohol consumption on average per day in the past seven days among current drinkers, was 0.5for both sexes. This was slightly higher in men than in women (Figure 5.7).

Figure 5.7: Mean number of standard drinks and standard drinks of unrecorded alcohol on average per day in the past seven days among current drinkers
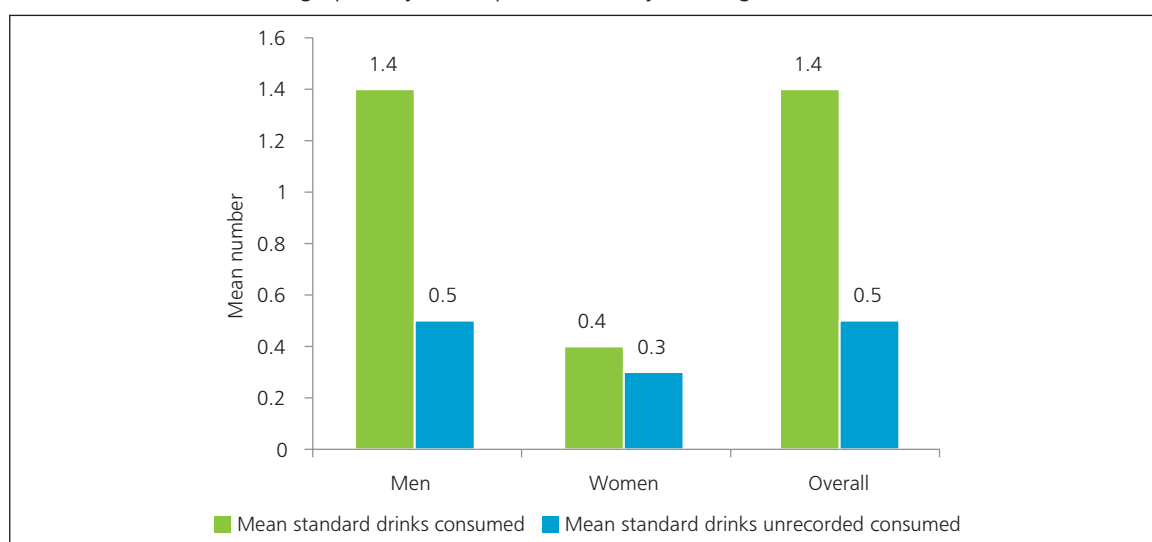
Among unrecorded alcohol consumption, mostly home-brewed spirits (78.0%) or home-brewed beer/wine (21.0%) is consumed (Figure 5.8).
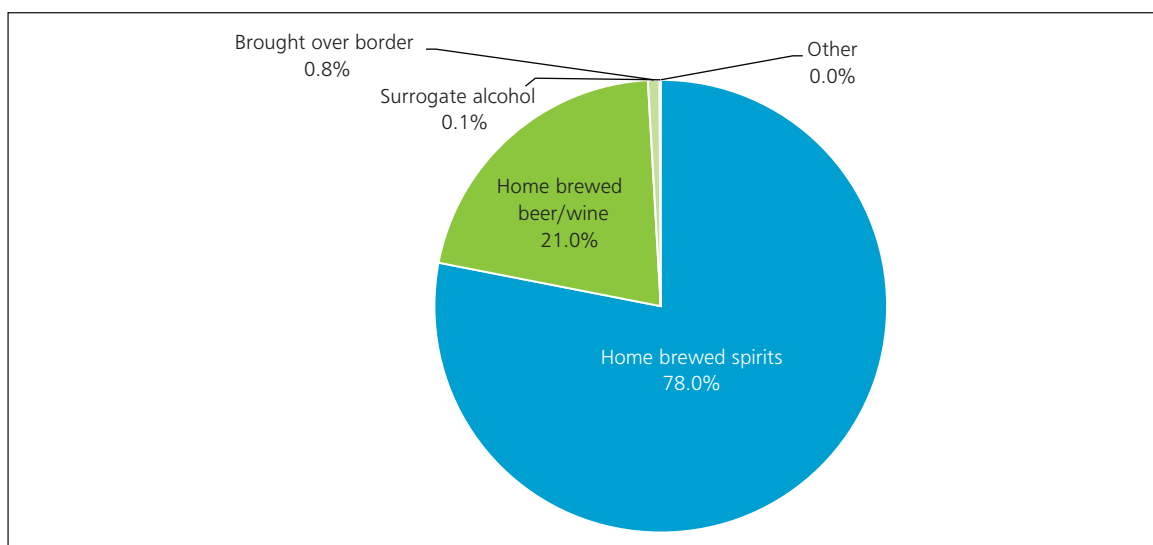
Drinking occasions and drinks per occasion

The mean number of drinking occasions in the past 30 days for men was almost two times higher (4.3) compared to women (2.2). Men in the older age group had a slightly higher mean number of drinking occasions than men in the the younger age group; however, in women, there is no difference in the mean number between the age groups. The mean number of drinking occasion in both sexes is 4.2, older age group had mean higher than in younger age group (Annex 1, Table 5.10).

Overall, both genders had a mean number of 15.1 standard drinks per drinking occasion among current drinkers in the past 30 days . A separate analysis for both genders showed that men had a five time higher mean number of standard drinks per drinking occasion among current drinkers (15.4)than women (3.1). (Annex 1, Table 5.11).

On an average current drinkers consumed 4.7 standard drinks (men 4.8, women 3.6) on a single occasion (Annex 1, Table 5.12). Higher age groups in all categories showed a little higher percentage than in younger age groups (Figure 5.9)

Figure 5.9: Mean maximum number of standard drinks consumed on one occasion in the past 30 days
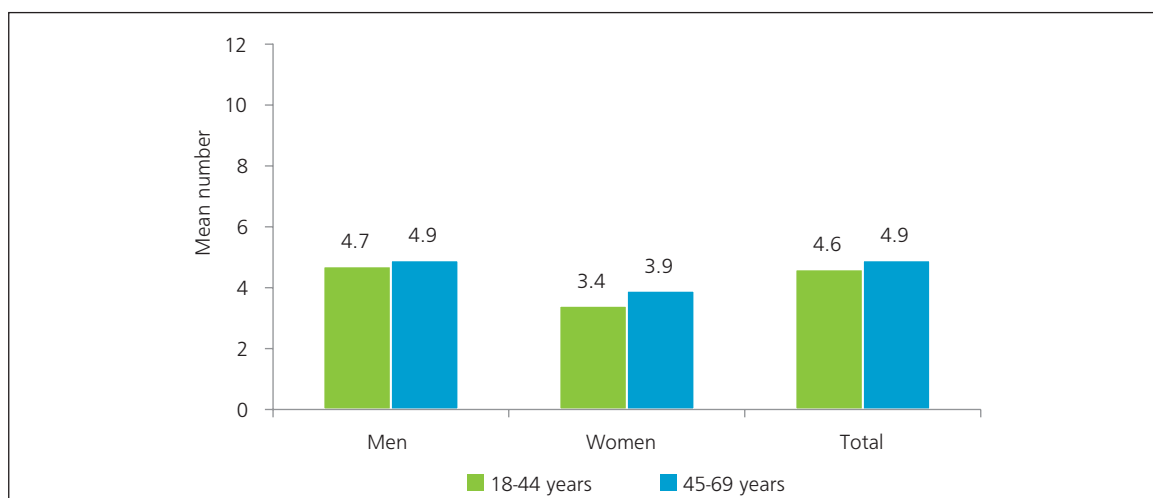
Six or more drinks on a single occasion are predominantly a male phenomenon in all age groups and especially in older age groups. Among all respondents, 14.5% consumed six or more drinks on a single occasion during the past 30 days. One in five men (21.8%) took six or more drinks at single occasion while this was minimal for women (1.0%) (Figure 5.10).

Figure 5.10: Percentage of adults consuming six or more drinks on a single occasion at least once during the past 30 days, by sex and age groups
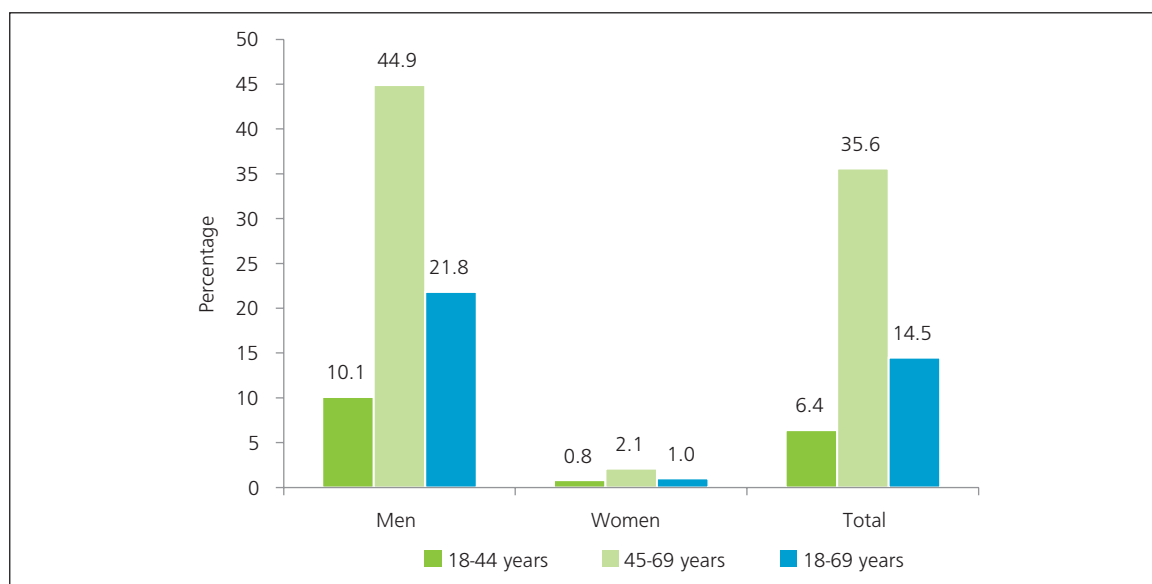
High mean number of times with six or more drinks on a single occasion is predominantly a male phenomenon especially marked in older age groups (Figure 5.11)

Figure 5.11: Mean number of times with six or more drinks during a single occasion in the past 30 days among current drinkers
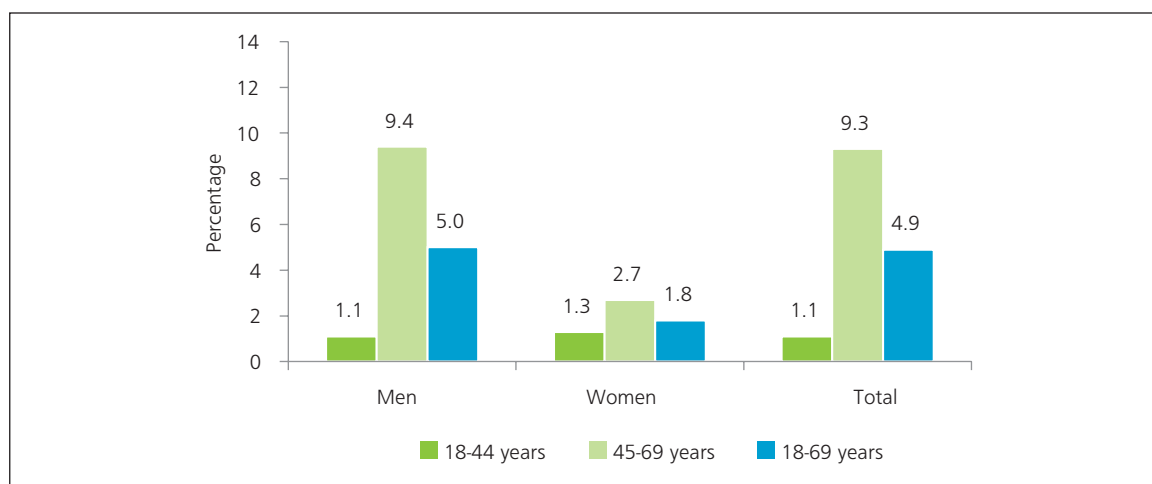
Stopped alcohol due to health reasons

The survey found that 20.7% of both genders stopped drinking alcohol due to health reasons women having a much higher percentage of drinking cessation due to health reasons (31.5%)

compared to men (18.3%). In men, predominantly the younger age group and among women, predominantly the older age group stopped drinking alcohol due to health reasons (Figure 5.12).

Figure 5.12: Percentage of former drinkers (those who did not drink during the past 12 months) who stopped drinking due to health reasons
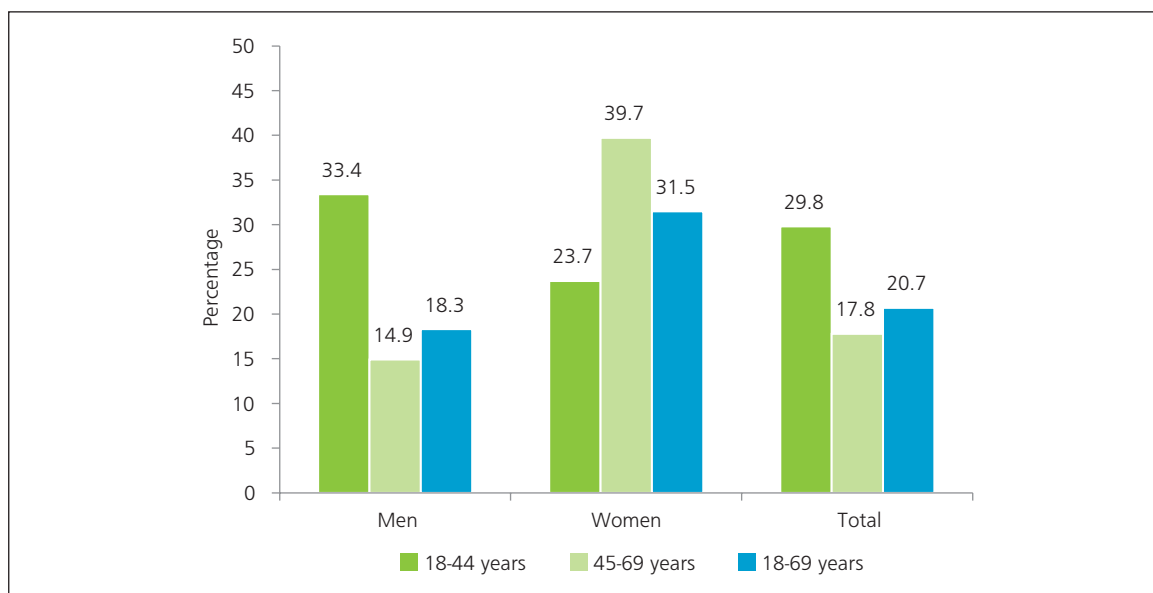
6. Dietary habits

Fruits and vegetable consumption

The fruit and vegetable consumption patterns of the study population were assessed by asking about the frequency and quantity of fruit and vegetables consumed. In a typical week, the study population ate fruits on 2.3 days per week (men on 2.2 days, women on 2.6 days). The findings show that fruit consumption is low among the study population. Vegetable consumption was a bit higher, with respondents consuming vegetables on 6.7 days on average in a typical week, with the same average for men and women (Annex 1, Table 6.1).

The average daily fruit intake was also low in both men (1.0 serving per day) and women (0.9 servings per day). The average daily vegetable intake was better than the fruit intake in both sexes, men had 6.3 servings per day and women 2.8 servings per day, with an overall average of 5 servings of vegetables per day for both sexes. When fruit and vegetable consumption was combined, the average consumption was 5.4 servings of fruit and/or vegetables on a typical day (Figure 6.1).

Figure 6.1 Mean numbers of fruit, vegetables and combined fruit and/or vegetable servings on average per day
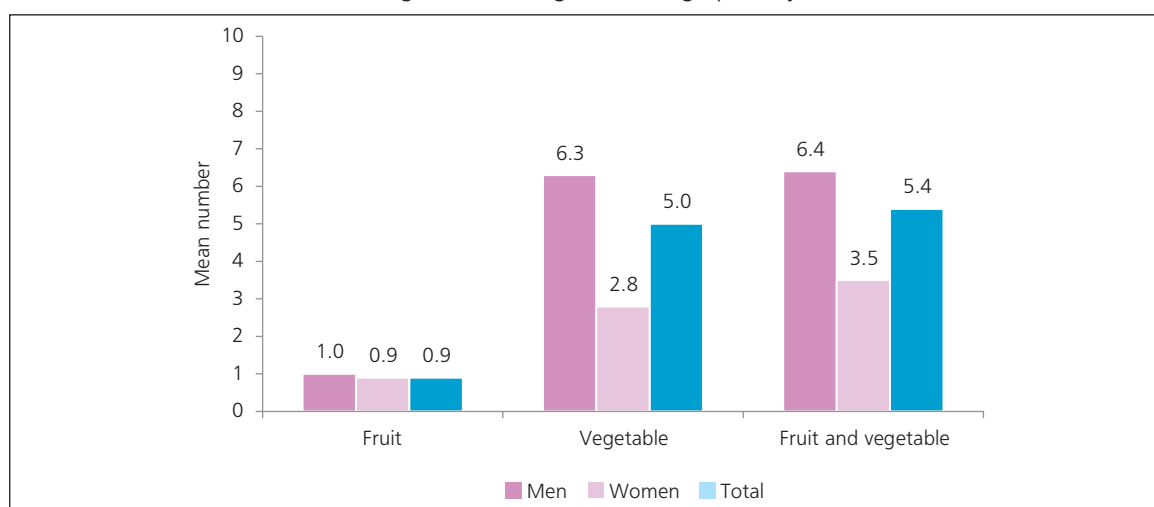
One fifth (22.5%) of the survey population consumed the recommended five or more servings of fruit and vegetables per day while one third of the study population (3 5%) consumed 3–4 servings. The majority of respondents consumed 1–2 servings of fruit and vegetables (39%); this proportion was slightly higher for men (40.1%) than for women (37%). (Figure 6.2)

Figure 6.2 Number of servings of fruit and/or vegetables on average per day
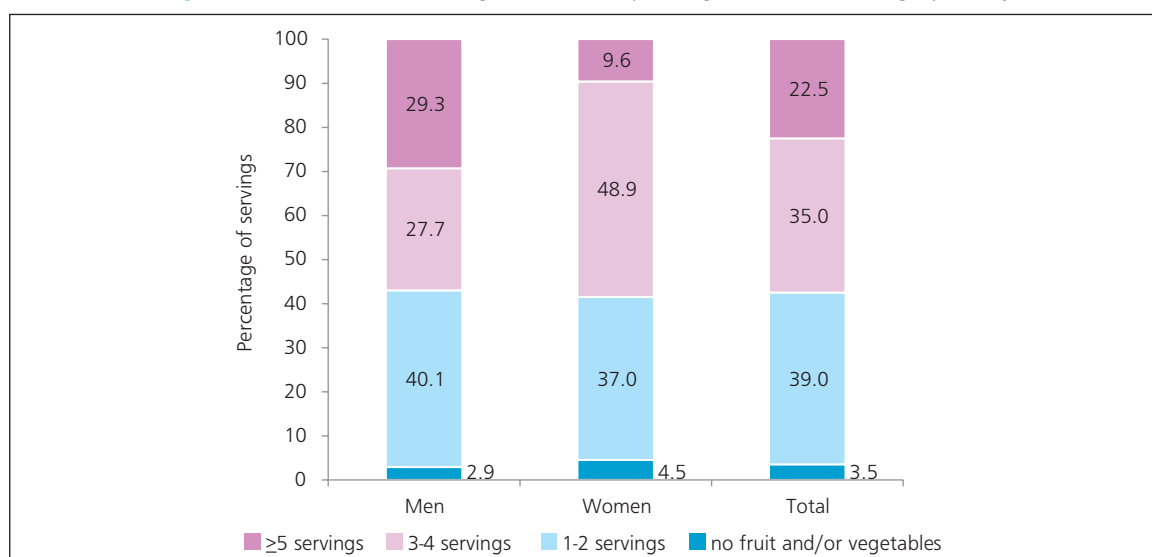
The survey found that 77.5% did not consume the recommended daily amount of fruits and/or vegetables (<five servings), this was higher among women (90.4%) than men (70.7%) (Figure 6.3). Adequate fruit and vegetable consumption reduces the risk of noncommunicable disease; however, the survey showed that most of the population consumed an inadequate quantity of fruit and vegetables (less than the recommended five servings a day, Figure 6.3).

Figure 6.3 Percentage of respondents consuming less than five servings of fruit and/or vegetables on average per day
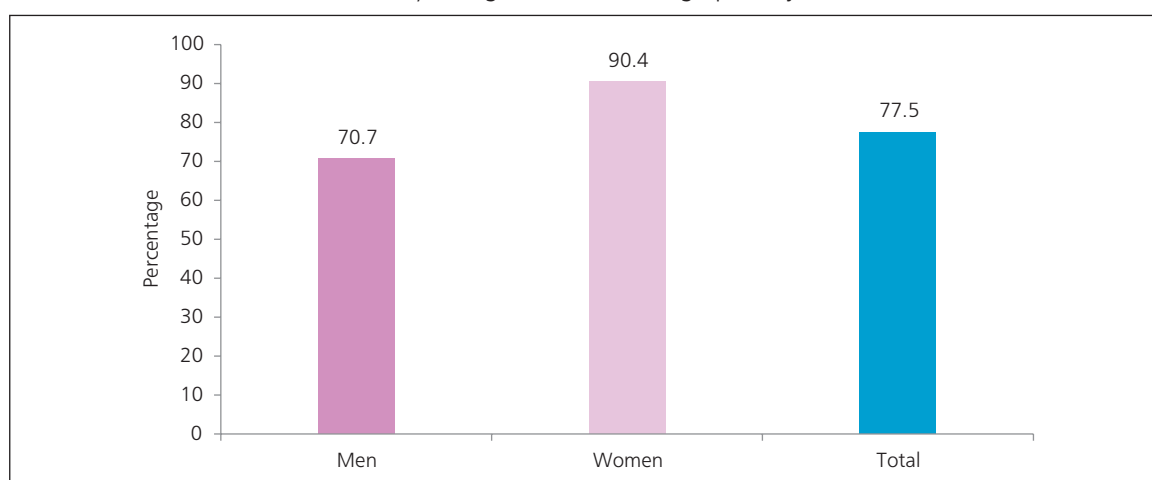
7. Dietary salt

The knowledge, attitudes and behaviour of the study population towards dietary salt were assessed using structured questions.

Salt intake

Three fourth of respondents (overall 78.0%, men 74.7%, women 84.1%) always, or often, added salt to their food right before eating or while eating. Nearly seven out of ten respondents (68.6%) added salt either always, or often, during cooking or while preparing food at home. This proportion was almost equal in all age groups and for both sexes. Similarly, 12.9% of all respondents reported that they often or always consumed processed food containing high amounts of salt. This proportion was higher among men (15.8%) than women (7.3%) and highest among the younger age groups (18–44 years) (Figure 7.1).

Figure 7.1: Salt consumption habits
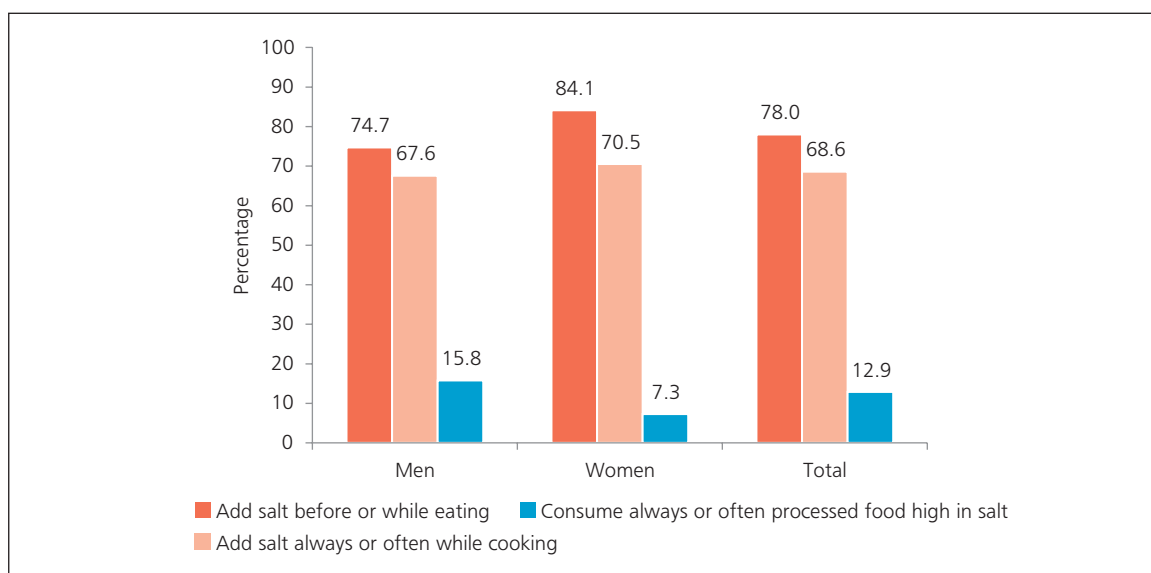
When asked about their dietary salt consumption, 16.1% of both sexes reported that they thought they were consuming too much salt (19.3% men versus 10.4% women). Men in the younger age group thought that they consume too much salt compared to men in the older age group (25.8% versus 5.4%). On the other hand, more older women thought that they consume too much salt compared to women in the younger age group (18.7% versus 8.7%) (Annex 1, Table 7.2).

The self-reported quantity of salt consumed in relative measures was also assessed. Nearly seven in one (69.1%) respondents thought that they were using just the right amount of salt. Almost 15% of respondents thought that they were using too much salt (16.1%) or too little salt (14.7%). Responses from men and women were a bit different, as shown in figure 7.2.

Figure 7.2: Self-reported quantity of consumed salt
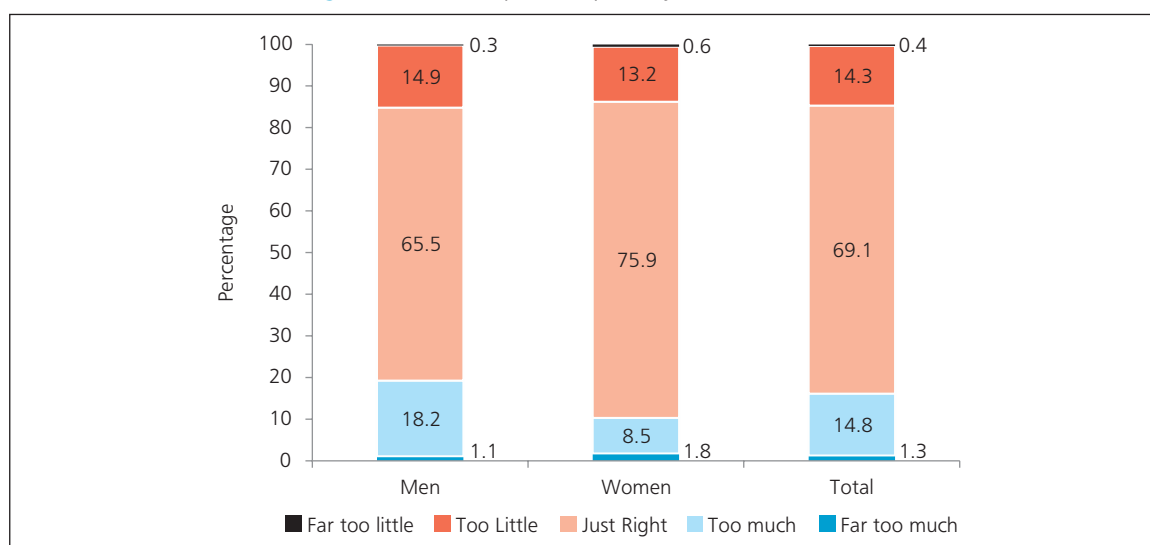
Awareness on lowering salt intake

Nearly half (48.1%)of the respondents (men 45.6%, women 52.5%) thought that lowering salt in their diet would be very important. About one fifth of the respondents (21.3%) thought it would be somewhat important. This proportion was higher among women (26.4%) than among men (18.3%). Around 30.6% (men 36.2%, women 21.2%) thought lowering salt intake would be not at all important. This proportion was highest among 18–44 year olds with 41.3% in total (men 53.7%, women 24.5%) (Figure 7.3 & Annex 1, Table 7.4).

Figure 7.3: Percentage of respondents who agree with the importance of lowering salt in diet
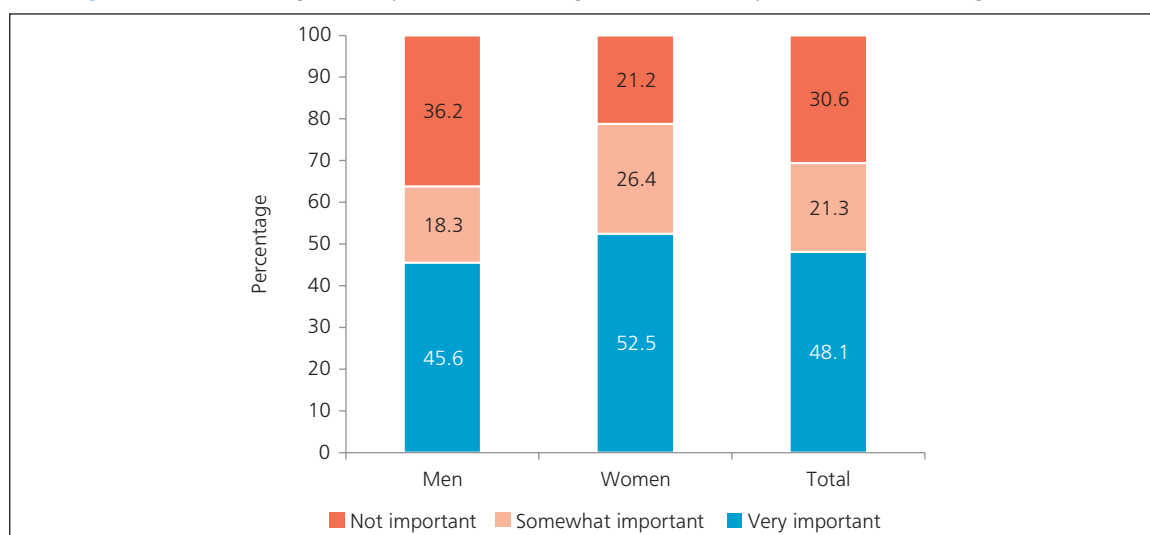
Nearly one-fourth of all respondents (23.7%) thought that consuming too much salt could cause serious health problems. This proportion was higher in women (32.8%) than in men (18.9%) (Annex 1, Table 7.5).

Actions to reduce salt intake

The survey also assessed the various or actions which were used by respondents regularly to control their salt intake . Among all respondents, limiting processed food (18.9%), use of alternative spices (12.1%) and looking at the salt content of food items (10.8%) were the most prevalent actions taken to reduce their salt intake. (Figure 7.4).

Figure 7.4: Percentages of respondents who take specific action on a regular basis to control salt intake
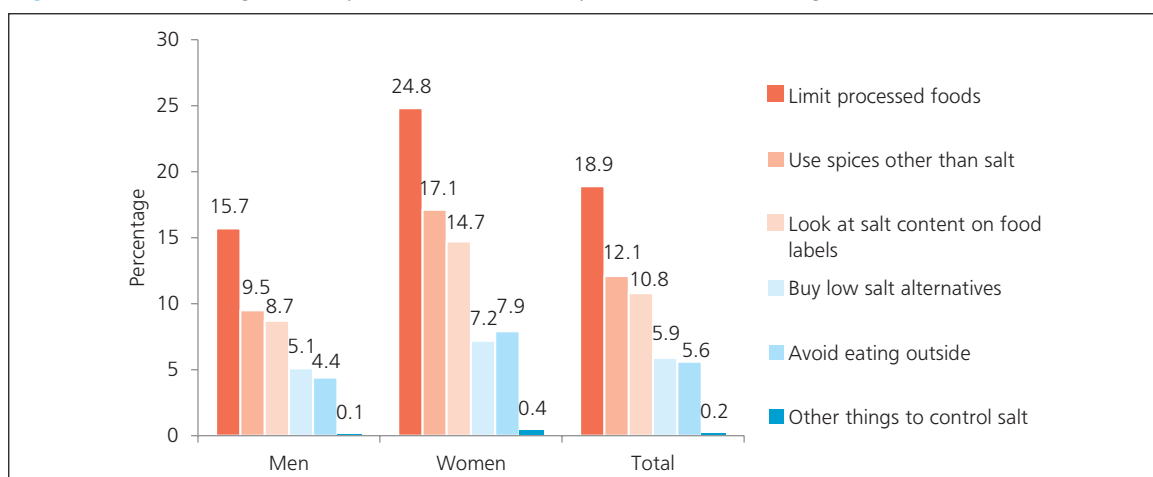
Type of oil used

Oil or fat consumption was assessed by asking about the oil or fat most often used for meal preparation in the household. The study found that most (93.4%) of respondents most often used vegetable oil for meal preparation (Figure 7.5).

Figure 7.5: Type of oil or fat most often used for meal preparation in household
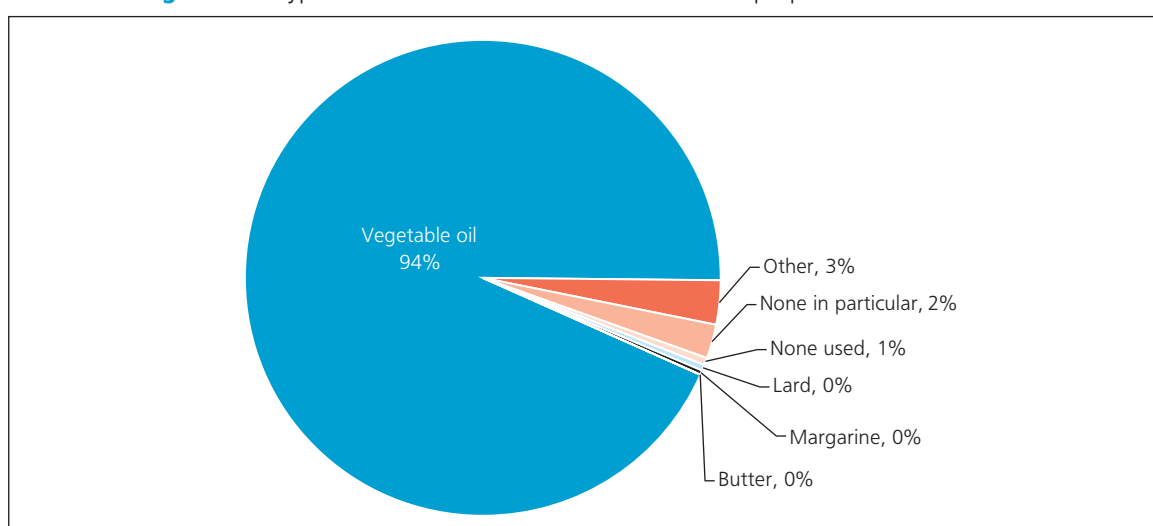
Eating outside home

Adults in Timor-Leste consume less than one meal per week which is not prepared at a home (men: 0.3 meals/week, women: 0.7 meals/week) (Annex 1, Table 7.8).

8. Physical inactivity

Physical activity of the survey population was assessed by assessing the intensity and duration of activities undertaken during work, travel and recreation.

Not meeting WHO recommendations of physical activity

The WHO recommendations on physical activity for health are ≥150 minutes of moderate-intensity physical activity per week, 75 minutes of vigorous physical activity per week, or an equivalent combination of the two. It was found that 16.7% (men 12.8%, women 23.3%) of all respondents did not meet the WHO recommendations. In general, more adults in the younger age group did not meet the recommended physical activity level in comparison to the older age group (19.8% versus 9.7%); and more females did not achieve the recommended level of physical activity as compared to males (23.3% versus 12.8%) (Figure 8.1).

Figure 8.1: Percentage not meeting WHO recommendations for physical activity for health
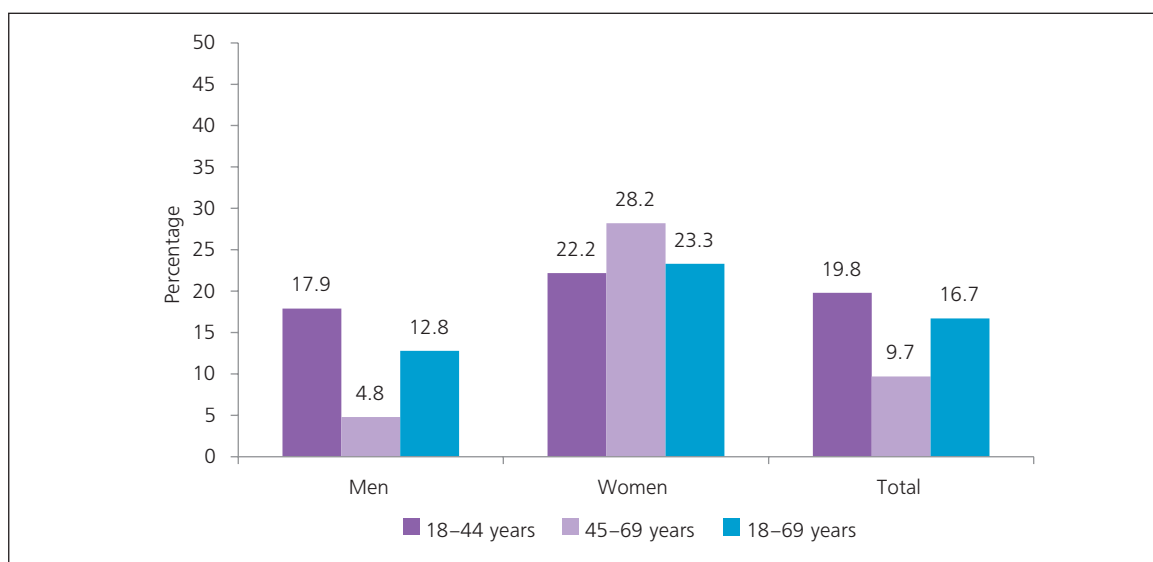
Physical activity by domain (work/household, transport, leisure time)

Figure 8.2 shows that 11.5% of the population did NOT engage in any work-related physical activity, while 55.5% did not do any physical activity for transport, and 84.1% did not do any recreational physical activity. In particular among women, physical activity during leisure/recreation time was extremely rare with 95.0% not doing any of this type of physical activity.

Figure 8.2: Percentage of respondents not doing any work-, transport-, or recreation-related physical activity
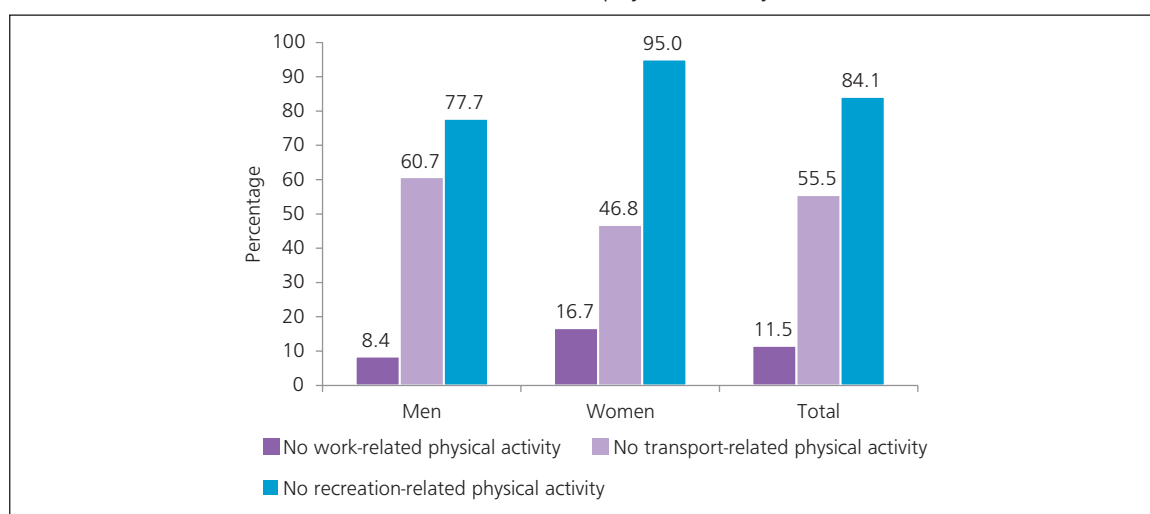
Contribution of domain-specific physical activity to total physical activity

When looking at the total physical activity of the entire population, the current data reveal that work-related activity has by far the largest contribution:

The proportion of work-related to total activity was 83.1% (men 86.2%, women 77.7%), followed by 12.9% (men 9.2%, women 19.6%) for transport-related activity. Leisure time activity was very rare, and only contributed to the overall activity with 4.0% (men 4.7%, women 2.7) for recreational-related activity (Figure 8.3).

Figure 8.3: Contribution of work-, transport- and recreation-related physical activity to total activity
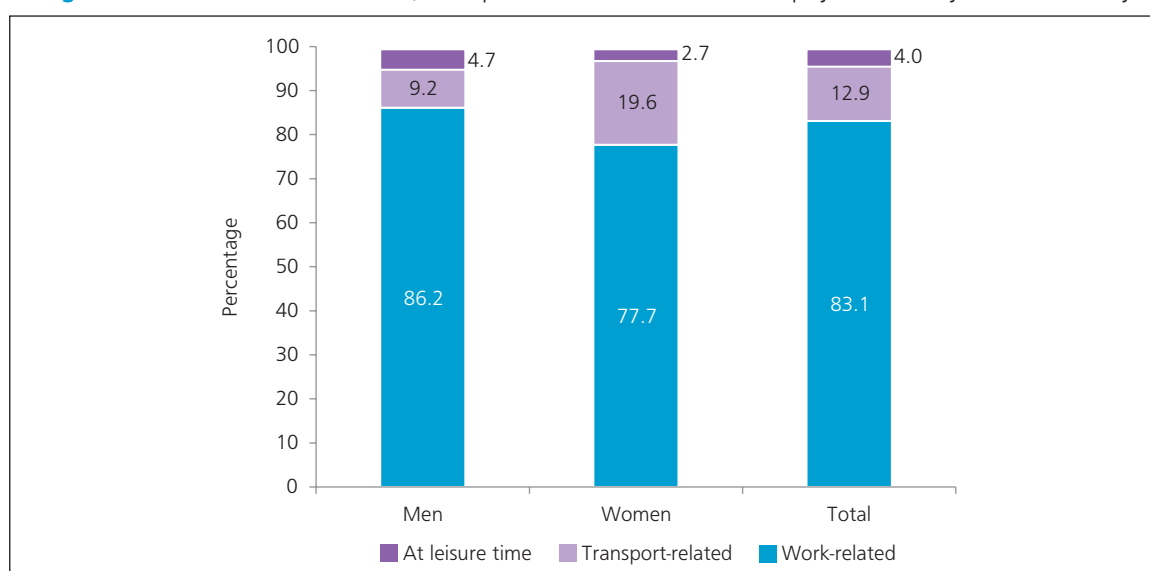
Engagement in vigorous physical activity

More than half (52.4%) of all the respondents did not engage in any vigorous physical activity; among women, it was twice as high (73.3%) as compared with men (39.9%). This proportion was higher among men in the older age groups compared to the younger group in the study population (Figure 8.4).

Figure 8.4: Percentage of respondents not engaging in vigorous physical activity
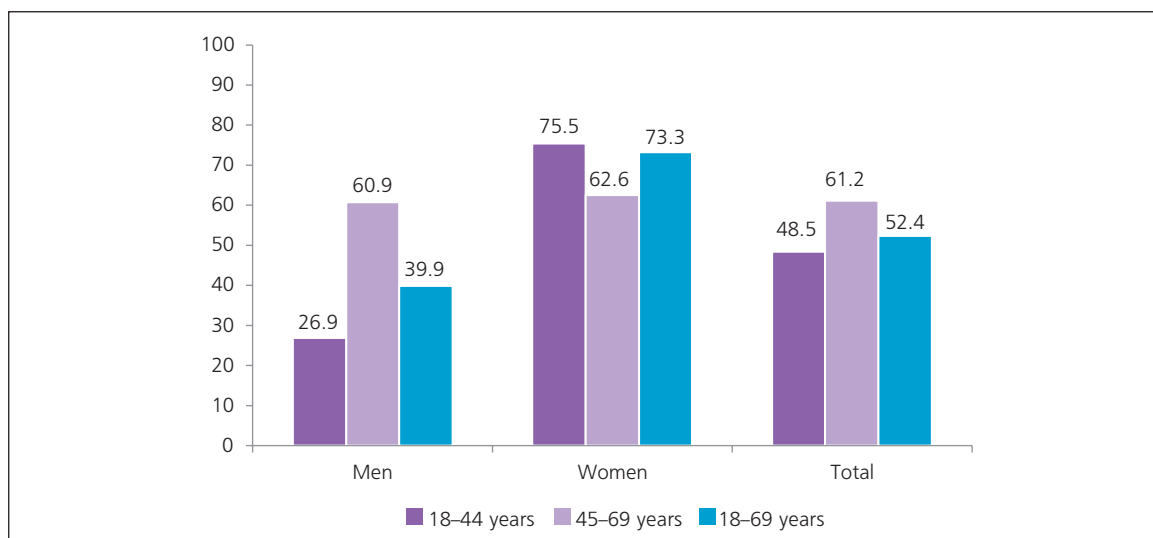
Time spent on physical activity by domain

As shown in Figure 8.5, work-related physical activities were more common than other activities. The mean time spent on work-related physical activity was 114.5 minutes; among women, it was almost half than that of men (men 140.1 minutes, women 71.3 minutes). The mean time spent on transport-related activity was 11.3 minutes followed by recreation-related activities with 4.9 minutes.

Figure 8.5: Mean minutes spent on domain-specific physical activity on average per day
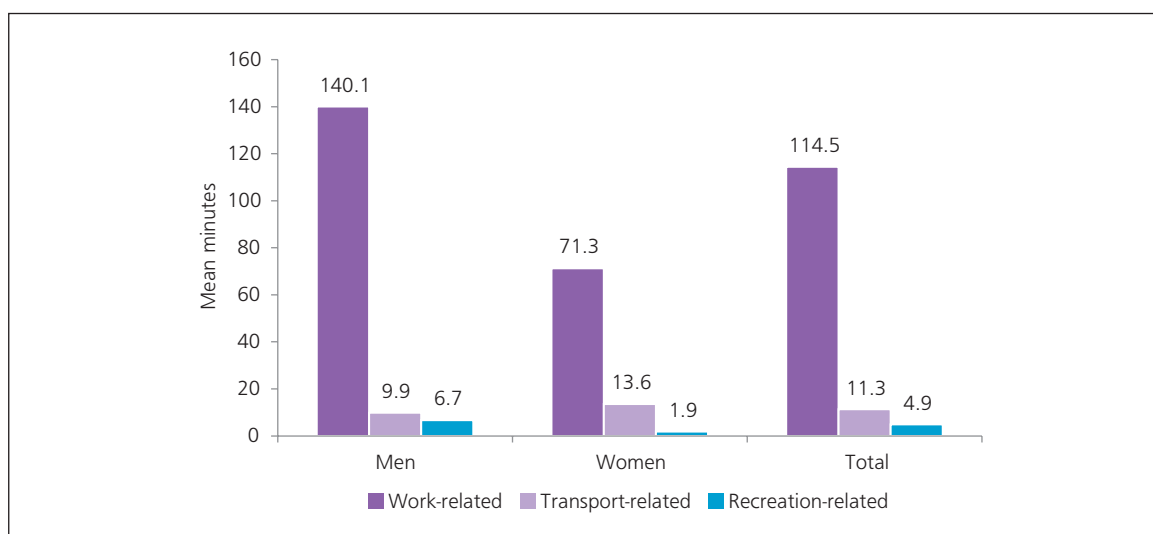
Time spent sitting

The median time spent in sedentary activities was found to be 62 minutes for all respondents, whereas it was double in men (120 minutes) than in women (60 minutes). However the mean minutes for all respondents (men, women or total) was around 100 minutes (Figure 8.6).

Figure 8.6: Mean and median minutes spent in sedentary activity on a typical day

National survey for noncommunicable disease risk factors and injuries using WHO STEPS approach in Timor-Leste – 2014
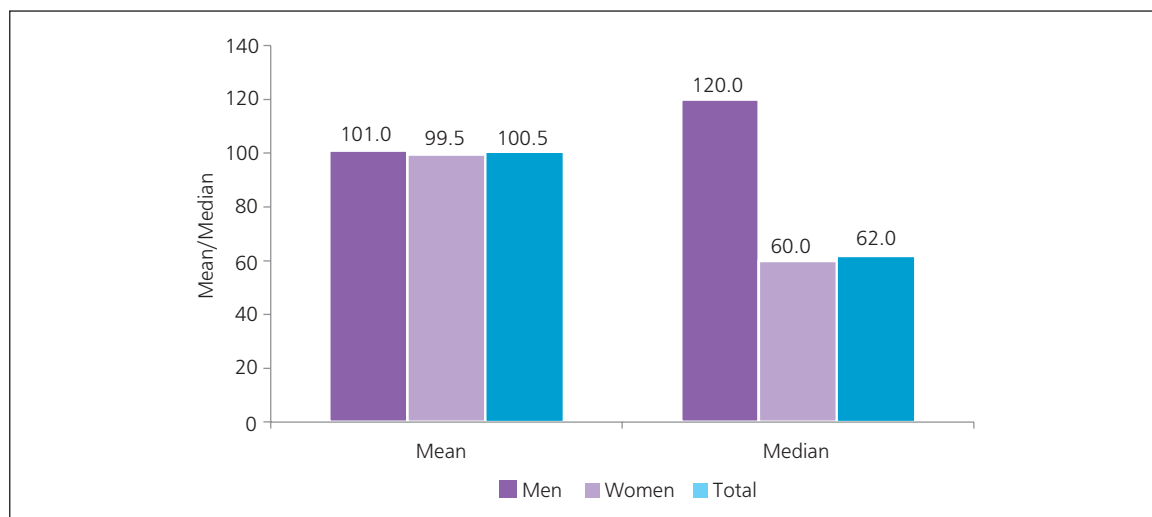
9. Overweight and obesity

Body mass index

The mean height for men was 158.7 cm, generally men were taller than women (152.9 cm). Across both genders, younger age groups were generally taller than older age groups (Annex 1, Table 9.1).

The mean weight for men and women were 53.7 kg and 49.1 kg respectively. In men, the older age group was slightly heavier than the younger age group, but for women, the younger age group was slightly heavier than the older age group (Annex 1, Table 9.2).

The mean body mass index (BMI) for both sexes was 21.2 kg/m2. It was almost similar for men and women and across all age groups (Annex 1, Table 9.3).

Around one-fifth of all respondents (18.5%) were found to be underweight (BMI <18.5). This proportion was higher in women (31.3%) compared to men (11.2%). Around two thirds (70.3%) of all respondents had BMI in the normal range (BMI 18.5-24.9). This proportion was lower in women (52%) than in men (80.6%). The prevalence of being overweight (BMI 25.0-29.9) among all respondents was 10.3% (men 7.5%, women 15.4%), while the prevalence of obesity (BMI ≥30.0) was 0.9% overall (men 0.7%, women 1.3%). (Figure 9.1)

Figure 9.1: Percentage of respondents (excluding pregnant women): body mass index (BMI) classifications among adults
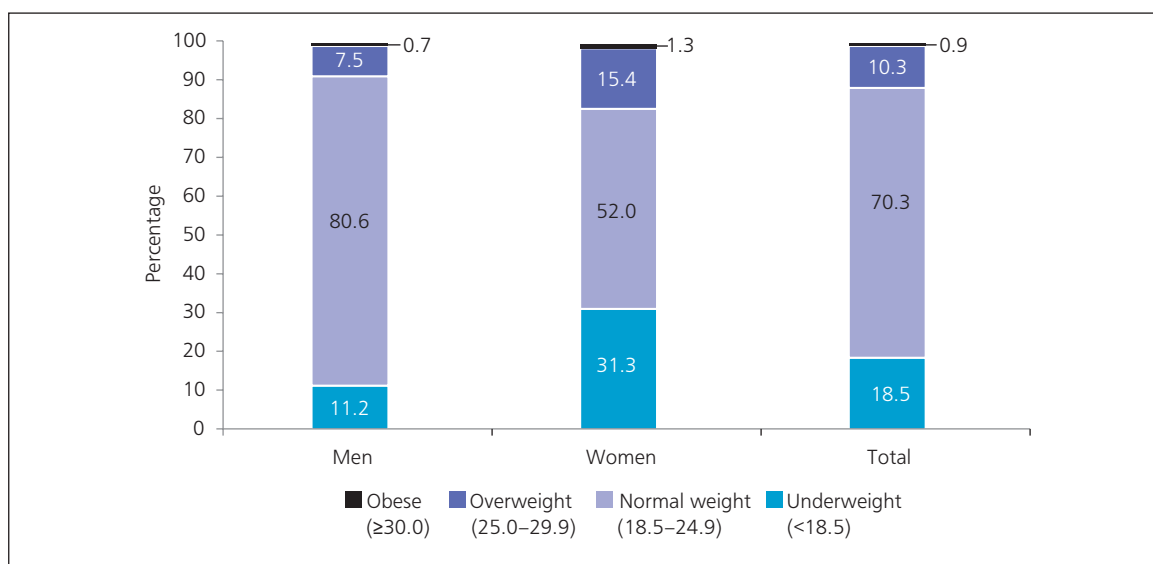
Waist–hip ratio

Waist and hip circumference were also measured in the survey to determine truncal obesity. The mean waist circumference for men was 71.3 cm and for women 77.4 cm. In regard to hip circumference, women had a higher mean hip circumference than men (83.7 cm for women

versus 76.5 cm for men). Older age groups in both sexes generally had a higher hip circumference in comparison to the younger age groups of both sexes (Figure 9.2 & Annex 1, Table 9.6)

Figure 9.2: Mean waist and hip circumference in centimeters by sex
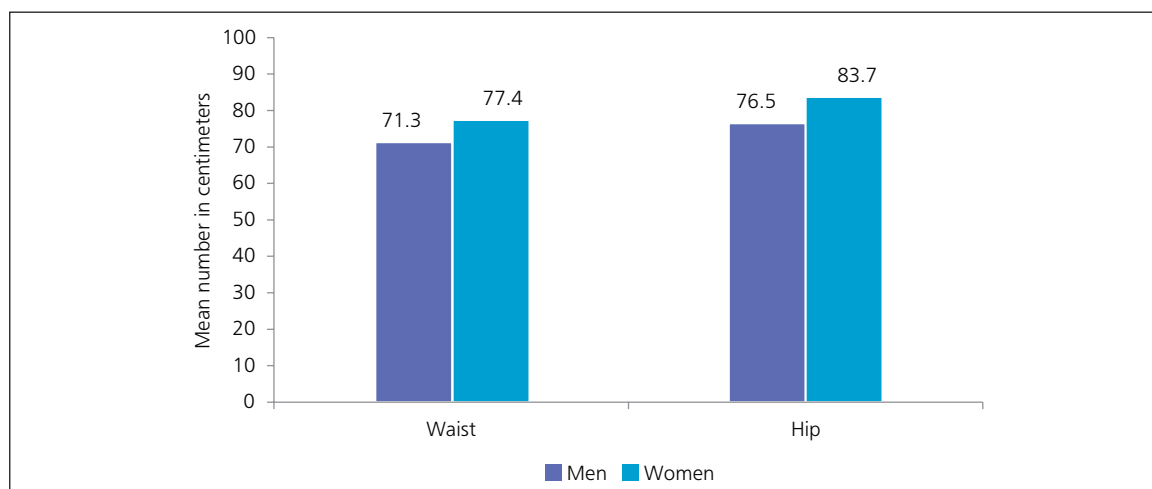
The mean waist to hip ratio was 0.9 for both sexes and across all age groups (Annex 1, Table 9.7).

10. History of blood pressure

The current health status and health-seeking behaviour of the study population related to high blood pressure were assessed by asking respondents about history of blood pressure and their treatment history In addition, blood pressure of the respondents (who consented) was also measured by trained health care workers.

History of raised blood pressure (hypertension)

Most of the study population (87.3%) had never had their blood pressure measured by a doctor or any other health worker. This proportion was higher in men (91.5%) than in women (79.7%). The prevalence of self-reported hypertension in both sexes (diagnosed within the past 12 months) was 2.8%. (Figure 10.1)

Figure 10.1: Blood pressure measurement and diagnosis among adults
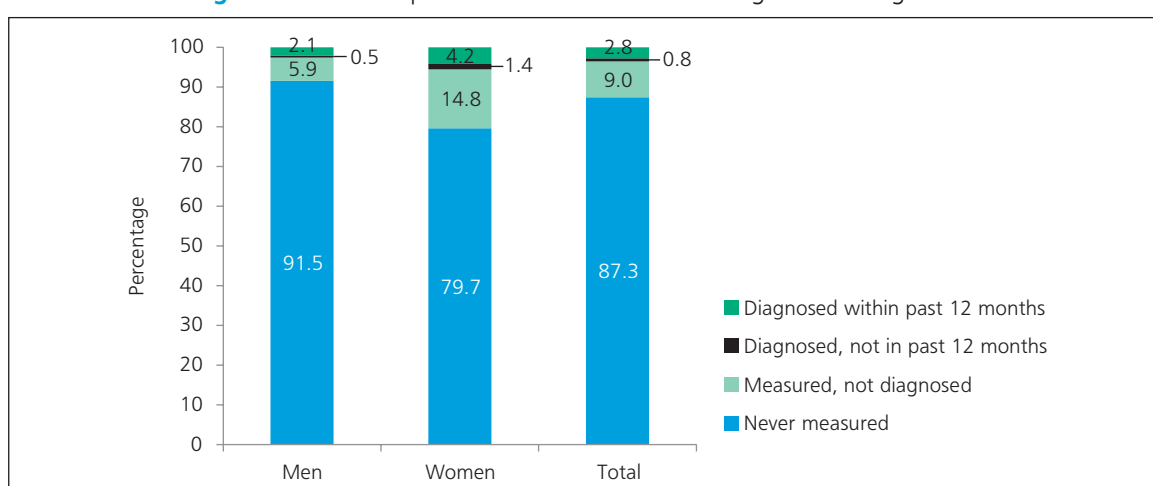
Blood pressure treatment

Among those with self-reported diagnosed hypertension, only 47.7% of both sexes (men 46.6%, women 48.7%) were currently taking medication for blood pressure as prescribed by a doctor or other health worker. This proportion was higher among the 45–69 year age group (total: 53.9%, men 47.8%, women 60.5%) than in the younger age group (Annex 1, Table 10.2).

Traditional healers and remedies

Among the previously self-reported diagnosed hypertensive population, 16% had visited traditional healers. This proportion was a little higher in men (17.5%) than in women (14.6%). About 36.9% of all respondents were taking herbal or traditional remedies for hypertension; this proportion was higher among men (39%) than among women (35%) (Figure 10.2).

Figure 10.2: Percentage of previously diagnosed hypertensive respondents who have visited or received treatment from a traditional healer

Legend: Seen a traditional healer ■ Taking herbal or traditional remedies
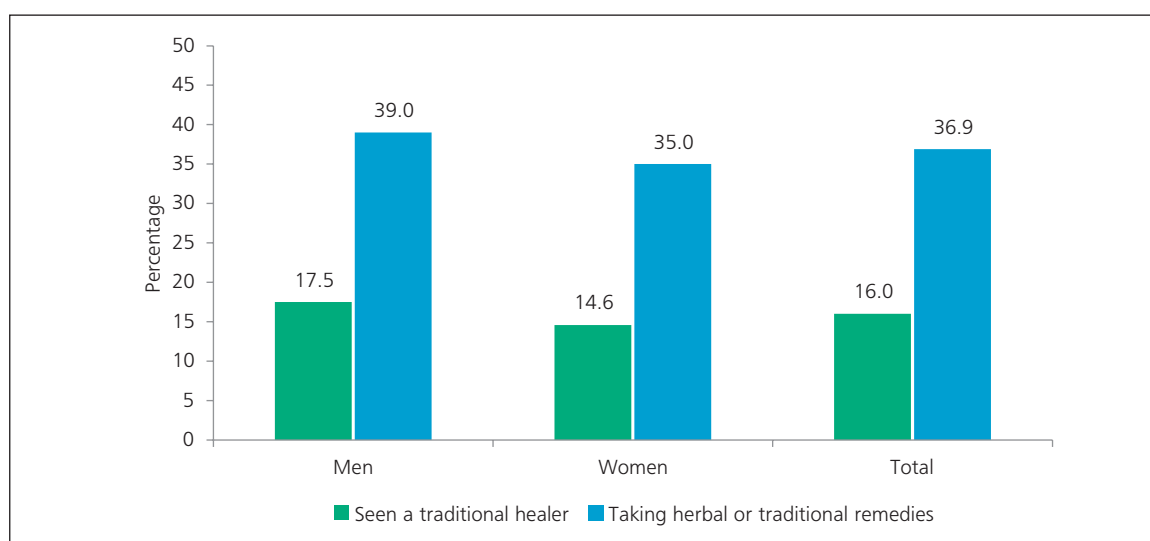
Blood pressure measurement

The mean systolic blood pressure of the all adults was 129.0 mmHg (men 133.1 mmHg, women 121.4 mmHg). Mean diastolic blood pressure was 83.1 mmHg (men 83.5 mmHg, women 82.4 mmHg). (Figure 10.3)

Figure 10.3: Mean systolic and diastolic blood pressure (mmHg)

Legend: ■ Systolic BP ■ Diastolic BP
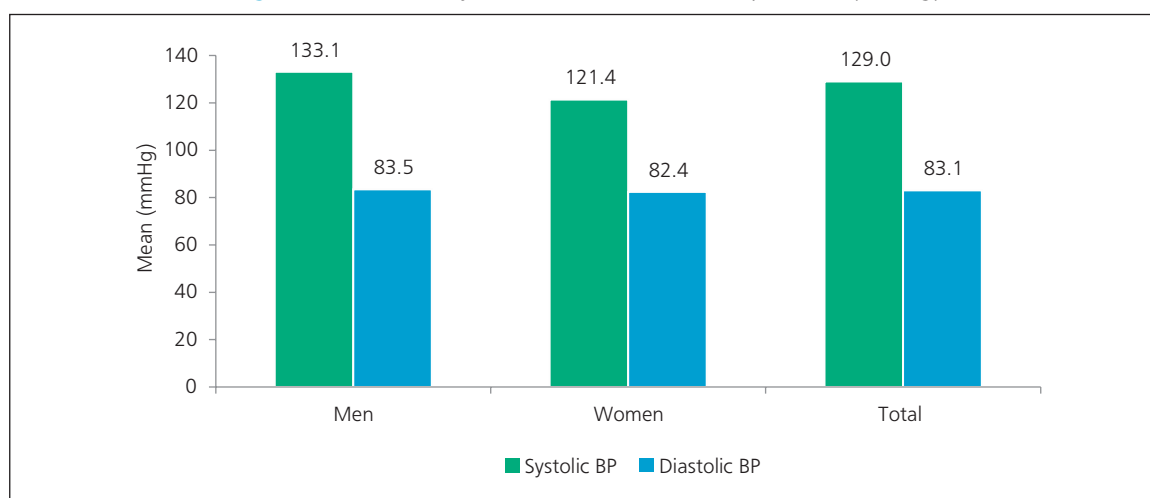
The prevalence of raised blood pressure, using the criteria of SBP≥140 or DBP≥90 mmHg and excluding those on medication, was 38.6% (men 44.8%, women 26.9%). When those persons who were currently on medication were included, this prevalence rose to 39.3% (men 45.3%, women 28.0%). The proportion of men with raised blood pressure including those currently on medication for hypertension was highest (48.2%) among the 18–44 years age group, as compared with 45–69 years olds (39.7%). Among women it was the opposite: 26.7% of the younger age group had a raised blood pressure or were currently on medication and 34.4% of the 45-69 years old ones.(Figure 10.4 and Annex 1, Table 10.5)

Using the criteria SBP ≥160 and/or ≥100 mmHg and excluding those on medication, 6% of the total respondents (men 7%, women 4.2%) were found to have raised blood pressure. This prevalence was a little higher (7%) when those currently on medication were included (men 7.8%, women 5.6%) (Figure 10.4).

Figure 10.4: Percentage of respondents with raised blood pressure by sex
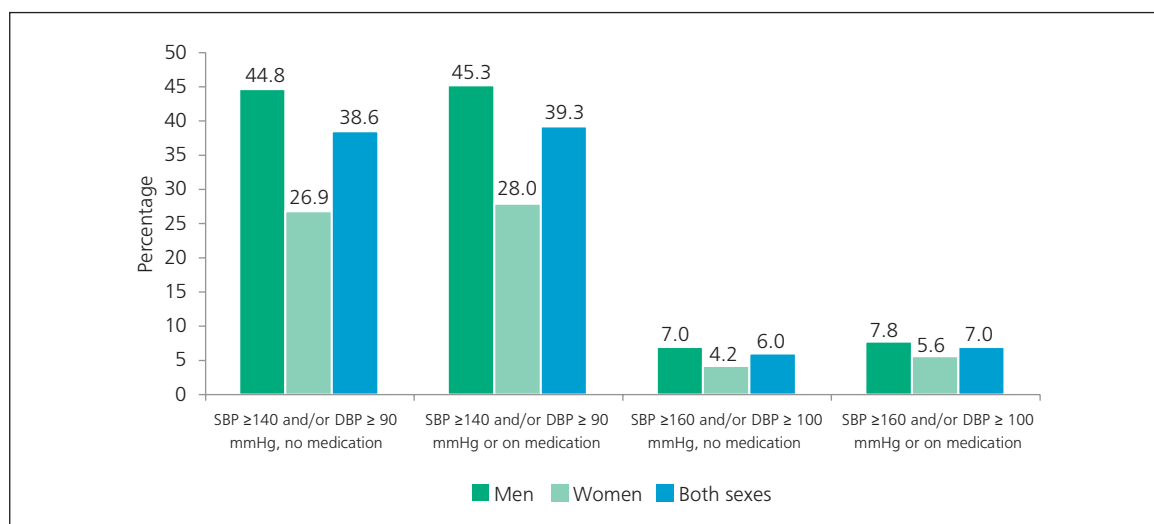
As shown in Figure 10.5, among those with raised blood pressure (characterized as SBP≥140 and/or DBP≥90 mmHg), almost all (97.3%) were not on medication. This proportion was 98.1% for men and 94.7% for women.

Figure 10.5: Percentage of respondents with treated and/or controlled raised blood pressure among adults
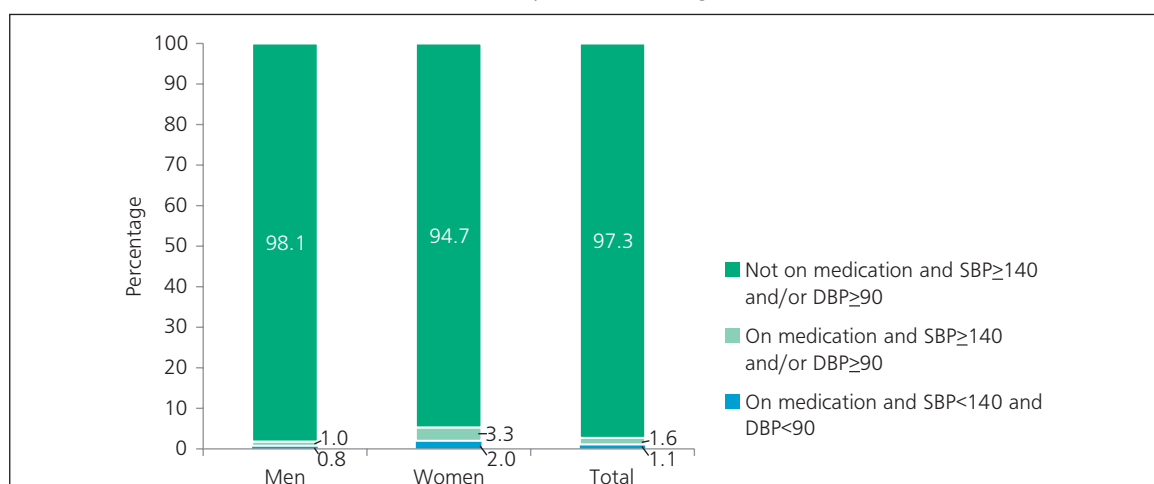
Heart rate

The mean heart rate of all respondents was 75.8 beats per minute, among male respondents it was 74.5 beats per minute, and among female respondents it was 78.3 beats per minute (Annex 1, Table 10.7). .

11. Blood glucose

The current health status and health-seeking behaviour of the study population related to high blood glucose or Diabetes were assessed by asking respondents about history of blood glucose and their treatment history In addition, blood glucose of the respondents (who consented) was also measured by trained health care workers following the standard STEPS 3 protocol, using the validated equipment mentioned in the data collection section.

History of raised blood glucose (diabetes mellitus)

The prevalence of raised blood glucose of the survey population was identified by asking the respondents about their history of Diabetes or measurement of high blood sugar. Only 0.2 % of all respondents have reported being diagnosed for diabetes by a doctor or a health worker in the past 12 months. Blood glucose had never been measured in 99.2% of the adults. This proportion was almost similar in both sexes (men 99.4%, women 98.8%). (Figure 11.1)

Figure 11.1: Blood sugar measurement and diagnosis
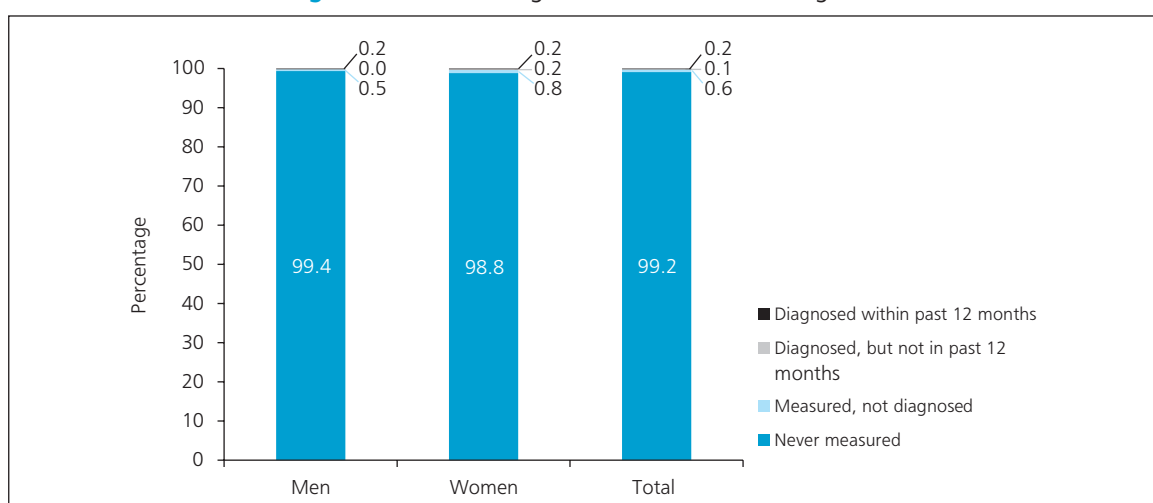
Blood glucose measurement

The survey found that mean fasting blood glucose (mmol/L) for both genders was 4.3 mmol/L (equivalent to 77.6 mg/dl); men had a slightly higher mean blood glucose than women (4.4 mmol/L versus 4.1 mmol/L or 79.7 mg/dl versus 74.0 mg/dl). Generally older age groups of both men and women had higher mean fasting glucose than younger age groups (Annex 1, Table 11.4 & 11.5).

Among all respondents, 4.1% had impaired fasting glycaemia [plasma venous value: ≥6.1mmol/L (110mg/dl) and <7.0mmol/L (126mg/dl)]. The prevalence was a little higher in men (5.7%) than in women (1.2%) (Annex 1, Table 11.6).

Overall 1.5% had raised blood sugar [(plasma venous value: ≥ 7.0 mmol/L (126 mg/dl)] or were currently on medication for diabetes. This prevalence was same for men (1.5%) and women (1.6%). (Figure 11.2)

Figure 11.2: Percentage of respondents having impaired fasting glycaemia and raised blood glucose or were currently on medication for diabetes

National survey for noncommunicable disease risk factors and injuries using WHO STEPS approach in Timor-Leste – 2014
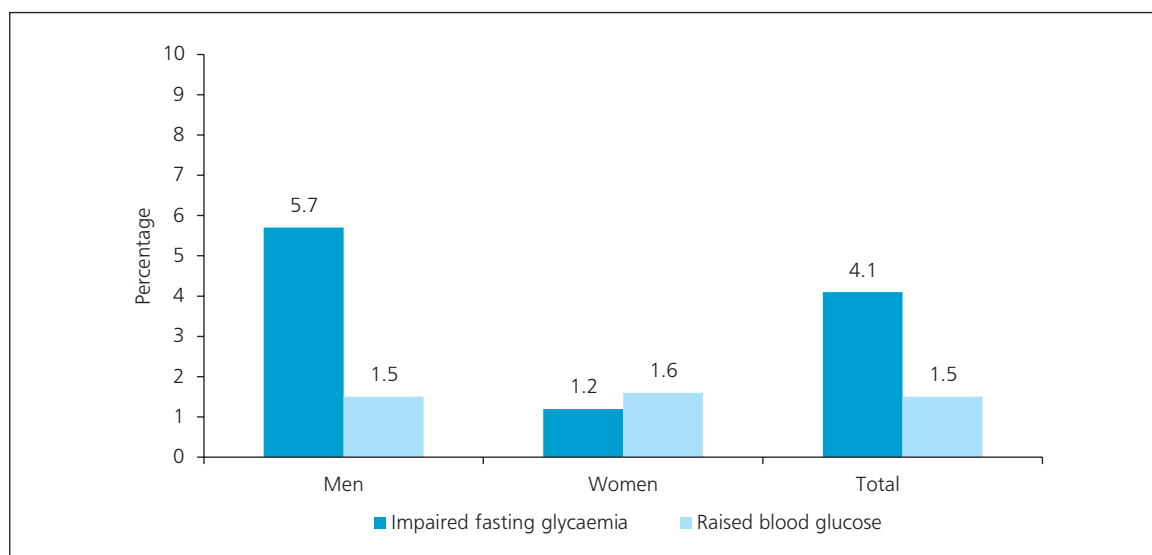
12. Abnormal lipids

An abnormal lipid profile is known to be a major risk factor for cardiovascular diseases. The current health status and health-seeking behaviour of the study population related to high blood cholesterol were assessed by asking respondents about history of blood cholesterol and their treatment history In addition, total cholesterol was also measured by trained health care workers following the standard STEPS 3 protocol, using the validated equipment mentioned in the data collection section.

History of raised total cholesterol

Almost all respondents (99.3%) had never had measured their cholesterol. Only 0.2 % of the respondents mentioned that they were diagnosed with raised cholesterol in the last 12 months (Figure12.1).

Figure 12.1: History of cholesterol measurements
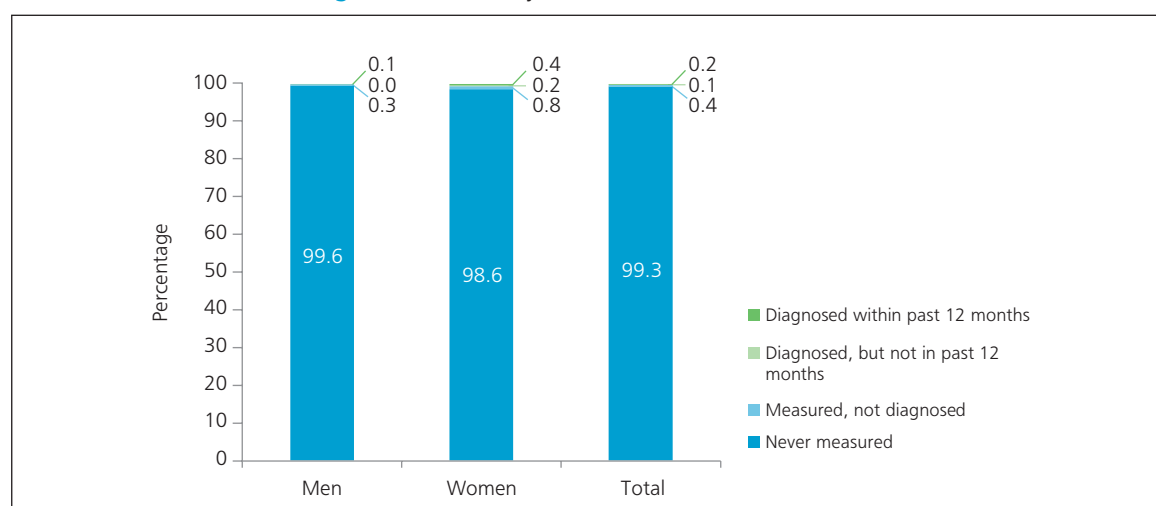
Among previously diagnosed high cholesterol, 39.5% were taking oral medicines (Annex 1 Table 12.2), 19.6% were getting treatment from traditional healers and 15.7% were taking herbal medicines (Annex 1 Table 12.3).

Biochemical measurement

The mean cholesterol level for both sexes (total) was 3.9 mmol/L (equivalent to 149.9 mg/dl) and was slightly higher for females (4.2 mmol/L equivalent to 160.7mg/dl) than for males (3.7 mmol/L) (Annex 1, Table 12.4 and 12.5).

The proportion of respondents with raised total cholesterol ($\geq$ 5.0 mmol/L or $\geq$ 190 mg/dl) or currently on medication for raised cholesterol was 21.0%. This proportion was higher for women (25.5%) than for men (18.5%). Overall, 5.3% of the respondents had raised total cholesterol $\geq$ 6.2 mmol/L or $\geq$ 240 mg/dl or were currently on medication for raised cholesterol. It was a little higher in men (5.5%) than in women (4.9%) (Figure 12.2).

Figure 12.2: Percentage of adults with raised total cholesterol or who currently on medication for raised cholesterol

Cholesterol ≥190 mg/dl
or who currently on medication
for raised cholesterol

Cholesterol ≥240 mg/dl
or who currently on medication
for raised cholesterol

National survey for noncommunicable disease risk factors and injuries using WHO STEPS approach in Timor-Leste – 2014
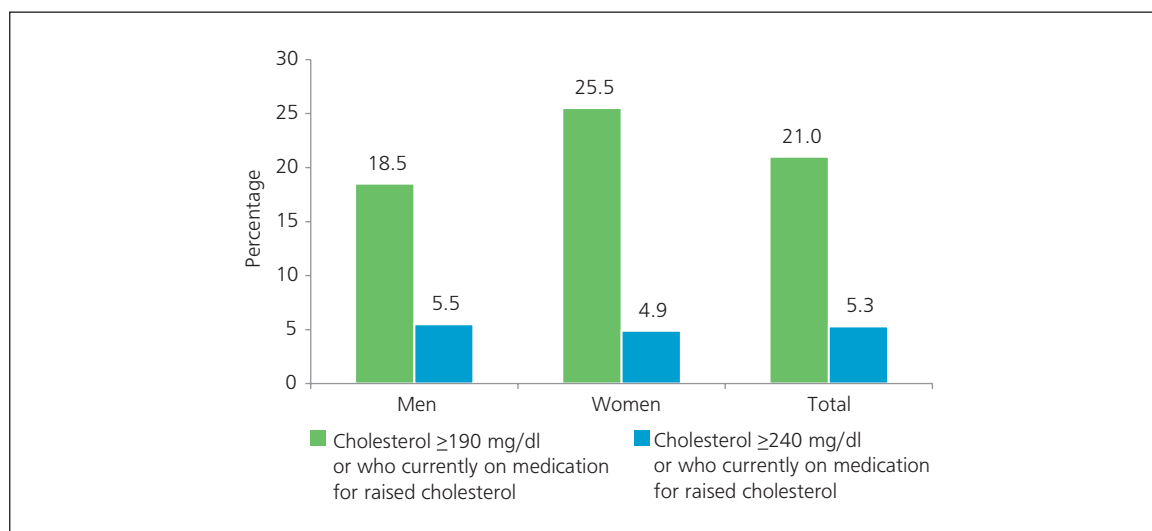
13. Combined risk factors and cardiovascular disease risk prediction

Combined risk factors

For the purpose of exploring combined risk factors, responses were grouped into three categories according to the presence of the five major risk factors based on principal component analysis. The first category was 'no risk factors'; the second 'one or two risk factors', and the third 'three to five risk factors'. The five major risk factors are:

♦ current daily smokers

♦ less than five servings of fruit and vegetables per day

♦ low level of activity (<600 MET-minutes)

♦ overweight or obese (BMI ≥ 25 kg/m^2)

♦ raised blood pressure (SBP ≥ 140 mmHg and/or DBP ≥ 90 mmHg or currently on medication for raised blood pressure)

One in five respondents (19.4%) had three to five risk factors. This proportion was higher among men (21.1%) than women (16.6%) (Figure 13.1 and Annex 1, Table 13.1). Only 7.8% of adults had no risk factors. Three fourth (72.8%) of respondents were found to have 1-2 risk factors. This proportion was higher among women (79.1%) as compared to men (68.8%). This proportion was found to be higher among men (10.1%) compared to women (4.2%) (Figure 13.1).

Figure 13.1: Status of combined risk factors among respondents by sex
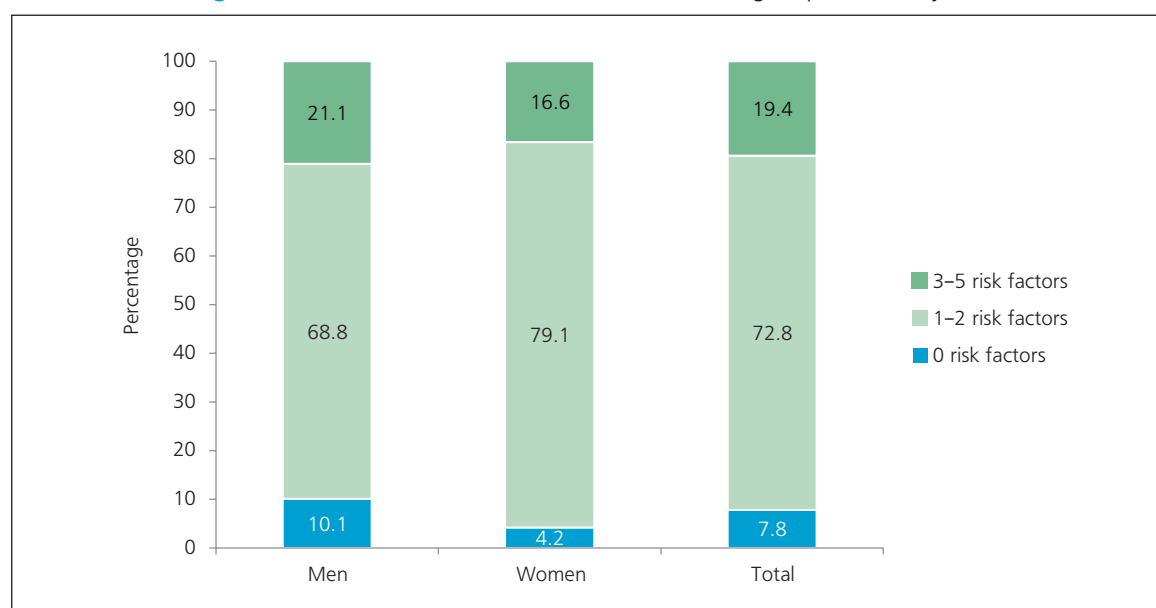
Cardiovascular disease risk prediction

A 10-year risk of having a cardiovascular (CVD) event of ≥30% is defined according to age, sex, blood pressure, smoking status (current smokers or those who quit smoking less than one year before the assessment), total cholesterol, and diabetes (previously diagnosed or a fasting plasma glucose concentration ≥126 mg/dl) status of the respondents. The proportion of respondents in the age group 40–69 years with a 10-year CVD risk of ≥30% was 1.4% for both sexes (men 0.9%, women 2.9%). Among women, this proportion was higher for the 55-69 years age group (5.2%) compared to the 40-54 years age group (1.7%). Among men, there was no difference in risk among younger or older population. (Figure 13.2)

Figure 13.2: Percentage of respondents with a 10-year CVD risk ≥ 30% or with existing CVD

National survey for noncommunicable disease risk factors and injuries using WHO STEPS approach in Timor-Leste – 2014
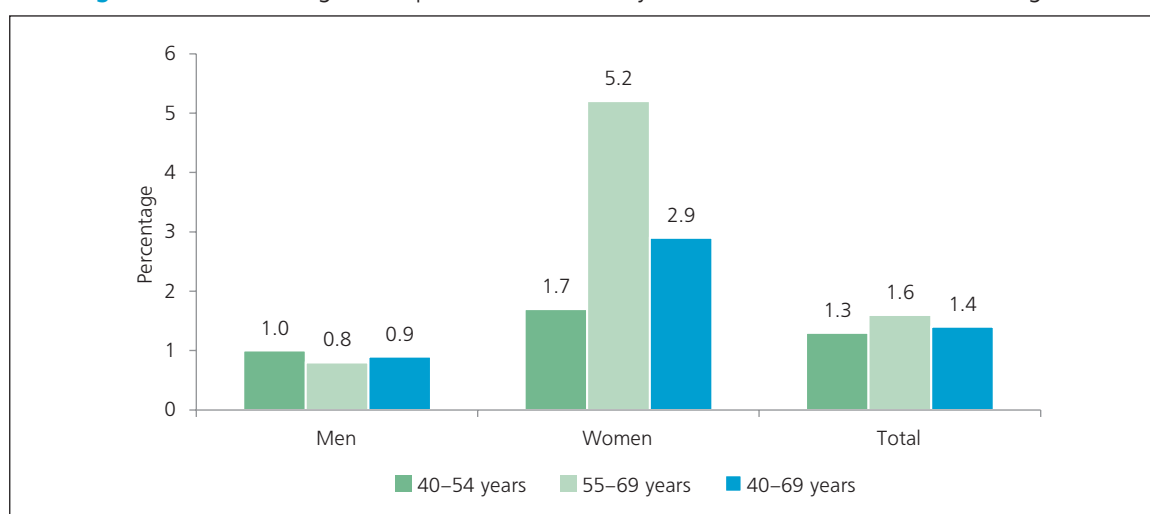
14. Lifestyle advice by health-care provider

Less than 20% of respondents had been advised by their doctors or health workers to quit or not to start tobacco use (19.7%); to reduce salt in their diet (18.6%); to eat five servings of fruit/vegetables each day (17.4%); to start or to do more physical activity (15%); to reduce fat in their diet (14.8%); to maintain a healthy body weight or to lose weight (11.3%). More women than men were advised to follow the above mentioned life style (Figure 14.1).

Figure 14.1: Percentage of respondents who have been advised by doctor or health worker to change their life style
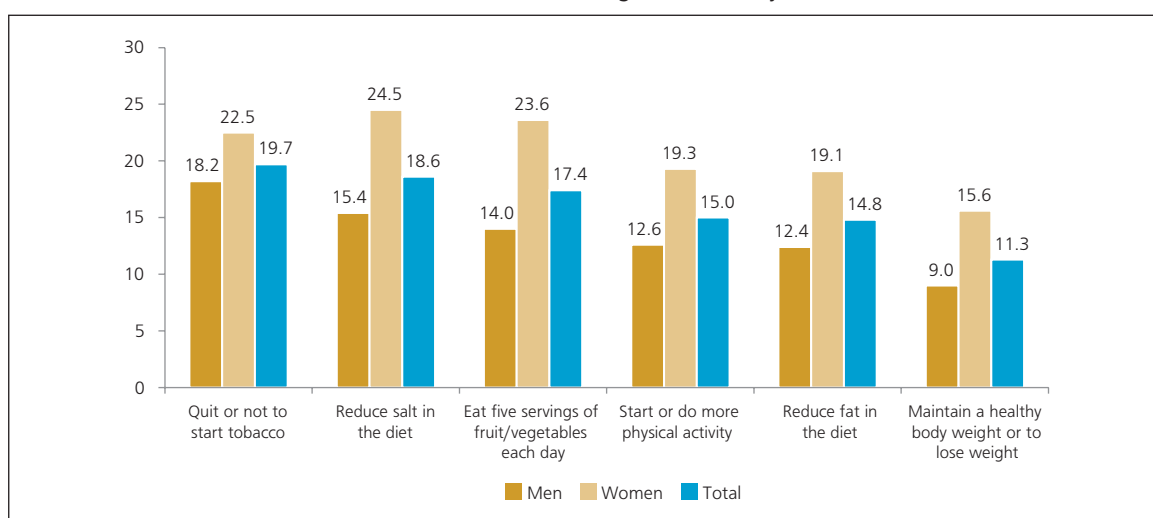
Cervical cancer screening

Among all female respondents (18-69 years), 0.7% had ever had a screening test for cervical cancer while only 1.1% among women aged 30–49 years, ever had a screening test for cervical cancer (Annex 1, Table 14.2)

15. Violence and injury

The survey assessed risk behaviors related to violence and injury.

Use of seatbelt or helmet while driving or being a passenger

Almost all adults (97.5%), who were either drivers or passengers of a motor vehicle did not always use a seat belt in the past 30 days (Figure 15.1). Similar patterns were observed in both sexes. The percentage of drivers or passengers of a motorcycle/motor-scooter not always using a helmet in the past 30 days was also high (81.9%); it was slightly higher in men (83.0%) than in women (79.7%). The percentage of cyclists who did not always use helmets while riding among those riding a bike in the last 30 days was 95.1% and almost similar patterns were in both sexes (Total) (Annex 1, Table 15.1,15.2 and 15.3).

Figure 15.1: Percentage of persons not always using safety measures at driving in past 30 days among adults
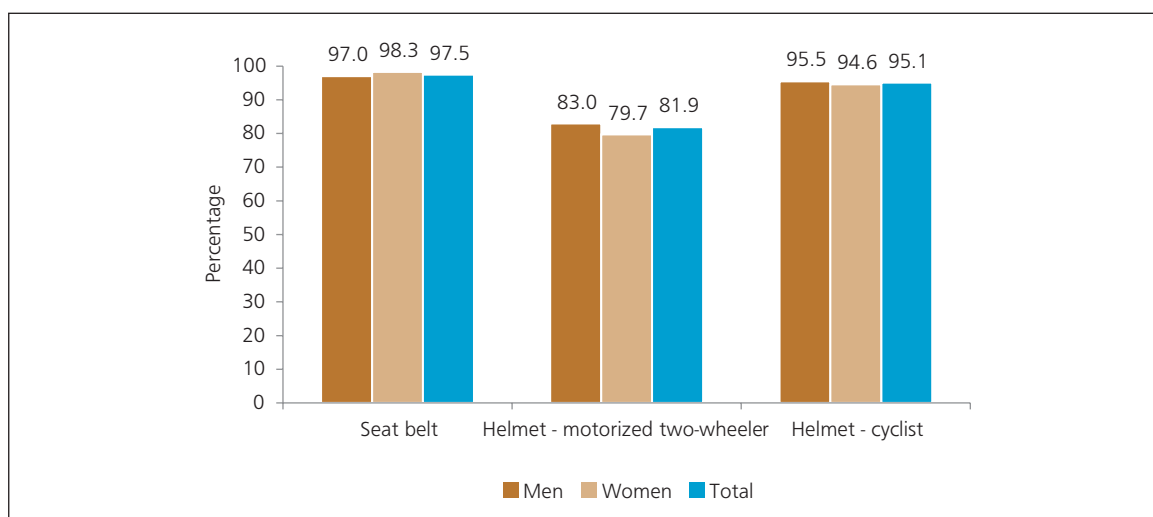
Road traffic crashes

The prevalence of road traffic crashes among road users in the past 12 months (driver, passenger or pedestrian) was 3.0% and it was almost as twice as high in men (3.6%) compared to women (1.9%). The percentage of respondents injured in non-road traffic related accidents in the past 12 months was 2.5% and the percentage was almost the same in both sexes (Figure 15.2).

Figure 15.2: Percentage of respondents who were involved in road traffic crashes and/or injured in non-road traffic related accidents in the past 12 months
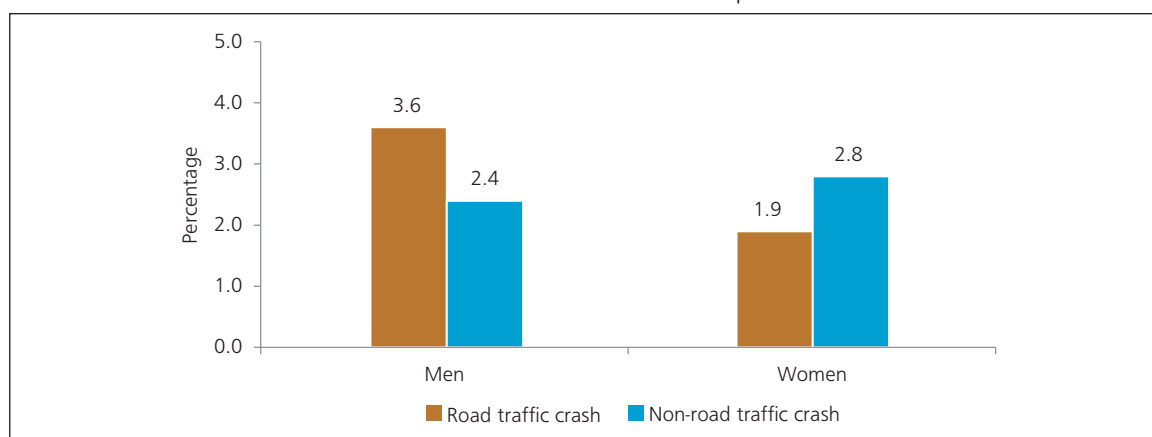
Among those involved in road crashes in the past 12 months, 49.6% were seriously injured requiring medical attention. The percentage for women (59.0%) was higher than for men (46.9%) (Annex 1, Table 15.5).

Non-road Traffic Accidents

Among all respondents who were seriously injured due to non- road traffic accidents in the past 12 months, top two causes were falls (62.5%) and cuts (21.0%). Fall was main cause in men (72.3%) as well as in women (47.1%). Most of these injuries were seen in the younger (18–44 years) age groups. (Figure 15.3, Annex 1, Table 15.7)

Figure 15.3: Percentage of respondents who were seriously injured in non-road traffic accident
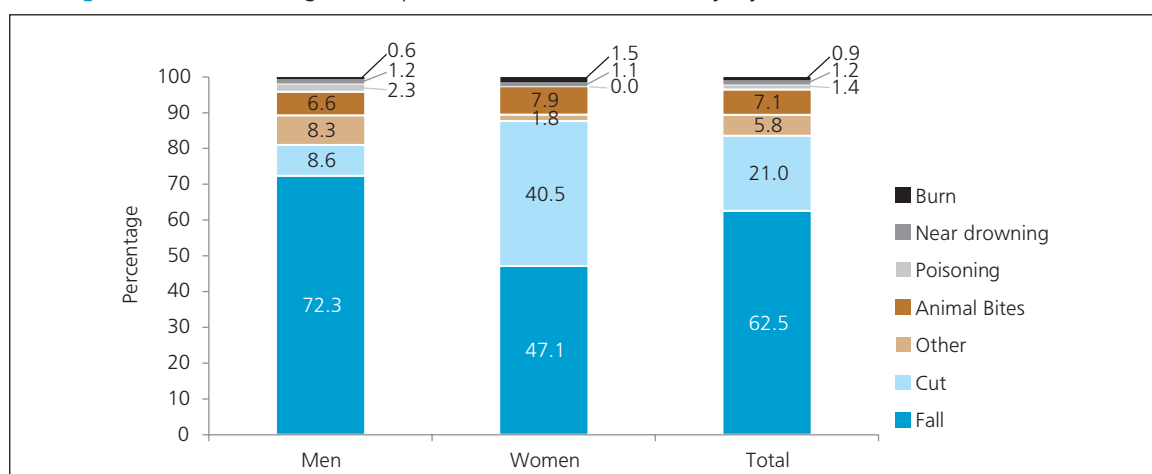
Among person reporting being seriously injured in the past 12 months, most accidents happened at home or on the road/street/highway(35 % each), followed by School/Workplace with 22.4 (Figure 15.4).

Figure 15.4: Location of accidental serious injuries among respondents seriously injured
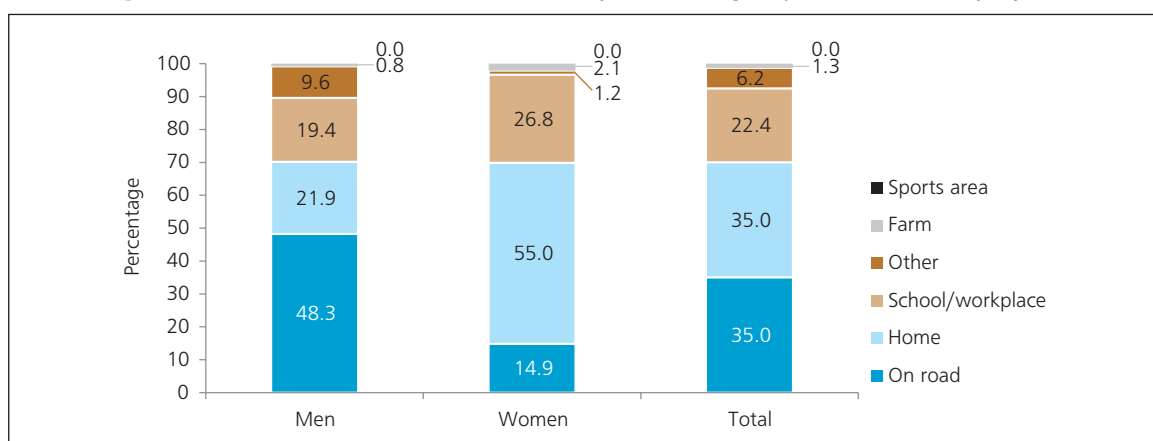
Driving under the influence of the alcohol

Approximately, one tenth of all respondents (9.6%) had driven a motorized vehicle after having two or more alcoholic drinks in the past 30 days. The percentage was significantly higher in men (14.8%) than in women (2.5%). Overall 7.5% reported that they had taken a ride on a motorized vehicle where the driver had consumed two or more alcoholic drinks before driving. The prevalence in men was significantly higher (12.5%) than in women (0.5%). (Figure 15.5)

Figure 15.5: Percentage of respondents who have driven after having two or more alcoholic drinks or rode motorized vehicle with drunken driver after having had 2 or more alcoholic drinks in the past 30 days
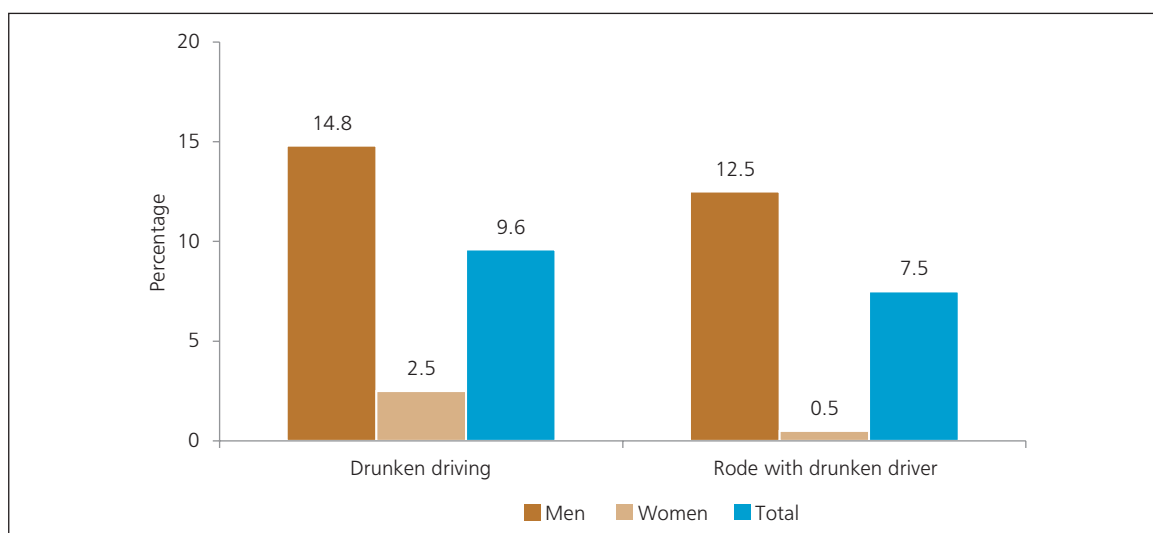
Injuries due to violent events

Overall 1.0% of all respondents reported being seriously injured from violent incidents in the past 12 months (men 1.1% and women 0.7%) (Annex 1, Table 15.11).

1.9% of all respondents were frightened for the safety of themselves or their families because of the anger or threats of another person (Annex 1, Table 15.12).

Majority of respondents who reported being frightened, claimed that it was someone within the family (57.8%), followed by official or legal authority (20.0%), friend or acquaintance (9.2%) and stranger (8.5%). (Figure 15.6)

Figure 15.6: Percentage of respondents being frightened of other person, by each of the types of people they were afraid of
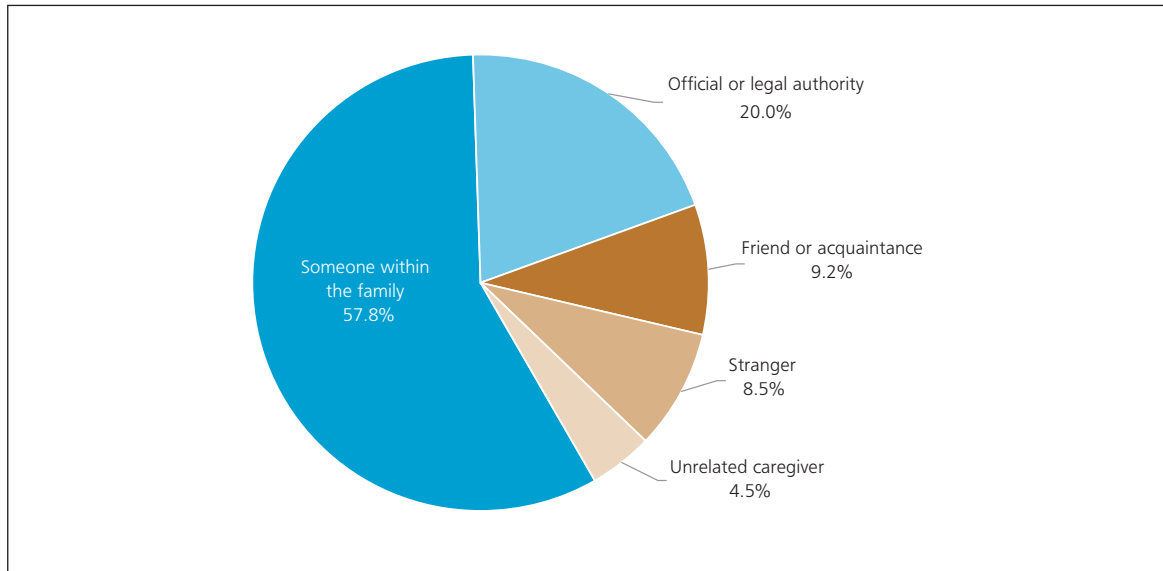
16. Discussion

Similar to many developing countries, Timor-Leste is undergoing an epidemiological transition with an increasing burden of NCDs. Deaths due to ischaemic heart diseases and stroke rank third and fourth after tuberculosis and lower respiratory infection among the top causes of the mortality. This kind of NCD burden is likely to be even more problematic in the immediate future, considering the population's high exposure to commonly known risk factors of NCDs such as tobacco use, excessive alcohol consumption, physical inactivity, unhealthy diet, and high salt consumption.

Tobacco use (both smoked and smokeless) is highly prevalent in Timor-Leste and this is confirmed by this survey which found current tobacco use in nearly 60% of adults. Nearly half (48.6%) of the population are current smokers, mostly smoking manufactured cigarettes. A great majority of men use tobacco (70.6% men versus 28.9% women). Other household surveys such as Demographic Health Survey (15-49 years) and school based surveys such as Global Youth Tobacco Survey (13-15) done in the past show high prevalence of tobacco use in different age groups.

In addition to the active use of tobacco by adults, second-hand smoke exposure both at homes and at work places is also alarmingly high. Exposure to second-hand smoke can affect adversely non-smokers, including children. High prevalence of second-hand smoke exposure indicates that in addition to low health literacy on the risks of tobacco use, the existing tobacco public health interventions are inadequate in protecting the non-users. Also the hazards of consumption of smokeless tobacco and betel quid are not fully considered. It appears that there is no widespread dissemination of information on the hazards of tobacco in the newspapers, radio and other common media of communication. Smoking and smokeless tobacco use cessation should be addressed through strategic public health campaigns. Low report of health warnings on cigarette packages by current smokers indicates that the package health warnings decree which came into force in 2006 and was recommended by the WHO Framework Convention on Tobacco Control (WHO FCTC) is not fully implemented or enforced. Without a robust tobacco prevention programme, tobacco-related mortality such as atherosclerosis, cardiovascular disease (CVD), lung cancer, and chronic obstructive pulmonary disease (COPD) are likely to rise in the country with the current rate of tobacco use. Timor-Leste has taken several steps in combating NCD risk factors control.

Any level of alcohol consumption is harmful. However, hazardous drinking in excess of the recommended daily limit is damaging to health. Nearly 60% of the population in Timor-Leste are life-time alcohol abstainers. Current drinkers (28.6%) of whom the majority are males, drink regularly (most days in the week) and in harmful quantities (mean number of standard drinks is 15 per drinking occasion among men). Drinking, besides harming individual health, is also a cause of harm for non-drinkers. Other alcohol-related domestic and social violence were not fully explored in this survey; however, hazards of drink and drive are apparent in Timor-Leste. Almost 15% men reported having driven a motorized vehicle after consuming 2 or more alcoholic drinks.

Intake of fruits and vegetables plays a protective role in the prevention of cancers, heart diseases and many other diseases. The World Health Organization (WHO) recommends a minimum of five daily servings of fruits and/or vegetables. The survey reveals a huge consumption gap

of fruits and/or vegetables in the population with more than three fourths not consuming the recommended number of five servings per day. Less consumption of fruits and or vegetables by females compared to males warrants a special programmatic response targeting the female population. Consumption of fruits and vegetables and dietary practices is not simply a health literacy issue, rather it is determined by underlying social and economic factors of prices and affordability. Current low consumption of fruits and vegetables should be regarded in the context of the existing level of access and affordability of commodities of fruits and vegetables. This should be changed through broad supportive public and economic policy reforms. In addition, public campaigns for general population and health education in schools should be launched to inform the population and schoolchildren about the importance of consuming fruit and vegetables in maintaining individual health.

Nutritional problems in both spectrums of overweight and underweight are visible in the population. On the one hand the high prevalence of underweight (18.5%) indicates a cohort of population who experienced a prolonged conflict before the nation's independence in 2002. On the other hand, the prevalence of overweight (10.3%) although still low compared to other neighbouring countries, is likely to rise with the political stability and economic progress. Nutritional programming needs to address the double threat of overweight and under-nutrition in the population. Because more females were underweight compared to males (31.3% versus 11.2%), gender-sensitive nutritional programming should be required to address the nutritional needs of the female population in particular.

The benefits of physical activity include prevention of heart diseases and diabetes, reduction in obesity, blood pressure and cholesterol, and improvement in mental health conditions. However, only 16.7% of the population are not attaining the WHO recommended level of physical activity (≥150 minutes of moderate intensity physical activity per week, or equivalent). Recreation and transport-related physical activity contribute the least. Strategic national health promotion activities are required to address the current low level of physical activity. In particular, recreation and leisure time physical activity, and transport-related physical activity such as cycling should be promoted, while the current coincidental work-related physical activity should be maintained. The physical activity level was not analysed by urban–rural residents; it can be assumed that more urban settlers do not achieve the recommended level of physical activity. Generally, such disparities will require an urban health promotion, which includes improving built urban structures to make a conducive health-promoting environment.

The metabolic risk factors for NCDs are raised blood pressure, obesity, raised cholesterol and blood sugar. They will lead to a growing burden of NCDs. Nearly two fifths of the population above 18 years have raised blood pressure, homogenous prevalent in all age groups, and 13.3% have impaired fasting glycaemia Those living with metabolic abnormalities or already suffering from NCDs do not receive the required treatment. Health-seeking behaviour for NCD management is low; the majority had (>99%) never had their blood pressure or blood cholesterol measured and 97.3% with raised blood pressure are not receiving treatment. Even among those diagnosed with hypertension or raised cholesterol, or diabetes, the majority did not receive treatment. Likewise, 99.3% of females between 18 and 69 have never been screened for cervical cancer. Health systems should be made more responsive to address treatment and health-seeking behaviour.

Both private and public health systems should be involved in integrating NCD services to promote as well as managing NCD patients.

Despite the existence of a traffic code in Timor-Leste since 2003, road safety practices such as use of seat belt and helmet are not very widespread just as drink driving; strategic communication, education and enforcement should be stepped up to improve the road safety practices.

The prevalence of combined risk factors such as current daily smokers, less than five servings of fruits and vegetables per day, insufficient physical activity, overweight, raised blood pressure also need to take into account. The results of this survey revealed that the prevalence of three or more of the risk factors, mentioned above, for both sexes was higher among age group 45–69 years (28.2%) in comparison to age group 18–44 years (16.3%). Males had a higher prevalence (21.1%) of three or more risk factors than females (16.6%). These findings suggest that the prevalence of risk factors increases with age.

Exposure to a single risk factor as well as combination of more risk factors can substantially increase the risk of developing multiple NCDs. One out of five individuals in Timor-Leste is already exposed to three or more NCD risk factors. NCDs will potentially emerge as a the biggest public health challenge in Timor-Leste due to the high prevalence of NCD risk factors, and the already existing gap between prevalence and treatment. However, if greater investments in NCD prevention and services are made through the right policies and public health measures, the imminent NCD epidemic could be controlled.

Health systems should be made more responsible for treatment and health-seeking behaviour. Both private and public health systems should be involved in integrating NCD services to promote as well as managing NCD patients. The development of national strategy for prevention and control of noncommunicable diseases, injuries, disabilities and care of the elderly and NCD National Action Plan 2014–2018 is one way counteracting these NCD problems and burdens in Timor-Leste. This requires the involvement of all government institutions as well as private sector, civil society, faith-based organizations, academia and community to have a comprehensive and multi-sectoral approach for preventing and controlling NCDs in Timor-Leste.

Study limitations

This is the first nationwide survey conducted specifically to identify risk factors for noncommunicable diseases in Timor-Leste. The strength of this study was the nationally-representative sample size with a high response rate of 96%. The equipment and materials used in this survey are reliable and valid. This survey used a cross-sectional design, it is weak to establish causal relationships but its strength is that it can be used to measure prevalence of any disease including NCDs at any point of time with a large sample size.

17. Conclusion and recommendations

Conclusion

This is the first ever adult nationwide survey to assess the risk factors for noncommunicable diseases in Timor-Leste using a cross-sectional study design. Population included both males and females aged between 18 and 69 years. The survey found high rates of tobacco and alcohol use, inadequate physical activity, unhealthy dietary behaviours, risky road safety behaviours, and low levels of health screening for major NCD risk factors.

Recommendations

This is a nationally representative survey that provides rich information on the prevalence of key NCD risk factors in Timor-Leste. The findings of this survey will be very useful to inform policy-makers, programmers and researchers for planning interventions in NCD control in the country. The following are relevant recommendations with regard to the findings of this survey:

♦ The survey suggests low NCD health-care coverage and reveals the existence of a high gap in treatment. NCD screening services should be improved and integrated and strengthened at the primary health care services. One model should be the introduction of the WHO Package of Essential NCD (PEN) services in the primary health care services to increase the coverage of NCD services.

♦ Primary health-care (PHC) facilities in Timor-Leste have been equipped by competent health professionals (doctors, nurses and midwives), so that interventions on NCDs can be integrated in those PHC packages and family health programmes (Saúde na familia).

♦ The survey indicates that risk factors for NCDs are highly prevalent. Strategic health promotion for NCD should be stepped up to promote physical activity, healthy diet including consumption of fruits and vegetables and to reduce salt, alcohol and tobacco consumption. The national recommendations for diet, and physical activity, if available, should be developed further and be spread through media.

♦ Addressing the consumption of tobacco, alcohol and processed food: there has to be required adequate legislations and enforcement authorities. In particular, legislation and education should discourage smoking in home and work settings as well as in public spaces, Marketing and health warning labels of tobacco, alcohol, and processed foods should be well regulated and enforced.

♦ A nationwide campaign should start immediately to encourage smokers to quit smoking and discourage youth and students from taking up smoking.

♦ Road safety policies including control of drink-driving, use of seat belt and helmet should be enforced as public health measures in collaboration with other government sectors.

♦ NCD prevention and control should also design gender-sensitive programmes to improve the consumption of fruits and/or vegetables among females and to reduce female overweight and undernutrition.

- ♦ Cervical cancer screening programmes should be introduced as routine services in the health-care settings. Diagnostics, treatment and control including palliative care should also receive appropriate attention.

- ♦ Increasing physical activity in the population will require appropriate structural planning and development as well as partnerships between various sectors including health, education, roads, urban planning, and transport. This will ensure promoting a conductive health environment with pedestrian lanes, urban parks, community walk trails. Adequacy of the current urban plans should be made sensitive enough to accommodate the "health-in-all-policies approach". A multisectoral framework for action should be introduced to holistically address NCD prevention and control.

- ♦ Health education should be provided on NCD risk factors and promotion of healthy lifestyle in communities by quitting smoking, reducing alcohol consumption, eating healthy foods, doing regular physical activity. Health workers and those who understand the value of healthy lifestyle should be encouraged to be models for others.

- ♦ Training and upgrading the knowledge and awareness of health workers and the population on NCD risk factors with their consequences should receive attention.

- ♦ A regular surveillance system for NCDs to routinely monitor NCD-trends and risk factor trends should be implemented.

- ♦ Health systems should be adequately equipped with adequate infrastructure, human resources, diagnostic tools, drugs and equipment to address NCD problems at all levels of health-care facilities.

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Annex 1: Data Tables

Background characteristics

Table 3.1*: Age group and sex of respondents

Age Group (years)	Men		Women		Both Sexes	
	n	%	n	%	n	%
18–44	602	37.1	1022	62.9	1624	62.2
45–69	481	48.8	504	51.2	985	37.8
18–69	**1083**	**41.5**	**1526**	**58.5**	**2609**	**100**

Table 3.2: Mean number of years of education among all respondents

Age Group (years)	Men		Women		Both Sexes	
	n	Mean	n	Mean	n	Mean
18–44	596	8.7	999	7.6	1595	8.0
45–69	450	3.3	454	1.8	904	2.6
18–69	**1046**	**6.4**	**1453**	**5.8**	**2499**	**6.1**

Table 3.3: Highest level of education of respondents by age and sex

Age Group (years)	n	% No formal schooling	% Less than primary school	% Primary school completed	%Pre Secondary school completed	% Secondary school completed	% High school completed	% College/ University completed	% Post graduate degree completed
Men									
18–44	601	15.6	13.6	11.0	13.1	32.8	5.0	7.5	1.3
45–69	468	49.6	28.0	5.6	5.3	7.7	3.2	0.6	0.0
18–69	**1069**	**30.5**	**19.9**	**8.6**	**9.7**	**21.8**	**4.2**	**4.5**	**0.7**
Women									
18–44	1010	20.6	15.4	10.4	16.9	30.6	3.3	2.5	0.3
45–69	483	72.0	15.3	2.9	4.1	5.0	0.2	0.4	0.0
18–69	**1493**	**37.2**	**15.4**	**8.0**	**12.8**	**22.3**	**2.3**	**1.8**	**0.2**
Both Sexes									
18–44	1611	18.7	14.8	10.6	15.5	31.4	3.9	4.3	0.7
45–69	951	61.0	21.6	4.2	4.7	6.3	1.7	0.5	0.0
18–69	**2562**	**34.4**	**17.3**	**8.2**	**11.5**	**22.1**	**3.1**	**2.9**	**0.4**

* Fist digit of table number are matching with chapter numbers for ease of understanding.

Table 3.4: Marital status of respondents by age and sex

Age Group (years)	n	% Never married	% Currently married	% Separated	% Divorced	% Widowed	% Cohabiting
Men							
18–44	599	23.7	73.1	0.7	0.3	0.7	1.5
45–69	480	2.7	88.5	1.5	1.5	5.6	0.2
18–69	**1079**	**14.4**	**80.0**	**1.0**	**0.8**	**2.9**	**0.9**
Women							
18–44	1020	14.9	79.3	1.2	0.9	2.0	1.8
45–69	503	1.6	76.1	1.4	1.6	19.1	0.2
18–69	**1523**	**10.5**	**78.3**	**1.2**	**1.1**	**7.6**	**1.2**
Both Sexes							
18–44	1619	18.2	77.0	1.0	0.7	1.5	1.7
45–69	983	2.1	82.2	1.4	1.5	12.5	0.2
18–69	**2602**	**12.1**	**79.0**	**1.2**	**1.0**	**5.6**	**1.1**

Table 3.5: Employment status of respondents by age and sex

Age Group (years)	n	% Government employee	% Non–government employee	% Self–employed	% Unpaid
Men					
18–44	578	17.1	15.7	33.2	33.9
45–69	455	14.5	11.0	43.3	31.2
18–69	**1033**	**16.0**	**13.6**	**37.7**	**32.7**
Women					
18–44	983	4.9	4.2	16.8	74.2
45–69	482	4.1	3.5	23.2	69.1
18–69	**1465**	**4.6**	**4.0**	**18.9**	**72.5**
Both Sexes					
18–44	1561	9.4	8.5	22.9	59.3
45–69	937	9.2	7.2	33.0	50.7
18–69	**2498**	**9.3**	**8.0**	**26.7**	**56.0**

Table 3.6: Unpaid work and unemployed of respondents by age and sex

Age Group (years)	n	% Non–paid	% Student	% Home–maker	% Retired	Unemployed	
						% Able to work	% Not able to work
Men							
18–44	196	8.2	37.2	19.4	0.0	33.2	2.0
45–69	142	8.5	0.0	46.5	4.9	32.4	7.7
18–69	**338**	**8.3**	**21.6**	**30.8**	**2.1**	**32.8**	**4.4**
Women							
18–44	729	3.7	13.0	67.6	0.4	14.7	0.5
45–69	333	4.5	0.0	76.3	6.0	7.8	5.4
18–69	**1062**	**4.0**	**8.9**	**70.3**	**2.2**	**12.5**	**2.1**
Both Sexes							
18–44	925	4.6	18.2	57.4	0.3	18.6	0.9
45–69	475	5.7	0.0	67.4	5.7	15.2	6.1
18–69	**1400**	**5.0**	**12.0**	**60.8**	**2.1**	**17.4**	**2.6**

Table 3.7: Per capita annual income

n	Mean
1927	**715.38**

Tobacco use

Table 4.1: Percentage of current tobacco smokers, by age and sex

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	% Current smoker	95% CI	n	% Current smoker	95% CI
18–44	601	65.6	63.0–68.2	1019	9.0	4.0–14.0	1620	43.0	37.2–48.7
45–69	481	77.1	70.3–83.8	504	12.5	8.6–16.5	985	63.1	42.3–83.9
18–69	**1082**	**69.5**	**67.0–72.0**	**1523**	**9.6**	**5.8–13.4**	**2605**	**48.6**	**38.4–58.7**

Table 4.2: Smoking Status of respondents by age and sex

Age Group (years)	n	Current smoker					Non–smokers			
		% Daily	95% CI	% Non–daily	95% CI	% Former smoker	95% CI	% Never smoker	95% CI
Men									
18–44	601	41.9	33.1–50.8	23.7	16.3–31.1	3.6	0.0–7.9	30.8	24.8–36.8
45–69	481	64.8	60.2–69.5	12.2	9.9–14.5	3.8	0.0–9.3	19.1	17.5–20.8
18–69	**1082**	**49.6**	**46.3–53.0**	**19.8**	**14.9–24.8**	**3.6**	**0.0–8.3**	**26.9**	**23.8–30.0**
Women									
18–44	1019	7.8	1.8–13.7	1.2	0.1–2.3	0.4	0.0–0.9	90.6	86.0–95.3
45–69	504	7.9	4.9–10.9	4.6	2.3–6.9	3.8	1.3–6.2	83.7	79.3–88.1
18–69	**1523**	**7.8**	**2.8–12.8**	**1.8**	**0.4–3.2**	**1.0**	**0.1–1.9**	**89.4**	**86.2–92.6**
Both Sexes									
18–44	1620	28.3	26.7–29.9	14.7	9.0–20.4	2.3	0.0–4.8	54.8	51.2–58.3
45–69	985	52.5	35.3–69.8	10.6	7.0–14.2	3.8	0.0–8.2	33.1	16.5–49.6
18–69	**2605**	**35.0**	**29.8–40.3**	**13.5**	**8.5–18.6**	**2.7**	**0.0–5.7**	**48.7**	**41.4–56.0**

Table 4.3: Current daily smokers among smokers

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	406	63.9	51.9–75.9	52	86.8	67.5–100.0	458	65.8	56.8–74.9
45–69	311	84.1	82.4–85.9	58	63.2	49.2–77.1	369	83.2	82.2–84.3
18–69	**717**	**71.4**	**65.0–77.8**	**110**	**81.5**	**60.5–100.0**	**827**	**72.1**	**67.4–76.9**

Table 4.4: Mean age started smoking among current daily smokers

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18–44	299	16.2	15.3–17.0	30	16.4	14.0–18.8	329	16.2	15.2–17.2
45–69	234	16.4	15.1–17.7	33	25.0	20.7–29.3	267	16.6	15.0–18.2
18–69	**533**	**16.3**	**15.3–17.3**	**63**	**17.6**	**13.8–21.5**	**596**	**16.4**	**15.2–17.6**

Table 4.5: Mean duration of smoking among current daily smokers

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18–44	299	16.8	11.5–22.0	30	15.4	14.2–16.5	329	16.6	11.9–21.3
45–69	234	42.4	39.6–45.2	33	29.8	24.6–35.0	267	42.1	38.9–45.3
18–69	**533**	**28.0**	**20.4–35.7**	**63**	**17.5**	**15.1–19.8**	**596**	**27.2**	**20.5–34.0**

Table 4.6: Manufactured cigarette smokers among daily smokers

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	315	95.4	90.6–100.0	30	98.1	94.3–100.0	345	95.7	90.9–100.0
45–69	260	93.6	83.8–100.0	40	68.5	48.4–88.6	300	92.8	82.1–100.0
18–69	**575**	**94.6**	**88.0–100.0**	**70**	**93.0**	**82.5–100.0**	**645**	**94.5**	**87.7–100.0**

Table 4.7: Manufactured cigarette smokers among current smokers

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	392	96.0	91.1–100.0	50	95.4	88.0–100.0	442	96.0	91.0–100.0
45–69	299	93.8	84.3–100.0	57	68.4	51.2–85.5	356	92.8	82.1–100.0
18–69	**691**	**95.2**	**88.9–100.0**	**107**	**89.3**	**76.4–100.0**	**798**	**94.8**	**88.0–100.0**

Table 4.8: Mean amount of tobacco used by daily smokers by type

Age Group (years)	n	Mean # of manu–factured cig.	95% CI	n	Mean # of hand–rolled cig.	95% CI	n	Mean # of pipes of tobacco	95% CI	n	Mean # of cigars, cheerots, cigarillos	95% CI
Men												
18–44	314	14.6	8.3–20.9	307	0.8	0.0–1.7	311	0.0	0.0–0.1	307	1.1	0.0–2.3
45–69	259	10.8	8.5–13.2	256	6.5	5.1–7.9	250	0.1	0.0–0.2	251	4.0	2.7–5.2
18–69	**573**	**12.9**	**8.9–17.0**	**563**	**3.3**	**2.4–4.3**	**561**	**0.0**	**0.0–0.1**	**558**	**2.3**	**1.9–2.8**
Women												
18–44	30	2.7	1.5–3.9	28	1.8	1.4–2.2	28	0.0	0.0–0.0	29	0.6	0.0–1.9
45–69	39	3.9	2.4–5.4	38	3.3	1.7–4.8	35	0.1	0.0–0.2	37	1.6	0.0–3.2
18–69	**69**	**2.9**	**1.6–4.2**	**66**	**2.0**	**1.7–2.4**	**63**	**0.0**	**0.0–0.0**	**66**	**0.8**	**0.0–2.1**
Both Sexes												
18–44	344	13.2	8.5–18.0	335	0.9	0.2–1.6	339	0.0	0.0–0.0	336	1.0	0.0–2.2
45–69	298	10.6	8.0–13.2	294	6.4	4.9–7.9	285	0.1	0.0–0.2	288	3.9	2.5–5.2
18–69	**642**	**12.1**	**8.6–15.7**	**629**	**3.2**	**2.4–4.1**	**624**	**0.0**	**0.0–0.1**	**624**	**2.2**	**1.9–2.6**

Table 4.9: Mean amount of tobacco used by daily smokers by type

Age Group (years)	n	% Manuf. cigs.	95% CI	% Hand–rolled cigs.	95% CI	% Pipes of tobacco	95% CI	% Cigars, cheroots, cigarillos	95% CI
Men									
18–44	406	95.1	89.2–100.0	9.0	0.0–19.6	1.1	0.0–2.5	9.1	0.0–20.0
45–69	311	93.1	82.5–100.0	88.6	71.3–100.0	2.0	0.0–5.1	35.1	27.7–42.5
18–69	**717**	**94.3**	**87.0–100.0**	**38.6**	**31.7–45.6**	**1.4**	**0.0–3.3**	**18.8**	**16.1–21.5**
Women									
18–44	52	94.2	85.2–100.0	76.0	41.4–100.0	0.7	0.0–2.3	8.3	0.0–21.2
45–69	58	67.3	50.3–84.3	49.2	31.7–66.6	2.8	0.0–6.9	22.8	9.0–36.7
18–69	**110**	**88.1**	**74.2–100.0**	**70.0**	**36.3–100.0**	**1.1**	**0.0–3.0**	**11.6**	**0.0–25.3**
Both Sexes									
18–44	458	95.0	89.0–100.0	14.6	8.6–20.5	1.0	0.0–2.4	9.0	0.0–20.0
45–69	369	92.0	80.2–100.0	86.9	67.9–100.0	2.0	0.0–5.0	34.6	26.7–42.5
18–69	**827**	**93.9**	**86.1–100.0**	**40.8**	**32.5–49.1**	**1.4**	**0.0–3.2**	**18.3**	**15.2–21.4**

Table 4.10: Percentage of daily smokers smoking given quantities of manufactured or hand–rolled cigarettes per day

Age Group (years)	n	% <5 Cigs.	95% CI	% 5–9 Cigs.	95% CI	% 10–14 Cigs.	95% CI	% 15–24 Cigs.	95% CI	% ≥ 25 Cigs.	95% CI
Men											
18–44	283	11.5	0.0–23.9	13.3	0.0–27.6	10.5	0.0–21.7	43.4	19.4–67.5	21.2	8.7–33.8
45–69	235	5.2	0.0–13.3	7.2	0.0–18.3	30.2	26.1–34.3	19.1	17.7–20.6	38.3	23.3–53.3
18–69	**518**	**8.7**	**0.0–19.8**	**10.6**	**0.0–24.1**	**19.3**	**16.8–21.8**	**32.6**	**22.2–42.9**	**28.9**	**13.1–44.6**
Women											
18–44	27	91.3	75.7–100.0	5.2	0.0–14.9	1.4	0.0–4.3	2.1	0.0–6.5	0.0	0.0–0.0
45–69	37	27.4	10.3–44.5	48.2	28.4–68.0	17.2	2.1–32.2	4.7	0.0–10.1	2.6	0.0–7.3
18–69	**64**	**80.8**	**52.5–100.0**	**12.3**	**0.0–30.6**	**4.0**	**0.0–10.4**	**2.5**	**0.0–7.0**	**0.4**	**0.0–1.5**
Both Sexes											
18–44	310	20.5	15.6–25.4	12.4	0.0–26.5	9.5	0.0–20.2	38.8	20.5–57.1	18.9	9.0–28.7
45–69	272	5.8	0.0–14.7	8.4	0.0–21.0	29.8	25.2–34.4	18.7	17.1–20.3	37.2	21.1–53.4
18–69	**582**	**14.3**	**6.7–21.8**	**10.7**	**0.0–24.4**	**18.1**	**15.3–20.9**	**30.2**	**21.3–39.2**	**26.7**	**12.5–40.9**

Table 4.11: Former daily smokers among all respondents

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	601	4.0	0.0–8.9	1019	0.1	0.0–0.2	1620	2.5	0.0–5.1
45–69	481	4.1	0.0–10.1	504	2.0	0.8–3.2	985	3.7	0.0–7.8
18–69	**1082**	**4.1**	**0.0–9.3**	**1523**	**0.4**	**0.0–0.8**	**2605**	**2.8**	**0.0–5.8**

Table 4.12: Former daily smokers among ever daily smokers

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	384	8.8	0.6–17.0	31	1.2	0.0–3.7	415	8.0	0.0–16.0
45–69	339	6.0	0.0–14.5	52	19.8	8.6–31.1	391	6.5	0.0–15.4
18–69	**723**	**7.6**	**0.0–16.1**	**83**	**5.0**	**0.0–12.1**	**806**	**7.4**	**0.0–15.8**

Table 4.13: Mean years since cessation

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18–44	55	7.5	5.5–9.4	6	5.9	2.9–9.0	61	7.4	5.5–9.3
45–69	60	23.6	18.5–28.6	18	22.7	12.0–33.4	78	23.4	18.6–28.1
18–69	**115**	**13.0**	**9.7–16.3**	**24**	**17.6**	**9.0–26.1**	**139**	**13.5**	**10.3–16.7**

Table 4.14: Current smokers who have tried to stop smoking

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	406	25.7	16.2–35.1	52	85.1	63.3–100.0	458	30.7	24.6–36.7
45–69	311	8.2	0.0–20.6	58	41.2	27.3–55.1	369	9.6	0.0–23.5
18–69	**717**	**19.1**	**7.3–31.0**	**110**	**75.2**	**47.3–100.0**	**827**	**23.0**	**13.1–33.0**

Table 4.15: Current smokers who have been advised by doctor to stop smoking

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	296	20.3	1.4–39.3	40	12.0	0.0–31.3	336	19.3	0.0–38.6
45–69	236	24.9	15.6–34.1	49	65.0	49.8–80.2	285	26.7	15.2–38.2
18–69	**532**	**22.4**	**8.7–36.1**	**89**	**23.3**	**0.0–51.8**	**621**	**22.5**	**7.6–37.4**

Table 4.16: Current users of smokeless tobacco

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	601	3.8	0.0–8.4	1020	20.4	15.1–25.7	1621	10.4	4.4–16.4
45–69	481	40.5	32.9–48.1	504	57.5	51.7–63.4	985	44.2	41.4–46.9
18–69	**1082**	**16.1**	**14.0–18.2**	**1524**	**26.8**	**17.9–35.6**	**2606**	**19.8**	**16.3–23.4**

Table 4.17: Smokeless tobacco use

Age Group (years)	n	Current user				Non user			
		% Daily	95% CI	% Non–daily	95% CI	% Past user	95% CI	% Never used	95% CI
Men									
18–44	601	2.2	0.0–4.9	1.6	0.0–3.6	7.5	2.7–12.2	88.7	87.2–90.3
45–69	481	37.3	25.4–49.3	3.2	0.0–7.8	1.0	0.0–2.4	58.6	52.3–64.8
18–69	**1082**	**14.0**	**9.6–18.4**	**2.1**	**0.0–4.8**	**5.3**	**3.0–7.6**	**78.6**	**74.4–82.8**
Women									
18–44	1020	11.1	7.7–14.6	9.2	1.2–17.2	10.5	0.5–20.4	69.2	63.4–75.0
45–69	504	24.2	19.2–29.3	33.3	28.5–38.2	3.6	1.8–5.4	38.9	33.2–44.6
18–69	**1524**	**13.4**	**11.4–15.4**	**13.4**	**3.8–23.0**	**9.3**	**0.2–18.3**	**63.9**	**61.1–66.8**
Both Sexes									
18–44	1621	5.8	4.4–7.2	4.6	0.0–9.5	8.7	2.1–15.3	80.9	79.2–82.6
45–69	985	34.5	21.9–47.1	9.7	0.0–20.6	1.5	0.0–3.3	54.3	52.2–56.4
18–69	**2606**	**13.8**	**10.4–17.2**	**6.0**	**0.0–12.5**	**6.7**	**2.5–10.8**	**73.5**	**71.6–75.3**

Table 4.18: Former daily smokeless tobacco users among all respondents

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	601	1.1	0.0–2.4	1020	13.3	5.7–20.9	1621	5.9	4.5–7.4
45–69	481	2.3	0.0–5.7	503	17.3	13.3–21.3	984	5.5	0.0–11.8
18–69	**1082**	**1.5**	**0.0–3.4**	**1523**	**14.0**	**8.1–19.8**	**2605**	**5.8**	**4.9–6.8**

Table 4.19: Former daily smokeless tobacco users among ever daily users

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	66	32.4	18.8–46.0	186	54.4	46.2–62.5	252	50.7	39.8–61.6
45–69	120	5.8	0.0–15.6	221	41.6	33.3–49.9	341	13.8	0.0–31.6
18–69	**186**	**9.5**	**0.0–23.3**	**407**	**51.0**	**41.7–60.4**	**593**	**29.7**	**21.8–37.6**

Table 4.20: Mean times per day smokeless tobacco used by daily smokeless tobacco users by type

Age Group (years)	n	Chewing tobacco	95% CI	n	Betel, quid	95% CI
Men						
18–44	40	3.1	0.0–6.7	41	2.5	1.5–3.4
45–69	84	0.2	0.0–0.4	84	1.0	0.2–1.8
18–69	**124**	**0.5**	**0.0–1.3**	**125**	**1.2**	**0.2–2.1**
Women						
18–44	100	0.2	0.0–0.6	103	1.9	0.0–4.1
45–69	131	1.9	1.4–2.4	130	5.7	4.8–6.6
18–69	**231**	**0.8**	**0.1–1.4**	**233**	**3.1**	**0.6–5.6**
Both Sexes						
18–44	140	0.9	0.0–2.1	144	2.0	0.2–3.9
45–69	215	0.4	0.0–1.0	214	1.7	0.0–3.4
18–69	**355**	**0.6**	**0.0–1.3**	**358**	**1.8**	**0.0–3.6**

Table 4.21: Percentage of current users of smokeless tobacco using each of the following products

Age Group (years)	n	% Chewing tobacco	95% CI	% Betel, quid	95% CI
Men					
18–44	72	27.5	12.4–42.7	84.5	69.9–99.1
45–69	135	4.7	0.0–12.6	40.0	21.3–58.7
18–69	**207**	**8.3**	**0.0–20.0**	**46.9**	**21.4–72.4**
Women					
18–44	295	8.2	2.2–14.1	62.7	23.8–100.0
45–69	291	36.6	29.9–43.4	90.9	86.6–95.2
18–69	**586**	**18.7**	**10.6–26.9**	**73.1**	**44.7–100.0**
Both Sexes					
18–44	367	12.4	5.1–19.7	67.4	34.6–100.0
45–69	426	13.7	0.0–29.7	54.3	24.5–84.1
18–69	**793**	**13.2**	**1.1–25.3**	**59.3**	**26.3–92.2**

Table 4.22: Current tobacco users

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	601	66.6	63.2–70.1	1019	21.9	15.4–28.3	1620	48.7	46.6–50.8
45–69	481	78.5	73.8–83.2	504	62.9	57.2–68.5	985	75.1	67.6–82.7
18–69	**1082**	**70.6**	**68.9–72.4**	**1523**	**28.9**	**18.6–39.2**	**2605**	**56.1**	**53.3–58.8**

Table 4.23: Daily tobacco users

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	601	42.3	33.0–51.5	1019	12.1	9.3–14.8	1620	30.2	27.5–32.9
45–69	481	65.6	62.1–69.2	504	29.4	24.2–34.7	985	57.8	46.4–69.2
18–69	**1082**	**50.1**	**46.2–54.1**	**1523**	**15.1**	**13.3–16.9**	**2605**	**37.9**	**35.4–40.4**

Table 4.24: Exposed to second–hand smoke in home and workplace during the past 30 days

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Home									
18–44	601	94.1	87.1–100.0	1020	88.9	79.1–98.6	1621	92.0	83.6–100.0
45–69	481	95.7	89.4–100.0	503	80.3	75.9–84.6	984	92.3	83.7–100.0
18–69	**1082**	**94.6**	**87.8–100.0**	**1523**	**87.4**	**78.3–96.5**	**2605**	**92.1**	**83.6–100.0**
Workplace									
18–44	450	32.7	0.0–69.6	779	76.5	64.3–88.8	1229	50.9	31.3–70.5
45–69	353	48.6	38.0–59.2	368	63.6	57.4–69.8	721	51.3	39.1–63.5
18–69	**803**	**38.9**	**13.9–63.9**	**1147**	**74.4**	**62.6–86.2**	**1950**	**51.0**	**33.8–68.2**

Table 4.25: Percentage of respondents noticed information in media about dangers of smoking or that encourages quitting during the past 30 days

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Newspapers or magazines									
18–44	531	22.9	8.8–37.0	925	17.0	1.6–32.4	1456	20.5	6.5–34.6
45–69	403	30.2	26.4–34.0	412	13.7	9.3–18.1	815	27.1	20.2–33.9
18–69	**934**	**25.4**	**17.6–33.1**	**1337**	**16.5**	**3.8–29.2**	**2271**	**22.3**	**14.0–30.6**

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
On television									
18–44	542	25.6	8.4–42.9	949	44.9	35.0–54.8	1491	33.3	25.0–41.7
45–69	421	32.0	30.3–33.8	435	21.6	16.0–27.1	856	30.0	26.3–33.7
18–69	**963**	**27.8**	**16.9–38.6**	**1384**	**41.3**	**30.1–52.4**	**2347**	**32.4**	**27.0–37.8**
On the radio									
18–44	544	17.1	0.0–37.9	955	50.8	33.3–68.2	1499	30.6	22.2–39.0
45–69	427	41.0	39.1–42.9	432	31.3	25.1–37.6	859	39.1	35.4–42.8
18–69	**971**	**25.2**	**13.1–37.2**	**1387**	**47.7**	**30.8–64.7**	**2358**	**32.9**	**27.7–38.1**

Table 4.26: Percentage of respondents noticed advertisements or signs promoting cigarettes in stores

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	532	31.3	28.1–34.5	903	22.7	12.7–32.6	1435	27.9	24.0–31.8
45–69	416	29.1	23.8–34.4	409	12.7	8.4–16.9	825	26.0	17.9–34.0
18–69	**948**	**30.6**	**28.6–32.5**	**1312**	**21.1**	**11.5–30.7**	**2260**	**27.4**	**22.5–32.2**

Table 4.27: Percentage of all respondents who noticed cigarette promotions during the past 30 days

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Got free samples of cigarettes									
18–44	525	47.3	32.0–62.6	898	23.8	14.9–32.8	1423	38.0	23.5–52.5
45–69	406	4.0	0.0–10.0	414	10.0	6.2–13.7	820	5.1	0.0–11.5
18–69	**931**	**32.7**	**27.0–38.5**	**1312**	**21.7**	**12.5–30.9**	**2243**	**29.0**	**20.8–37.1**
Noticed sale prices on cigarettes									
18–44	525	5.4	0.0–12.1	896	20.5	8.5–32.4	1421	11.3	10.0–12.6
45–69	406	3.0	0.0–7.6	407	8.6	5.1–12.1	813	4.1	0.0–9.1
18–69	**931**	**4.6**	**0.0–10.7**	**1303**	**18.6**	**7.1–30.2**	**2234**	**9.3**	**7.2–11.4**
Noticed coupons for cigarettes									
18–44	522	22.9	14.4–31.5	897	15.4	5.6–25.2	1419	20.0	10.4–29.5
45–69	404	26.9	18.2–35.5	408	5.5	2.8–8.2	812	22.8	10.9–34.7
18–69	**926**	**24.3**	**15.5–33.0**	**1305**	**13.9**	**4.4–23.3**	**2231**	**20.7**	**10.5–31.0**
Noticed free gifts or special discount offers on other products when buying cigarettes									
18–44	518	1.3	0.0–3.1	881	1.3	0.0–2.8	1399	1.3	0.0–2.9
45–69	395	0.5	0.0–1.5	399	1.0	0.0–1.9	794	0.6	0.0–1.5
18–69	**913**	**1.1**	**0.0–2.5**	**1280**	**1.2**	**0.0–2.5**	**2193**	**1.1**	**0.0–2.5**

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Noticed clothing or other items with a cigarette brand name or logo									
18–44	525	6.5	0.0–14.7	881	2.5	0.0–5.0	1406	4.9	0.0–10.6
45–69	400	2.3	0.0–5.8	407	7.0	3.3–10.7	807	3.2	0.0–7.2
18–69	**925**	**5.1**	**0.0–11.9**	**1288**	**3.2**	**0.5–6.0**	**2213**	**4.5**	**0.0–9.6**
Noticed cigarette promotions in the mail									
18–44	509	0.7	0.0–1.8	863	0.9	0.0–1.9	1372	0.8	0.0–1.8
45–69	389	0.3	0.0–0.9	403	0.5	0.0–1.3	792	0.4	0.0–0.9
18–69	**898**	**0.6**	**0.0–1.5**	**1266**	**0.8**	**0.0–1.7**	**2164**	**0.7**	**0.0–1.5**

Table 4.28: Percentage of current smokers who noticed health warnings on cigarette packages during the past 30 days

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	356	49.0	42.5–55.6	46	6.2	0.0–16.1	402	45.4	40.7–50.1
45–69	249	18.0	14.5–21.6	49	27.7	11.7–43.7	298	18.4	14.4–22.4
18–69	**605**	**37.5**	**35.1–39.9**	**95**	**10.4**	**0.0–23.7**	**700**	**35.7**	**33.2–38.2**

Table 4.29: Percentage of current smokers who saw health warnings on cigarette packages that thought of quitting

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	140	18.6	0.0–44.4	11	70.6	37.4–100.0	151	19.2	0.0–45.5
45–69	61	13.1	0.0–32.4	11	62.4	23.5–100.0	72	15.8	0.0–37.6
18–69	**201**	**17.6**	**0.0–42.1**	**22**	**66.3**	**44.7–88.0**	**223**	**18.6**	**0.0–43.8**

Table 4.30: Mean average price paid for 20 manufactured cigarettes in USD

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18–44	307	5.9	3.7–8.1	42	2.6	1.5–3.8	349	5.6	3.8–7.5
45–69	213	2.8	2.6–2.9	39	3.7	1.6–5.8	252	2.8	2.6–2.9
18–69	**520**	**4.8**	**3.6–6.1**	**81**	**2.8**	**1.6–4.0**	**601**	**4.7**	**3.6–5.8**

Alcohol consumption

Table 5.1: Alcohol consumption status of respondents by age and sex

Age Group (years)	n	% Current drinker (past 30 days)	95% CI	% Drank in past 12 months, not current	95% CI	% Past 12 months abstainer	95% CI	% Lifetime abstainer	95% CI
Men									
18–44	601	35.5	33.1–37.9	9.0	0.0–19.7	1.9	0.0–4.3	53.6	39.5–67.7
45–69	479	57.3	42.2–72.5	14.7	13.1–16.2	16.8	14.3–19.2	11.3	0.0–27.4
18–69	**1080**	**42.8**	**37.1–48.6**	**10.9**	**3.7–18.1**	**6.9**	**6.2–7.6**	**39.4**	**37.2–41.6**
Women									
18–44	1018	1.6	0.1–3.1	2.2	0.2–4.3	1.7	0.1–3.4	94.5	89.6–99.4
45–69	503	3.9	2.1–5.8	7.5	4.6–10.3	8.0	4.6–11.5	80.6	75.8–85.4
18–69	**1521**	**2.0**	**0.5–3.6**	**3.1**	**0.7–5.5**	**2.8**	**0.6–5.1**	**92.1**	**86.3–97.9**
Both Sexes									
18–44	1619	22.0	19.9–24.0	6.3	0.0–12.9	1.8	0.0–3.9	69.9	62.6–77.3
45–69	982	45.8	21.1–70.6	13.1	11.9–14.3	14.9	10.8–18.9	26.2	0.0–55.6
18–69	**2601**	**28.6**	**20.3–36.9**	**8.2**	**3.6–12.7**	**5.5**	**4.8–6.1**	**57.7**	**53.7–61.8**

Table 5.2: Frequency of alcohol consumption in the past 12 months

Age Group (years)	n	% Daily	95% CI	% 5–6 days/ week	95% CI	% 3–4 days/ week	95% CI	% 1–2 days/ week	95% CI	% 1–3 days/ month	95% CI	% < once a month	95% CI
Men													
18–44	332	0.1	0.0–0.4	0.8	0.0–1.8	46.7	0.0–95.6	12.8	0.6–24.9	17.1	1.0–33.3	22.4	1.3–43.5
45–69	223	0.2	0.0–0.5	46.7	30.2–63.2	0.9	0.0–2.6	16.8	15.1–18.6	19.8	13.4–26.3	15.5	8.4–22.7
18–69	**555**	**0.2**	**0.0–0.4**	**21.4**	**6.3–36.6**	**26.1**	**8.1–44.2**	**14.6**	**7.9–21.2**	**18.3**	**7.1–29.6**	**19.3**	**3.4–35.3**
Women													
18–44	71	1.4	0.0–4.2	0.0	–	0.5	0.0–1.4	18.4	4.4–32.3	30.7	4.4–32.3	49.0	35.9–62.0
45–69	57	0.0	–	0.0	–	0.0	–	11.8	1.1–22.3	35.1	20.3–49.7	53.2	36.3–69.9
18–69	**128**	**0.9**	**0.0–2.6**	**0.0**	**–**	**0.3**	**0.0–0.9**	**15.9**	**6.4–25.3**	**32.4**	**21.7–42.9**	**50.6**	**38.9–62.1**
Both Sexes													
18–44	403	0.2	0.0–0.6	0.8	0.0–1.6	44.2	0.0–92.5	13.1	0.0–92.5	17.9	1.9–33.7	23.9	2.7–45.0
45–69	280	0.2	0.0–0.5	44.8	26.0–63.6	0.9	0.0–2.40	16.6	15.1–18.1	20.5	13.2–27.6	17.1	7.8–26.3
18–69	**683**	**0.2**	**0.0–0.5**	**20.4**	**4.8–36.0**	**24.9**	**6.2–43.5**	**14.6**	**8.2–21.1**	**19.0**	**7.5–30.5**	**20.8**	**3.9–37.7**

Table 5.3: Frequency of alcohol consumption in the past 7 days

Age Group (years)	n	% Daily	95% CI	% 5–6 days	95% CI	% 3–4 days	95% CI	% 1–2 days	95% CI	% 0 days	95% CI
Men											
18–44	163	0.9	0.0–2.3	42.2	11.3–73.2	28.5	21.7–35.2	26.2	0.0–59.6	2.2	0.0–5.3
45–69	106	43.0	34.0–52.0	0.1	0.0–0.5	2.5	0.0–7.0	53.5	50.4–56.7	0.8	0.0–2.4
18–69	**269**	**20.4**	**11.4–29.3**	**22.8**	**11.7–33.9**	**16.5**	**13.9–19.0**	**38.9**	**23.1–54.6**	**1.5**	**0.0–4.0**
Women											
18–44	21	8.7	0.0–20.7	3.1	0.0–9.4	19.2	0.0–43.6	55.1	31.5–78.6	13.9	0.0–28.8
45–69	16	0.0	–	0.0	–	3.8	0.0–11.7	90.4	76.4–100.0	5.8	0.0–17.5
18–69	**37**	**5.6**	**0.0–13.5**	**2.0**	**0.0–6.1**	**13.8**	**0.0–30.7**	**67.6**	**49.5–85.8**	**11.0**	**0.6–21.5**
Both Sexes											
18–44	184	1.1	0.0–2.7	41.2	9.8–72.6	28.2	21.4–35.1	27.0	0.0–60.4	2.5	0.0–5.9
45–69	122	42.3	32.1–52.4	0.1	0.0–0.5	2.5	0.0–7.0	54.2	50.1–58.3	0.9	0.0–2.6
18–69	**306**	**20.1**	**10.8–29.3**	**22.3**	**10.8–33.8**	**16.4**	**13.9–18.9**	**39.5**	**23.1–55.9**	**1.8**	**0.0–4.5**

Table 5.4: Proportion of drinkers by amount and sex among current (past 30 days) drinkers

Age Group (years)	n	% high–end	95% CI	% intermediate	95% CI	% lower–end	95% CI
Men		**(≥60g)**		**(40–59.9g)**		**(<40g)**	
18–44	186	0.5	0.0–1.4	2.9	0.0–7.4	96.6	91.6–100.0
45–69	132	54.0	40.9–67.1	1.2	0.0–3.3	44.9	33.7–56.0
18–69	**318**	**25.1**	**12.6–37.6**	**2.1**	**0.0–5.5**	**72.8**	**63.3–82.4**
Women		**(≥40g)**		**(20–39.9g)**		**(<20g)**	
18–44	24	0.0	0.0–0.0	2.6	0.0–7.9	97.4	92.1–100.0
45–69	18	3.4	0.0–10.3	0.0	–	96.6	89.7–100.0
18–69	**42**	**1.2**	**0.0–3.7**	**1.7**	**0.0–5.1**	**97.1**	**92.9–100.0**
Both Sexes							
18–44	210	0.5	0.0–1.3	2.9	0.0–7.3	96.6	91.7–100.0
45–69	150	53.1	38.7–67.5	1.1	0.0–3.2	45.8	33.3–58.3
18–69	**360**	**24.5**	**11.6–37.5**	**2.1**	**0.0–5.4**	**73.4**	**63.2–83.5**

Table 5.5: Drinking level of pure alcohol among all respondents on average per occasion

Age Group (years)	n	% high–end	95% CI	% intermediate	95% CI	% lower–end	95% CI
Men		**(≥60g)**		**(40–59.9g)**		**(<40g)**	
18–44	568	0.2	0.0–0.5	1.0	0.0–2.5	33.0	30.3–35.6
45–69	463	30.7	14.7–46.7	0.7	0.0–1.7	25.5	24.0–27.0
18–69	**1031**	**10.5**	**3.5–17.5**	**0.9**	**0.0–2.2**	**30.5**	**28.7–32.2**
Women		**(≥40g)**		**(20–39.9g)**		**(<20g)**	
18–44	1014	0.0	0.0–0.0	0.0	0.0–0.1	1.4	0.0–2.7
45–69	501	0.1	0.0–0.4	0.0	0.0–0.0	3.5	1.8–5.2
18–69	**1515**	**0.0**	**0.0–0.1**	**0.0**	**0.0–0.1**	**1.7**	**0.4–3.1**
Both Sexes							
18–44	1582	0.1	0.0–0.3	0.6	0.0–1.5	20.2	16.7–23.7
45–69	964	24.1	4.1–44.1	0.5	0.0–1.2	20.8	14.6–26.9
18–69	**2546**	**6.8**	**0.9–12.7**	**0.6**	**0.0–1.3**	**20.4**	**16.2–24.5**

Table 5.6: Percentage of consumption of unrecorded alcohol

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	218	79.8	56.3–100.0	28	38.3	17.3–59.2	246	78.6	54.5–100.0
45–69	143	38.8	37.2–40.3	20	24.0	0.3–47.7	163	38.5	36.9–40.0
18–69	**361**	**61.4**	**54.3–68.5**	**48**	**33.5**	**16.7–50.2**	**409**	**60.7**	**52.9–68.6**

Table 5.7: Percentage of unrecorded alcohol from all alcohol consumed during past 7 days

Age Group (years)	Men		Women		Both Sexes	
	n	%	n	%	n	%
18–44	94	34.7	9	48.8	103	34.8
45–69	63	8.7	8	21.1	71	8.8
18–69	**157**	**18.9**	**17**	**41.6**	**174**	**19.0**

Table 5.8: Mean number of standard drinks and standard drinks of unrecorded alcohol on average per day in the past 7 days among current drinkers

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
Standard drinks									
18–44	163	1.1	0.7–1.4	21	0.4	0.3–0.6	184	1.0	0.7–1.4
45–69	106	1.9	1.6–2.1	16	0.4	0.2–0.6	122	1.8	1.5–2.2
18–69	**269**	**1.4**	**1.0–1.8**	**37**	**0.4**	**0.3–0.6**	**306**	**1.4**	**1.0–1.8**
Standard drinks of unrecorded alcohol									
18–44	83	0.5	0.5–0.5	7	0.4	0.2–0.5	90	0.5	0.4–0.5
45–69	42	0.4	0.4–0.5	4	0.2	0.1–0.3	46	0.4	0.4–0.5
18–69	**125**	**0.5**	**0.4–0.5**	**11**	**0.3**	**0.2–0.4**	**136**	**0.5**	**0.4–0.5**

Table 5.9: Unrecorded alcohol consumption during the past 7 days by type: Both Sexes

Age Group (years)	Both Sexes					
	n	% home–brewed spirits	% home–brewed beer/wine	% brought over border	% surrogate alcohol	% other
18–44	52	76.4	22.5	1.1	0.0	0.0
45–69	23	82.3	17.3	0.2	0.0	0.0
18–69	**75**	**78.0**	**21.0**	**0.8**	**0.1**	**0.0**

Table 5.10: 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
18–44	189	3.9	3.3–4.5	26	2.2	1.6–2.8	215	3.8	3.2–4.5
45–69	137	4.7	4.4–5.1	19	2.2	0.9–3.4	156	4.7	4.3–5.1
18–69	**326**	**4.3**	**3.7–4.9**	**45**	**2.2**	**1.6–2.8**	**371**	**4.2**	**3.6–4.9**

Table 5.11: 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
18–44	192	4.5	2.5–6.5	25	3.4	1.3–5.4	217	4.5	2.6–6.4
45–69	134	28.2	22.4–34.0	18	2.6	0.6–4.6	152	27.7	21.3–34.2
18–69	**326**	**15.4**	**10.6–20.1**	**43**	**3.1**	**1.6–4.6**	**369**	**15.1**	**10.0–20.1**

Table 5.12: Mean maximum number of standard drinks consumed on one occasion in the past 30 days

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18–44	173	4.7	3.9–5.4	23	3.4	1.9–4.9	196	4.6	3.9–5.3
45–69	127	4.9	4.7–5.1	17	3.9	1.0–6.8	144	4.9	4.7–5.1
18–69	**300**	**4.8**	**4.4–5.2**	**40**	**3.6**	**2.3–4.9**	**340**	**4.7**	**4.4–5.1**

Table 5.13: 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	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	601	10.1	0.0–22.0	1018	0.8	0.0–1.7	1619	6.4	0.0–13.1
45–69	479	44.9	30.5–59.2	503	2.1	0.8–3.5	982	35.6	14.1–57.2
18–69	**1080**	**21.8**	**20.1–23.4**	**1521**	**1.0**	**0.1–1.9**	**2601**	**14.5**	**12.7–16.4**

Table 5.14: Mean number of times with six or more drinks during a single occasion in the past 30 days among current drinkers

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18–44	169	1.1	0.0–2.5	19	1.3	0.6–2.0	188	1.1	0.0–2.5
45–69	122	9.4	7.6–11.2	15	2.7	0.3–5.0	137	9.3	7.4–11.2
18–69	**291**	**5.0**	**3.9–6.1**	**34**	**1.8**	**0.8–2.7**	**325**	**4.9**	**3.8–6.1**

Table 5.15: Percentage of former drinkers (those who did not drink during the past 12 months) who stopped drinking due to health reasons

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	28	33.4	12.9–53.9	29	23.7	9.7–37.6	57	29.8	14.4–45.1
45–69	56	14.9	0.0–39.2	37	39.7	19.7–59.7	93	17.8	0.0–43.1
18–69	**84**	**18.3**	**0.0–42.9**	**66**	**31.5**	**17.9–45.2**	**150**	**20.7**	**0.0–43.3**

Dietary habits

Table 6.1: Mean number of days fruits and vegetables consumed in a typical week

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
Fruit									
18–44	552	2.1	1.9–2.3	951	2.8	1.7–3.9	1503	2.4	1.8–2.9
45–69	442	2.3	1.9–2.6	466	1.7	1.5–1.9	908	2.2	1.7–2.6
18–69	**994**	**2.2**	**1.9–2.5**	**1417**	**2.6**	**1.5–3.7**	**2411**	**2.3**	**1.8–2.8**
Vegetables									
18–44	576	6.6	6.3–7.0	985	6.7	6.4–7.0	1561	6.6	6.3–7.0
45–69	462	6.8	6.5–7.1	488	6.3	6.0–6.5	950	6.7	6.3–7.1
18–69	**1038**	**6.7**	**6.3–7.1**	**1473**	**6.6**	**6.3–6.9**	**2511**	**6.7**	**6.3–7.0**

Table 6.2: Mean number of servings of fruit, vegetable and combined fruit and vegetable serving on average per day

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
Fruit									
18–44	529	1.1	0.8–1.5	914	0.9	0.6–1.3	1443	1.0	0.7–1.4
45–69	422	0.7	0.6–0.8	443	0.5	0.4–0.6	865	0.7	0.6–0.8
18–69	**951**	**1.0**	**0.7–1.2**	**1357**	**0.9**	**0.5–1.2**	**2308**	**0.9**	**0.6–1.2**
Vegetable									
18–44	530	7.3	3.3–11.2	911	2.8	2.5–3.1	1441	5.3	3.0–7.6
45–69	425	4.8	3.9–5.7	456	2.8	2.4–3.1	881	4.4	3.2–5.6
18–69	**955**	**6.3**	**3.8–8.9**	**1367**	**2.8**	**2.5–3.0**	**2322**	**5.0**	**3.1–7.0**
Combined fruit and vegetable									
18–44	556	6.9	4.2–9.6	951	3.5	3.3–3.7	1507	5.6	3.7–7.5
45–69	443	5.5	4.4–6.6	473	3.1	2.8–3.5	916	5.0	3.6–6.4
18–69	**999**	**6.4**	**4.4–8.5**	**1424**	**3.5**	**3.3–3.7**	**2423**	**5.4**	**3.7–7.2**

Table 6.3: Number of servings of fruit and/or vegetables on average per day

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
Men									
18–44	556	3.3	0.0–7.6	44.4	39.8–48.9	22.4	20.1–24.7	29.9	22.7–37.1
45–69	443	2.1	0.0–5.3	31.6	23.4–39.8	38.3	32.9–43.7	28.1	22.0–34.1
18–69	**999**	**2.9**	**0.0–6.8**	**40.1**	**33.9–46.3**	**27.7**	**24.1–31.3**	**29.3**	**22.6–35.9**
Females									
18–44	951	3.9	0.1–7.7	33.8	23.1–44.4	53.7	32.1–75.2	8.7	0.7–16.7
45–69	473	7.6	4.0–11.2	52.9	46.5–59.4	25.0	19.1–31.0	14.4	9.4–19.4
18–69	**1424**	**4.5**	**0.8–8.2**	**37.0**	**25.7–48.3**	**48.9**	**27.3–70.4**	**9.6**	**2.2–17.1**
Both Sexes									
18–44	1507	3.6	0.0–7.6	40.2	34.3–46.1	34.8	27.8–41.7	21.5	18.2–24.8
45–69	916	3.2	0.0–7.2	36.0	24.3–47.8	35.5	27.9–43.1	25.2	17.0–33.4
18–69	**2423**	**3.5**	**0.0–7.4**	**39.0**	**31.6–46.5**	**35.0**	**27.9–42.0**	**22.5**	**18.0–27.0**

Table 6.4: Less than five servings of fruit and/or vegetables on average per day

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	556	70.1	62.9–77.3	951	91.3	83.3–99.3	1507	78.5	75.2–81.8
45–69	443	71.9	65.9–78.0	473	85.6	80.6–90.6	916	74.8	66.6–83.0
18–69	**999**	**70.7**	**64.1–77.4**	**1424**	**90.4**	**82.9–97.8**	**2423**	**77.5**	**73.0–82.0**

Dietary salt

Table 7.1: Salt consumption habits

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Add salt always or often before eating or when eating									
18–44	601	74.2	63.8–84.7	1017	84.0	78.4–89.6	1618	78.1	69.0–87.3
45–69	478	75.7	72.7–78.7	501	84.6	79.7–89.6	979	77.7	73.0–82.3
18–69	**1079**	**74.7**	**67.0–82.5**	**1518**	**84.1**	**79.2–89.0**	**2597**	**78.0**	**70.2–85.8**
Add salt always or often when cooking or preparing food at home									
18–44	601	67.0	63.0–70.9	1017	70.8	66.3–75.4	1618	68.5	64.3–72.8
45–69	479	68.7	66.7–70.8	501	68.8	62.4–75.2	980	68.8	66.3–71.2
18–69	**1080**	**67.6**	**64.5–70.6**	**1518**	**70.5**	**66.5–74.5**	**2598**	**68.6**	**65.1–72.1**
Always or often consume processed food high in salt									
18–44	597	22.4	13.4–31.3	1011	7.2	0.7–13.8	1608	16.3	12.0–20.6
45–69	476	2.8	0.0–7.0	496	7.9	5.0–10.9	972	3.9	0.0–8.5
18–69	**1073**	**15.8**	**12.2–19.4**	**1507**	**7.3**	**1.8–12.9**	**2580**	**12.9**	**10.9–14.8**

Table 7.2: Percentage of people who think they consume far too much or too much salt

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	564	25.8	20.4–31.1	973	8.7	0.7–16.6	1537	19.0	16.6–21.3
45–69	448	5.4	0.0–13.2	480	18.7	13.1–24.2	928	8.3	0.0–17.8
18–69	**1012**	**19.3**	**17.4–21.1**	**1453**	**10.4**	**2.4–18.3**	**2465**	**16.1**	**13.7–18.6**

Table 7.3: Self–reported quantity of salt consumed

Age Group (years)	n	% Far too much	95% CI	% Too much	95% CI	% Just the right amount	95% CI	% Too little	95% CI	% Far too little	95% CI
Men											
18–44	564	1.3	0.0–3.1	24.5	17.8–31.2	66.5	61.3–71.6	7.4	0.0–16.5	0.3	0.0–0.8
45–69	448	0.6	0.0–1.4	4.8	0.0–11.9	63.5	61.0–66.0	30.9	24.4–37.3	0.2	0.0–0.6
18–69	**1012**	**1.1**	**0.0–2.6**	**18.2**	**16.1–20.3**	**65.5**	**61.5–69.5**	**14.9**	**11.7–18.1**	**0.3**	**0.0–0.7**
Women											
18–44	973	1.8	0.0–4.0	6.8	0.5–13.1	79.2	60.8–97.7	11.7	1.2–22.3	0.4	0.0–0.8
45–69	480	1.9	0.5–3.2	16.8	11.3–22.3	59.2	52.1–66.4	20.6	15.5–25.7	1.5	0.1–2.9
18–69	**1453**	**1.8**	**0.1–3.6**	**8.5**	**1.9–15.1**	**75.9**	**58.0–93.7**	**13.2**	**3.3–23.1**	**0.6**	**0.0–1.2**

Age Group (years)	n	% Far too much	95% CI	% Too much	95% CI	% Just the right amount	95% CI	% Too little	95% CI	% Far too little	95% CI
Both Sexes											
18–44	1537	1.5	0.0–3.4	17.5	14.1–20.8	71.5	62.3–80.8	9.1	0.0–19.0	0.3	0.0–0.8
45–69	928	0.8	0.0–1.9	7.5	0.0–16.0	62.6	59.1–66.0	28.6	21.0–36.2	0.5	0.0–1.2
18–69	**2465**	**1.3**	**0.0–3.0**	**14.8**	**13.1–16.5**	**69.1**	**61.7–76.5**	**14.3**	**9.1–19.6**	**0.4**	**0.0–0.9**

Table 7.4: Percentage of respondents who agree with the importance of lowering salt in diet

Age Group (years)	n	% Very important	95% CI	% Somewhat important	95% CI	% Not at all important	95% CI
Men							
18–44	421	38.4	4.9–71.9	8.0	0.0–17.3	53.7	11.3–96.1
45–69	322	60.2	45.3–75.1	39.3	23.6–54.9	0.6	0.0–1.5
18–69	**743**	**45.6**	**19.5–71.6**	**18.3**	**16.1–20.4**	**36.2**	**11.2–61.1**
Women							
18–44	742	48.1	14.2–82.1	27.4	17.8–36.9	24.5	0.0–49.1
45–69	337	76.2	70.1–82.3	21.0	15.0–26.9	2.9	0.7–5.0
18–69	**1079**	**52.5**	**20.5–84.4**	**26.4**	**17.5–35.3**	**21.2**	**0.0–44.4**
Both Sexes							
18–44	1163	42.5	8.3–76.7	16.2	13.1–19.3	41.3	4.7–77.8
45–69	659	63.6	48.1–79.2	35.3	18.6–52.0	1.1	0.0–2.4
18–69	**1822**	**48.1**	**19.2–77.0**	**21.3**	**17.9–24.6**	**30.6**	**4.7–56.6**

Table 7.5: Percentage of respondents who think that consuming too much salt could cause serious health problems

Age Group (years)	Men			Women			Both Sexes		
	n	%	95 % CI	n	%	95% CI	n	%	95% CI
18–44	601	21.1	0.0–46.1	1018	30.4	4.4–56.5	1619	24.9	0.0–50.9
45–69	479	14.5	0.0–35.3	503	44.0	38.1–49.8	982	20.9	0.0–44.3
18–69	**1080**	**18.9**	**0.0–42.8**	**1521**	**32.8**	**9.6–56.0**	**2601**	**23.7**	**0.0–49.1**

Table 7.6: Techniques used on a regular basis to reduce salt intake

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Limit consumption of processed foods									
18–44	601	18.7	0.0–40.8	1018	23.4	3.3–43.6	1619	20.6	0.0–42.2
45–69	479	9.9	0.0–24.1	503	31.5	25.7–37.2	982	14.5	0.0–31.0
18–69	**1080**	**15.7**	**0.0–35.6**	**1521**	**24.8**	**7.1–42.5**	**2601**	**18.9**	**0.0–39.1**
Look at the salt or sodium content on food labels									
18–44	601	10.0	0.0–22.0	1018	14.1	1.8–26.4	1619	11.6	0.0–23.9
45–69	479	6.2	0.0–15.3	503	17.7	12.7–22.6	982	8.7	0.0–18.6
18–69	**1080**	**8.7**	**0.0–19.9**	**1521**	**14.7**	**4.0–25.4**	**2601**	**10.8**	**0.0–22.4**
Buy low salt/sodium alternatives									
18–44	601	5.8	0.0–12.9	1018	6.8	0.7–12.9	1619	6.2	0.0–12.9
45–69	479	3.8	0.0–9.3	503	9.3	5.5–13.1	982	5.0	0.0–10.7
18–69	**1080**	**5.1**	**0.0–11.7**	**1521**	**7.2**	**1.8–12.7**	**2601**	**5.9**	**0.0–12.3**
Use spices other than salt when cooking									
18–44	601	11.0	0.0–24.2	1018	16.3	2.1–30.4	1619	13.1	0.0–27.0
45–69	479	6.5	0.0–15.8	503	20.8	15.9–25.7	982	9.6	0.0–20.4
18–69	**1080**	**9.5**	**0.0–21.6**	**1521**	**17.1**	**4.7–29.4**	**2601**	**12.1**	**0.0–25.2**
Avoid eating foods prepared outside of a home									
18–44	601	4.9	0.0–10.8	1018	7.5	0.7–14.2	1619	5.9	0.0–12.3
45–69	479	3.4	0.0–8.4	503	9.7	5.7–13.7	982	4.8	0.0–10.3
18–69	**1080**	**4.4**	**0.0–10.0**	**1521**	**7.9**	**1.9–13.8**	**2601**	**5.6**	**0.0–11.7**
Do other things specifically to control your salt intake									
18–44	601	0.2	0.0–0.6	1018	0.3	0.0–0.8	1619	0.3	0.0–0.7
45–69	479	0.0	0.0–0.0	503	0.5	0.0–1.3	982	0.1	0.0–0.3
18–69	**1080**	**0.1**	**0.0–0.4**	**1521**	**0.4**	**0.0–0.8**	**2601**	**0.2**	**0.0–0.5**

Table 7.7: Type of oil or fat most often used for meal preparation in household

n (house–holds)	% Vege–table oil	95% CI	% Lard	95% CI	% Butter	95% CI	% Marg–arine	95% CI	% none in particular	95% CI	% None used	95% CI	% Other	95% CI
723	93.4	90.0 – 96.7	0.4	0.0 – 0.9	0.0	–	0.3	0.0 – 0.9	2.3	0.0 – 4.6	0.5	0.0 – 1.1	3.0	0.9 – 5.1

Table 7.8: Mean number of meals eaten outside a home

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18–44	494	0.5	0.1–0.9	815	0.8	0.4–1.1	1309	0.6	0.5–0.7
45–69	399	0.1	0.0–0.2	401	0.2	0.1–0.3	800	0.1	0.0–0.3
18–69	**893**	**0.3**	**0.0–0.7**	**1216**	**0.7**	**0.3–1.1**	**2109**	**0.5**	**0.4–0.6**

Physical activity

Table 8.1: Metabolic Equivalent (MET)

Domain	MET value
Work	• Moderate MET value = 4.0 • Vigorous MET value = 8.0
Transport	Cycling and walking MET value = 4.0
Recreation	• Moderate MET value = 4.0 • Vigorous MET value = 8.0

Table 8.2: Not meeting WHO recommendations on physical activity for health

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	526	17.9	15.2–20.5	908	22.2	8.5–36.0	1434	19.8	12.5–27.1
45–69	419	4.8	0.0–11.9	447	28.9	23.4–34.4	866	9.7	0.0–21.2
18–69	**945**	**12.8**	**7.6–18.0**	**1355**	**23.3**	**10.9–35.7**	**2300**	**16.7**	**7.8–25.6**

Table 8.3: Level of total physical activity according to former recommendations

Age Group (years)	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
Men							
18–44	526	22.8	15.7–29.9	7.2	0.0–15.1	70.0	55.5–84.5
45–69	419	31.6	29.4–33.8	13.5	12.2–14.7	54.9	53.0–56.8
18–69	**945**	**26.2**	**23.0–29.3**	**9.6**	**5.1–14.1**	**64.2**	**57.0–71.4**
Women							
18–44	908	35.4	23.1–47.8	47.8	20.5–75.0	16.8	1.4–32.3
45–69	447	41.0	34.9–47.1	18.3	14.2–22.3	40.7	34.4–47.1
18–69	**1355**	**36.3**	**25.2–47.5**	**42.9**	**16.5–69.3**	**20.8**	**4.9–36.7**
Both Sexes							
18–44	1434	28.4	18.7–38.2	25.2	18.6–31.8	46.3	42.6–50.1
45–69	866	33.5	31.3–35.7	14.5	12.4–16.5	52.0	48.6–55.4
18–69	**2300**	**30.0**	**23.0–37.0**	**22.0**	**18.3–25.7**	**48.1**	**44.3–51.8**

Table 8.4: Minutes spent on total physical activity on average per day

Age Group (years)	n	Mean	95% CI	Median	Inter-quartile range (P25–P75)
Men					
18–44	526	179.1	148.8–209.3	186.4	51.4–278.6
45–69	419	120.8	99.1–142.4	71.1	34.3–183.4
18–69	**945**	**156.7**	**148.9–164.5**	**154.3**	**34.3–248.6**
Women					
18–44	908	79.8	58.8–100.7	42.9	25.7–102.9
45–69	447	122.5	103.0–142.0	58.3	12.9–184.3
18–69	**1355**	**86.8**	**63.7–110.0**	**47.1**	**21.4–102.9**
Both Sexes					
18–44	1434	134.9	121.7–148.1	98.6	32.1–200.0
45–69	866	121.1	102.7–139.5	71.1	34.3–183.4
18–69	**2300**	**130.7**	**124.0–137.4**	**85.7**	**34.3–199.3**

Table 8.5: Mean minutes of physical activity on average per day

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
Work-related									
18–44	526	158.9	121.2–196.6	908	64.2	43.7–84.6	1434	116.8	100.1–133.4
45–69	419	109.9	93.4–126.4	447	107.2	88.4–126.0	866	109.3	95.9–122.8
18–69	**945**	**140.1**	**126.8–153.4**	**1355**	**71.3**	**48.5–94.0**	**2300**	**114.5**	**105.5–123.5**
Transport-related									
18–44	526	9.9	4.1–15.7	908	13.7	11.6–15.9	1434	11.6	8.7–14.4
45–69	419	9.9	6.0–13.7	447	13.0	9.7–16.3	866	10.5	6.6–14.4
18–69	**945**	**9.9**	**4.9–14.9**	**1355**	**13.6**	**11.5–15.7**	**2300**	**11.3**	**8.1–14.4**
Recreation-related									
18–44	526	10.3	6.8–13.7	908	1.9	0.0–3.8	1434	6.5	4.2–8.9
45–69	419	1.0	0.0–2.7	447	2.3	0.6–3.9	866	1.3	0.0–2.9
18–69	**945**	**6.7**	**3.3–10.1**	**1355**	**1.9**	**0.3–3.6**	**2300**	**4.9**	**2.7–7.2**

Table 8.6: Median minutes of physical activity on average per day

Age Group (years)	Men			Women			Both Sexes		
	n	Median	Inter-quartile range (P25–P75)	n	Median	Inter-quartile range (P25–P75)	n	Median	Inter-quartile range (P25–P75)
Work-related									
18–44	526	169.3	25.7–259.3	908	34.3	20.6–68.6	1434	68.6	20.6–188.6
45–69	419	71.1	34.3– 183.4	447	38.6	0.0–171.4	866	71.1	34.3–183.4
18–69	**945**	**120.0**	**34.3–214.3**	**1355**	**34.3**	**17.1–68.6**	**2300**	**68.6**	**25.7–188.6**
Transport-related									
18–44	526	0.0	0.0–12.9	908	6.4	0.0–25.7	1434	0.0	0.0–17.1
45–69	419	0.0	0.0–17.1	447	0.0	0.0–17.1	866	0.0	0.0–17.1
18–69	**945**	**0.0**	**0.0–12.9**	**1355**	**5.7**	**0.0–25.7**	**2300**	**0.0**	**0.0–17.1**
Recreation-related									
18–44	526	0.0	0.0–19.3	908	0.0	0.0–0.0	1434	0.0	0.0–0.0
45–69	419	0.0	0.0–0.0	447	0.0	0.0–0.0	866	0.0	0.0–0.0
18–69	**945**	**0.0**	**0.0–0.0**	**1355**	**0.0**	**0.0–0.0**	**2300**	**0.0**	**0.0–0.0**

Table 8.7: Percentage of respondents not doing minimum recommended (at least 10 minutes) physical activity (work-, transport- and recreation-related)

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
No work-related physical activity									
18–44	526	10.3	0.0–21.5	908	15.0	1.1–28.8	1434	12.4	0.0–24.8
45–69	419	5.4	0.0–13.6	447	25.3	19.9–30.7	866	9.5	0.0–20.8
18–69	**945**	**8.4**	**0.0–18.8**	**1355**	**16.7**	**3.8–29.6**	**2300**	**11.5**	**0.0–23.7**
No transport-related physical activity									
18–44	526	60.2	52.1–68.2	908	43.9	24.1–63.7	1434	52.9	48.1–57.8
45–69	419	61.5	56.4–66.6	447	61.4	55.1–67.7	866	61.5	57.0–65.9
18–69	**945**	**60.7**	**53.8–67.6**	**1355**	**46.8**	**28.0–65.6**	**2300**	**55.5**	**52.9–58.1**
No recreation-related physical activity									
18–44	526	65.2	56.6–73.7	908	94.9	90.1–99.8	1434	78.4	74.3–82.5
45–69	419	97.8	94.4–100.0	447	95.4	93.1–97.8	866	97.3	94.0–100.0
18–69	**945**	**77.7**	**75.6–79.8**	**1355**	**95.0**	**91.0–99.0**	**2300**	**84.1**	**82.3–85.9**

Table 8.8: Contribution of work-, transport- and recreation-related physical activity to total activity

Age Group (years)	n	% Activity from work	95% CI	% Activity for transport	95% CI	% Activity during leisure time	95% CI
Men							
18–44	455	83.9	71.6–96.2	9.1	1.4–16.7	7.0	2.1–11.9
45–69	362	89.7	84.3–95.1	9.3	5.4–13.2	1.0	0.0–2.6
18–69	**817**	**86.2**	**76.1–96.3**	**9.2**	**3.1–15.3**	**4.7**	**0.5–8.8**
Women							
18–44	733	77.3	75.2–79.4	20.0	17.8–22.2	2.7	0.0–5.6
45–69	356	79.9	76.2–83.5	17.4	13.9–20.8	2.8	0.7–4.9
18–69	**1089**	**77.7**	**76.0–79.4**	**19.6**	**17.4–21.8**	**2.7**	**0.2–5.2**
Both sexes							
18–44	1188	81.0	73.4–88.7	13.8	9.8–17.9	5.2	1.3–9.0
45–69	718	88.0	81.3–94.6	10.7	5.7–15.8	1.3	0.0–3.1
18–69	**1906**	**83.1**	**75.5–90.7**	**12.9**	**8.5–17.3**	**4.0**	**0.6–7.3**

Table 8.9: Percentage of respondents not engaging in vigorous physical activity

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	526	26.9	15.6–38.2	908	75.5	66.4–84.6	1434	48.5	44.1–52.9
45–69	419	60.9	50.4–71.4	447	62.6	56.2–69.0	866	61.2	53.2–69.3
18–69	**945**	**39.9**	**38.0–41.9**	**1355**	**73.3**	**64.0–82.6**	**2300**	**52.4**	**50.6–54.1**

Table 8.10: Minutes spent in sedentary activity on a typical day

Age Group (years)	n	Mean	95% CI	Median	Interquartile range (P25–P75)
Men					
18–44	601	107.7	94.2–121.1	120.0	60.0–150.0
45–69	479	87.8	78.2–97.5	60.0	35.0–123.0
18–69	**1080**	**101.0**	**95.8–106.2**	**120.0**	**60.0–150.0**
Women					
18–44	1018	96.6	86.5–106.6	60.0	60.0–134.0
45–69	502	113.5	102.3–124.7	90.0	60.0–150.0
18–69	**1520**	**99.5**	**88.9–110.0**	**60.0**	**60.0–140.0**
Both sexes					
18–44	1619	103.2	97.4–109.1	120.0	60.0–141.0
45–69	981	93.4	79.4–107.4	60.0	35.0–123.0
18–69	**2600**	**100.5**	**97.6–103.3**	**62.0**	**60.0–141.0**

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Overweight and obesity

Height and weight measurement (Step 2)

Table 9.1: Mean height (cm) among all respondents

Age Group (years)	Men			Women		
	n	Mean	95% CI	n	Mean	95% CI
18–44	585	159.4	157.5–161.3	952	153.4	151.7–155.1
45–69	464	156.8	155.1–158.6	490	150.5	149.8–151.3
18–69	**1049**	**158.7**	**156.8–160.6**	**1442**	**152.9**	**151.1–154.7**

Table 9.2: Mean weight (kg) among all respondents

Age Group (years)	Men			Women		
	n	Mean	95% CI	n	Mean	95% CI
18–44	584	53.4	52.5–54.2	950	49.5	48.9–50.0
45–69	464	54.3	53.2–55.5	490	47.7	46.3–49.1
18–69	**1048**	**53.7**	**53.2–54.1**	**1440**	**49.1**	**48.5–49.8**

Table 9.3: Mean BMI (kg/m^2) among all respondents

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18–44	582	21.0	20.8–21.2	942	21.0	20.7–21.3	1524	21.0	20.9–21.1
45–69	463	22.2	21.2–23.2	481	21.0	20.5–21.5	944	21.9	20.9–22.9
18–69	**1045**	**21.3**	**20.9–21.8**	**1423**	**21.0**	**20.7–21.3**	**2468**	**21.2**	**21.0–21.5**

Table 9.4: Percentage of respondents (excluding pregnant women) in each BMI category

Age Group (years)	n	% Under–weight <18.5	95% CI	% Normal weight 18.5–24.9	95% CI	% Over-weight 25.0–29.9	95% CI	% Obese ≥30.0	95% CI
Men									
18–44	582	12.3	4.3–20.3	84.5	72.8–96.3	2.4	0.0–5.5	0.7	0.0–1.7
45–69	463	8.4	0.0–19.2	70.6	67.2–74.0	20.5	12.0–29.1	0.5	0.0–1.2
18–69	**1045**	**11.2**	**2.4–20.0**	**80.6**	**71.7–89.6**	**7.5**	**6.4–8.6**	**0.7**	**0.0–1.5**
Women									
18–44	942	32.4	18.1–46.6	50.0	31.7–68.3	16.7	11.7–21.8	0.9	0.0–1.8
45–69	481	26.4	21.7–31.1	61.4	56.7–66.2	8.9	5.8–12.1	3.2	1.0–5.5
18–69	**1423**	**31.3**	**18.8–43.9**	**52.0**	**35.4–68.6**	**15.4**	**10.2–20.6**	**1.3**	**0.2–2.4**

Age Group (years)	n	% Under–weight <18.5	95% CI	% Normal weight 18.5–24.9	95% CI	% Over-weight 25.0–29.9	95% CI	% Obese ≥30.0	95% CI
Both Sexes									
18–44	1524	20.2	18.6–21.8	71.0	68.2–73.8	8.1	6.8–9.3	0.8	0.0–1.7
45–69	944	13.1	0.7–25.5	68.2	63.6–72.9	17.5	8.3–26.7	1.2	0.0–2.5
18–69	**2468**	**18.5**	**15.0–21.9**	**70.3**	**67.2–73.5**	**10.3**	**8.8–11.9**	**0.9**	**0.0–1.8**

Table 9.5: Percentage of respondents (excluding pregnant women) classified as overweight (BMI≥25)

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	582	3.2	0.0–7.1	942	17.6	13.3–22.0	1524	8.8	6.9–10.8
45–69	463	21.0	13.0–29.0	481	12.1	8.6–15.7	944	18.7	10.6–26.8
18–69	**1045**	**8.2**	**7.2–9.1**	**1423**	**16.7**	**12.4–21.0**	**2468**	**11.2**	**10.3–12.2**

Table 9.6: Mean waist circumference (cm) and hip circumference (cm) among all respondents (excluding pregnant women)

Age Group (years)	Men			Women		
	n	Mean	95% CI	n	Mean	95% CI
Waist circumference						
18–44	578	68.3	62.9–73.8	948	77.5	75.7–79.3
45–69	463	79.0	77.6–80.5	486	76.5	75.1–77.8
18–69	**1041**	**71.3**	**68.0–74.7**	**1434**	**77.4**	**75.7–79.0**
Hip circumference						
18–44	578	72.9	63.1–82.7	948	83.4	81.3–85.5
45–69	463	85.9	84.9–86.9	485	85.4	84.0–86.8
18–69	**1041**	**76.5**	**69.9–83.1**	**1433**	**83.7**	**81.7–85.7**

Table 9.7: Mean waist to hip ratio among all respondents (excluding pregnant women)

Age Group (years)	Men			Women		
	n	Mean	95% CI	n	Mean	95% CI
18–44	578	0.9	0.9–1.0	948	0.9	0.9–1.0
45–69	463	0.9	0.9–0.9	485	0.9	0.9–0.9
18–69	**1041**	**0.9**	**0.9–1.0**	**1433**	**0.9**	**0.9–1.0**

Blood pressure

Table 10.1: Blood pressure measurement and diagnosis of hypertension

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
Men									
18–44	601	92.9	84.6–100.0	5.4	0.0–11.8	0.2	0.0–0.5	1.4	0.0–3.3
45–69	479	88.5	72.0–100.0	6.9	0.0–16.9	1.1	0.0–2.8	3.5	0.0–8.6
18–69	**1080**	**91.5**	**80.7–100.0**	**5.9**	**0.0–13.4**	**0.5**	**0.0–1.2**	**2.1**	**0.0–4.9**
Women									
18–44	1017	83.7	69.6–97.7	12.8	1.8–23.9	0.8	0.0–1.7	2.7	0.2–5.1
45–69	502	60.4	54.6–66.3	24.1	19.3–28.9	4.0	1.8–6.3	11.4	8.0–14.8
18–69	**1519**	**79.7**	**65.2–94.1**	**14.8**	**4.2–25.3**	**1.4**	**0.3–2.5**	**4.2**	**1.1–7.2**
Both sexes									
18–44	1618	89.2	77.9–100.0	8.4	0.0–17.2	0.5	0.0–1.0	1.9	0.0–4.0
45–69	981	82.5	62.7–100.0	10.6	0.0–22.6	1.7	0.0–3.8	5.2	0.0–11.1
18–69	**2599**	**87.3**	**73.8–100.0**	**9.0**	**0.0–18.6**	**0.8**	**0.0–1.7**	**2.8**	**0.0–5.9**

Table 10.2: Percentage of respondents currently taking blood pressure drugs prescribed by doctor or health worker, among those diagnosed

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	29	45.0	21.9–68.2	72	37.8	24.7–50.9	101	40.8	28.9–52.7
45–69	73	47.8	33.3–62.2	72	60.5	46.7–74.4	145	53.9	43.4–64.4
18–69	**102**	**46.6**	**34.1–59.1**	**144**	**48.7**	**38.3–59.1**	**246**	**47.7**	**39.6–55.9**

Table 10.3: Percentage of previously diagnosed hypertensive respondents who have visited or received treatment from a traditional healer

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Seen a traditional healer									
18–44	29	17.6	2.7–32.6	72	9.8	2.5–17.0	101	13.0	5.3–20.8
45–69	73	17.4	5.1–29.8	72	20.0	9.9–30.0	145	18.6	10.1–27.2
18–69	**102**	**17.5**	**8.3–26.8**	**144**	**14.6**	**7.5–21.8**	**246**	**16.0**	**9.6–22.3**
Currently taking herbal or traditional remedies for high blood pressure									
18–44	29	46.0	21.3–70.7	72	29.1	18.7–39.5	101	36.1	22.0–50.2
45–69	73	34.0	19.0–48.9	72	41.4	30.0–52.7	145	37.5	28.6–46.5
18–69	**102**	**39.0**	**24.8–53.2**	**144**	**35.0**	**26.5–43.5**	**246**	**36.9**	**28.2–45.5**

Blood pressure measurement

Table 10.4: Mean systolic and diastolic blood pressure (mmHg), including those currently on medication for raised blood pressure

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
Mean systolic blood pressure (mmHg)									
18–44	595	134.6	124.3–144.8	1011	119.6	118.3–120.9	1606	128.6	120.8–136.4
45–69	471	130.1	128.6–131.6	495	130.1	127.9–132.3	966	130.1	128.9–131.4
18–69	**1066**	**133.1**	**126.9–139.2**	**1506**	**121.4**	**120.7–122.2**	**2572**	**129.0**	**123.7–134.4**
Mean diastolic blood pressure (mmHg)									
18–44	595	87.3	80.0–94.5	1011	82.2	79.4–85.1	1606	85.3	79.4–91.1
45–69	471	75.9	71.7–80.1	495	82.9	81.6–84.2	966	77.4	72.4–82.4
18–69	**1066**	**83.5**	**80.7–86.2**	**1506**	**82.4**	**80.1–84.7**	**2572**	**83.1**	**80.4–85.8**

Table 10.5: Percentage of respondents with raised blood pressure

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
SBP ≥140 and/or DBP ≥ 90 mmHg, excluding those on medication for raised blood pressure									
18–44	588	47.9	20.3–75.5	991	26.0	16.5–35.5	1579	39.2	17.2–61.2
45–69	449	38.7	35.7–41.7	475	31.5	26.9–36.0	924	37.2	33.0–41.3
18–69	**1037**	**44.8**	**26.1–63.6**	**1466**	**26.9**	**19.6–34.3**	**2503**	**38.6**	**21.7–55.6**
SBP ≥140 and/or DBP ≥ 90 mmHg or currently on medication for raised blood pressure									
18–44	595	48.2	21.0–75.3	1011	26.7	17.8–35.6	1606	39.6	18.1–61.0
45–69	471	39.7	37.7–41.6	495	34.4	29.8–39.1	966	38.5	35.8–41.3
18–69	1066	45.3	27.3–63.3	1506	28.0	21.5–34.5	2572	39.3	23.2–55.4

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
SBP ≥160 and/or DBP ≥ 100 mmHg, excluding those on medication for raised blood pressure									
18–44	588	8.7	5.4–12.1	991	2.6	0.2–4.9	1579	6.3	4.6–7.9
45–69	449	3.6	0.0–8.8	475	12.5	9.1–15.8	924	5.4	0.0–11.8
18–69	**1037**	**7.0**	**6.4–7.6**	**1466**	**4.2**	**1.1–7.3**	**2503**	**6.0**	**5.3–6.8**
SBP ≥160 and/or DBP ≥ 100 mmHg or currently on medication for raised blood pressure									
18–44	595	9.2	6.3–12.1	1011	3.4	0.4–6.5	1606	6.9	5.8–8.0
45–69	471	5.1	0.0–12.4	495	16.3	12.6–20.0	966	7.5	0.0–16.0
18–69	**1066**	**7.8**	**6.7–8.9**	**1506**	**5.6**	**1.5–9.7**	**2572**	**7.0**	**5.3–8.8**

Table 10.6: Percentage of respondents with treated controlled raised blood pressure, among those with raised blood pressure (SBP≥140 and/or DBP≥90 mmHg) or currently on medication for raised blood pressure

Age Group (years)	n	% On medication and SBP<140 and DBP<90	95% CI	% On medication and SBP≥140 and/or DBP≥90	95% CI	% Not on medication and SBP≥140 and/or DBP≥90	95% CI
Men							
18–44	116	0.5	0.0–1.5	0.5	0.0–1.6	99.0	97.1–100.0
45–69	174	1.6	0.0–4.2	2.3	0.0–6.0	96.1	90.0–100.0
18–69	**290**	**0.8**	**0.0–2.3**	**1.0**	**0.0–2.9**	**98.1**	**95.0–100.0**
Women							
18–44	226	1.2	0.0–3.0	2.1	0.0–5.0	96.6	92.4–100.0
45–69	178	4.7	0.4–9.1	7.9	3.4–12.4	87.4	80.8–93.9
18–69	**404**	**2.0**	**0.0–4.1**	**3.3**	**0.0–6.7**	**94.7**	**89.4–100.0**
Both Sexes							
18–44	342	0.7	0.0–1.9	0.9	0.0–2.6	98.4	95.7–100.0
45–69	352	2.2	0.0–5.1	3.4	0.0–7.7	94.4	87.4–100.0
18–69	**694**	**1.1**	**0.0–2.8**	**1.6**	**0.0–4.1**	**97.3**	**93.2–100.0**

Table 10.7: Mean heart rate (beats per minute) among all respondents

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18–44	595	72.9	72.5–73.4	1011	78.4	76.5–80.3	1606	75.1	73.9–76.3
45–69	471	77.6	75.3–79.9	495	77.5	76.3–78.6	966	77.6	75.7–79.4
18–69	**1066**	**74.5**	**73.4–75.6**	**1506**	**78.3**	**76.8–79.7**	**2572**	**75.8**	**75.4–76.2**

Blood glucose

Table 11.1: Blood glucose measurement and diagnosis of diabetes mellitus

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
Men									
18–44	601	99.6	99.0–100.0	0.4	0.0–0.9	0.0	0.0–0.0	0.1	0.0–0.2
45–69	479	98.9	97.3–100.0	0.7	0.0–1.8	0.1	0.0–0.2	0.3	0.0–0.9
18–69	**1080**	**99.4**	**98.5–100.0**	**0.5**	**0.0–1.1**	**0.0**	**0.0–0.1**	**0.2**	**0.0–0.4**
Women									
18–44	1018	99.2	98.5–100.0	0.4	0.0–0.9	0.2	0.0–0.4	0.2	0.0–0.4
45–69	501	96.5	94.5–98.5	2.6	0.9–4.4	0.2	0.0–0.7	0.6	0.0–1.3
18–69	**1519**	**98.8**	**97.8–99.8**	**0.8**	**0.1–1.5**	**0.2**	**0.0–0.4**	**0.2**	**0.0–0.5**
Both sexes									
18–44	1619	99.4	98.8–100.0	0.4	0.0–0.8	0.1	0.0–0.2	0.1	0.0–0.3
45–69	980	98.4	96.5–100.0	1.1	0.0–2.5	0.1	0.0–0.3	0.4	0.0–0.9
18–69	**2599**	**99.2**	**98.2–100.0**	**0.6**	**0.0–1.3**	**0.1**	**0.0–0.2**	**0.2**	**0.0–0.4**

Table 11.2: Percentage of respondents currently oral medication and insulin, among those previously diagnosed: Both sexes

Age Group (years)	n	%	95% CI
Taking oral drugs			
18–44	6	37.6	0.0–83.9
45–69	10	50.2	15.6–84.8
18–69	**16**	**44.2**	**15.4–73.0**
Taking insulin			
18–44	6	0.0	0.0–0.0
45–69	9	17.2	0.0–45.4
18–69	**15**	**8.3**	**0.0–22.3**

Table 11.3: Percentage of respondents who have sought advise or treatment from a traditional healer for diabetes among those previously diagnosed: Both sexes

Age Group (years)	n	%	95% CI
Seen a traditional healer			
18–44	6	26.1	0.0–63.9
45–69	9	0.0	–
18–69	**15**	**13.5**	**0.0–33.9**
Currently taking herbal or traditional treatment			
18–44	6	22.7	0.0–65.9
45–69	9	6.8	0.0–22.1
18–69	**15**	**15.0**	**0.0–39.9**

Biochemical measurements

Table 11.4: Mean fasting plasma glucose (mmol/L) among all respondents

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18–44	550	4.2	4.1–4.3	961	4.0	3.9–4.2	1511	4.2	4.1–4.2
45–69	444	4.9	4.5–5.3	469	4.4	4.2–4.7	913	4.8	4.4–5.2
18–69	**994**	**4.4**	**4.3–4.6**	**1430**	**4.1**	**4.0–4.3**	**2424**	**4.3**	**4.2–4.4**

Table 11.5: Mean fasting plasma glucose (mg/dl) among all respondents, including those currently on medication for raised blood pressure

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18–44	550	76.1	74.7–77.4	961	72.8	70.8–74.8	1511	74.8	74.1–75.5
45–69	444	88.8	81.8–95.8	469	79.9	76.0–83.8	913	86.6	79.1–94.0
18–69	**994**	**79.7**	**76.7–82.6**	**1430**	**74.0**	**71.4–76.6**	**2424**	**77.6**	**75.8–79.4**

Table 11.6: Impaired fasting glycaemia among all respondents (plasma Venous Value ≥110mg/dl and <126mg/dl)

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	550	19.1	5.5–32.8	961	14.2	0.8–27.6	1511	17.2	3.3–31.1
45–69	444	1.1	0.0–2.6	469	1.4	0.3–2.5	913	1.1	0.0–2.4
18–69	**994**	**5.7**	**3.0-8.5**	**1430**	**1.2**	**0.2-2.2**	**2424**	**4.1**	**2.2-6.1**

Table 11.7: Raised blood glucose (plasma Venous Value ≥126mg/dl) or currently on medication for diabetes

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	550	2.1	0.0–4.8	961	2.1	0.1–4.0	1511	2.1	0.0–4.4
45–69	444	20.5	11.8–29.2	469	6.3	3.9–8.7	913	16.9	7.0–26.9
18–69	**994**	**1.5**	**0.0-3.5**	**1430**	**1.6**	**0.3-2.9**	**2424**	**1.5**	**0.0-3.2**

Table 11.8: Percentage of respondents currently on medication for diabetes

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	602	0.8	0.0–2.1	1022	0.2	0.0–0.5	1624	0.6	0.0–1.4
45–69	481	0.3	0.0–0.7	504	0.8	0.0–1.7	985	0.4	0.0–0.9
18–69	**1083**	**0.6**	**0.0–1.6**	**1526**	**0.3**	**0.0–0.6**	**2609**	**0.5**	**0.0–1.2**

Abnormal lipids

Table 12.1: Total cholesterol measurement and diagnosis

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
Men									
18–44	601	99.7	99.2–100.0	0.2	0.0–0.6	0.0	0.0–0.0	0.1	0.0–0.2
45–69	478	99.5	98.7–100.0	0.3	0.0–0.8	0.1	0.0–0.3	0.1	0.0–0.3
18–69	**1079**	**99.6**	**99.1–100.0**	**0.3**	**0.0–0.6**	**0.0**	**0.0–0.1**	**0.1**	**0.0–0.2**
Women									
18–44	1018	99.1	98.2–100.0	0.5	0.0–1.0	0.1	0.0–0.3	0.3	0.0–0.6
45–69	501	96.1	93.8–98.4	2.4	0.7–4.0	0.4	0.0–1.1	1.1	0.0–2.5
18–69	**1519**	**98.6**	**97.4–99.8**	**0.8**	**0.1–1.5**	**0.2**	**0.0–0.4**	**0.4**	**0.0–0.9**
Both sexes									
18–44	1619	99.4	98.8–100.0	0.3	0.0–0.7	0.1	0.0–0.1	0.2	0.0–0.4
45–69	979	98.8	97.3–100.0	0.7	0.0–1.7	0.2	0.0–0.4	0.3	0.0–0.8
18–69	**2598**	**99.3**	**98.4–100.0**	**0.4**	**0.0–1.0**	**0.1**	**0.0–0.2**	**0.2**	**0.0–0.5**

Table 12.2: Percentage of respondents currently taking oral treatment (medication) prescribed for raised total cholesterol among those previously diagnosed: Both sexes

Age Group (years)	n	%	95% CI
18–44	11	38.4	16.6–60.2
45–69	8	40.7	7.3–74.2
18–69	**19**	**39.5**	**18.3–60.7**

Table 12.3: Percentage of respondents who have sought advise or treatment form a traditional healer for raised cholesterol among those previously diagnosed: Both sexes

Age Group (years)	n	%	95% CI
Seen a traditional healer			
18–44	11	12.6	0.0–34.2
45–69	8	28.2	0.0–64.0
18–69	**19**	**19.6**	**0.0–39.2**

Age Group (years)	n	%	95% CI
Taking herbal or traditional treatment			
18–44	11	5.5	0.0–18.0
45–69	8	28.2	0.0–64.0
18–69	**19**	**15.7**	**0.0–34.1**

Biochemical measurement

Table 12.4: Mean total cholesterol (mmol/L) among all respondents, including those currently on medication for raised cholesterol

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18–44	569	3.6	3.5–3.6	982	4.2	3.8–4.6	1551	3.8	3.7–4.0
45–69	449	4.0	3.8–4.3	483	4.1	4.0–4.2	932	4.1	3.9–4.2
18–69	**1018**	**3.7**	**3.6–3.8**	**1465**	**4.2**	**3.8–4.5**	**2483**	**3.9**	**3.7–4.0**

Table 12.5: Mean total cholesterol (mg/dl) among all respondents, including those currently on medication for raised cholesterol

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
18–44	569	138.7	136.7–140.8	982	161.2	146.0–176.3	1551	147.6	142.5–152.8
45–69	449	156.6	147.5–165.6	483	158.3	153.4–163.3	932	157.0	150.5–163.5
18–69	**1018**	**143.7**	**139.7–147.8**	**1465**	**160.7**	**147.7–173.7**	**2483**	**149.9**	**144.7–155.1**

Table 12.6: Percentage of respondents with raised total cholesterol or on medication for raised cholesterol

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Total cholesterol ≥ 5.0 mmol/L or ≥ 190 mg/dl or currently on medication for raised cholesterol									
18–44	569	16.0	8.1–23.9	982	26.6	11.4–41.8	1551	20.2	10.3–30.1
45–69	449	24.9	14.5–35.4	483	20.0	15.4–24.7	932	23.7	14.6–32.7
18–69	**1018**	**18.5**	**9.8–27.2**	**1465**	**25.5**	**12.0–39.0**	**2483**	**21.0**	**11.4–30.6**
Total cholesterol ≥ 6.2 mmol/L or ≥ 240 mg/dl or currently on medication for raised cholesterol									
18–44	569	7.3	2.5–12.1	982	4.9	2.7–7.1	1551	6.3	2.4–10.3
45–69	449	0.8	0.0–1.9	483	4.9	2.6–7.2	932	1.8	0.0–3.7
18–69	**1018**	**5.5**	**2.4–8.5**	**1465**	**4.9**	**3.0–6.8**	**2483**	**5.3**	**2.6–7.9**

Combined risk factors and cardiovascular disease risk prediction

Table 13.1: Summary of Combined Risk Factors

Age Group (years)	n	% with 0 risk factors	95% CI	% with 1–2 risk factors	95% CI	% with 3–5 risk factors	95% CI
Men							
18–44	489	7.7	5.8–9.5	76.3	73.7–78.9	16.0	14.2–17.8
45–69	380	15.2	8.0–22.3	52.9	44.1–61.6	32.0	29.6–34.3
18–69	**869**	**10.1**	**6.7–13.4**	**68.8**	**63.7–73.9**	**21.1**	**19.0–23.3**
Women							
18–44	795	4.0	0.0–8.1	79.3	77.1–81.5	16.7	11.3–22.1
45–69	408	5.5	3.1–7.9	78.4	74.1–82.8	16.1	12.1–20.1
18–69	**1203**	**4.2**	**0.6–7.9**	**79.1**	**77.1–81.1**	**16.6**	**12.0–21.3**
Both Sexes							
18–44	1284	6.1	4.4–7.8	77.6	75.6–79.6	16.3	13.5–19.1
45–69	788	12.8	5.0–20.7	59.0	46.0–72.0	28.2	22.8–33.5
18–69	**2072**	**7.8**	**6.4–9.3**	**72.8**	**68.3–77.2**	**19.4**	**16.1–22.7**

Table 13.2: Percentage of respondents having ever had a heart attack or chest pain from heart disease or a stroke

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	601	0.2	0.0–0.5	1018	0.6	0.0–1.3	1619	0.3	0.0–0.8
45–69	478	0.7	0.0–1.8	501	2.4	0.9–3.9	979	1.0	0.0–2.3
18–69	**1079**	**0.4**	**0.0–0.9**	**1519**	**0.9**	**0.1–1.7**	**2598**	**0.5**	**0.0–1.2**

Table 13.3: Percentage of respondents currently taking aspirin/statins regularly to prevent or treat heart disease

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Taking aspirin									
18–44	601	0.1	0.0–0.3	1018	0.1	0.0–0.4	1619	0.1	0.0–0.3
45–69	478	0.1	0.0–0.4	501	0.4	0.0–0.9	979	0.2	0.0–0.5
18–69	**1079**	**0.1**	**0.0–0.3**	**1519**	**0.2**	**0.0–0.4**	**2598**	**0.1**	**0.0–0.3**

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Taking statins									
18–44	601	0.1	0.0–0.2	1018	0.3	0.0–0.6	1619	0.2	0.0–0.4
45–69	478	0.1	0.0–0.3	501	0.2	0.0–0.5	979	0.1	0.0–0.3
18–69	**1079**	**0.1**	**0.0–0.2**	**1519**	**0.3**	**0.0–0.6**	**2598**	**0.2**	**0.0–0.3**

Table 13.4: Percentage of respondents with a 10–year CVD risk ≥30% or with existing CVD

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
40–54	337	1.0	0.0–2.5	416	1.7	0.4–3.1	753	1.3	0.1–2.4
55–69	243	0.8	0.0–2.0	241	5.2	2.2-8.2	484	1.6	0.0–3.6
40–69	**580**	**0.9**	**0.0–2.2**	**657**	**2.9**	**1.5-4.1**	**1237**	**1.4**	**0.0–2.9**

Table 13.5: Percentage of eligible persons (defined as aged 40-69 years with a 10-year cardiovascular disease (CVD) risk ≥30%, including those with existing CVD) receiving drug therapy and counseling (including glycaemic control) to prevent heart attacks and strokes.

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
40–54	7	24.7	0.0–62.2	7	38.8	0.0–79.3	14	30.8	4.7–56.9
55–69	7	38.1	0.0–85.8	12	57.1	24.7-89.5	19	49.6	22.4-76.7
40–69	**14**	**30.3**	**0.1–60.6**	**19**	**49.6**	**22.2-77.1**	**33**	**40.3**	**19.9-60.7**

Lifestyle advice by health care provider

Table 14.1: Advised by doctor or health worker to change life style among all respondents

Age Group (years)	Men			Women			Both Sexes		
	n	% advised	95% CI	n	% advised	95% CI	n	% advised	95% CI
Quit using tobacco or don't start									
18–44	601	19.7	0.0–43.0	1018	19.7	2.7–36.7	1619	19.7	0.0–40.4
45–69	478	15.3	0.0–37.2	501	36.2	30.9–41.5	979	19.8	0.0–42.1
18–69	**1079**	**18.2**	**0.0–41.3**	**1519**	**22.5**	**6.4–38.6**	**2598**	**19.7**	**0.0–40.8**
Reduce salt in the diet									
18–44	601	16.8	0.0–36.8	1018	21.4	3.0–39.8	1619	18.7	0.0–38.3
45–69	478	12.7	0.0–30.9	501	39.2	33.5–44.9	979	18.4	0.0–39.1
18–69	**1079**	**15.4**	**0.0–35.0**	**1519**	**24.5**	**7.0–41.9**	**2598**	**18.6**	**0.0–38.5**
Eat at least five servings of fruit and/or vegetables each day									
18–44	601	15.6	0.0–34.1	1018	21.6	2.9–40.3	1619	18.0	0.0–37.0
45–69	478	10.9	0.0–26.6	501	33.3	27.7–38.9	979	15.7	0.0–33.5
18–69	**1079**	**14.0**	**0.0–31.8**	**1519**	**23.6**	**6.7–40.6**	**2598**	**17.4**	**0.0–36.0**
Reduce fat in the diet									
18–44	601	13.7	0.0–30.0	1018	17.1	2.2–32.0	1619	15.1	0.0–31.0
45–69	478	9.9	0.0–24.1	501	28.6	23.1–34.0	979	13.9	0.0–29.6
18–69	**1079**	**12.4**	**0.0–28.2**	**1519**	**19.1**	**5.3–32.9**	**2598**	**14.8**	**0.0–30.6**
Start or do more physical activity									
18–44	601	14.6	0.0–32.0	1018	18.0	2.4–33.6	1619	16.0	0.0–32.8
45–69	478	8.7	0.0–21.3	501	25.6	19.9–31.3	979	12.4	0.0–26.3
18–69	**1079**	**12.6**	**0.0–28.7**	**1519**	**19.3**	**5.4–33.3**	**2598**	**15.0**	**0.0–31.0**
Maintain a healthy body weight or to lose weight									
18–44	601	10.3	0.0–22.6	1018	14.7	1.8–27.6	1619	12.1	0.0–24.9
45–69	478	6.5	0.0–15.9	501	19.7	14.5–24.8	979	9.3	0.0–20.0
18–69	**1079**	**9.0**	**0.0–20.6**	**1519**	**15.6**	**4.1–27.0**	**2598**	**11.3**	**0.0–23.5**

Table 14.2: Cervical cancer screening

Age Group (years)	Women		
	n	% ever tested	95% CI
18–44	958	0.7	0.0–1.5
45–69	449	0.4	0.0–1.0
18–69	**1407**	**0.7**	**0.0–1.3**

Table 14.3: Cervical cancer screening among women aged 30–49 years

Age Group (years)	Women		
	n	% ever tested	95% CI
30–49	668	1.1	0.0–2.3

Violence and injury

Table 15.1: Percentage of drivers or passengers not always using a seat belt during the past 30 days

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	518	96.1	91.1–100.0	853	98.4	96.7–100.0	1371	97.0	93.5–100.0
45–69	380	98.8	97.0–100.0	395	98.1	96.5–99.7	775	98.7	97.0–100.0
18–69	**898**	**97.0**	**92.9–100.0**	**1248**	**98.3**	**96.8–99.9**	**2146**	**97.5**	**94.4–100.0**

Table 15.2: Percentage of drivers or passengers of a motorcycle or motor-scooter not always using a helmet during the past 30 days

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	513	79.0	53.1–100.0	779	79.1	58.6–99.6	1292	79.1	55.3–100.0
45–69	352	92.0	80.1–100.0	330	83.2	77.6–88.8	682	90.4	78.6–100.0
18–69	**865**	**83.0**	**60.7–100.0**	**1109**	**79.7**	**62.4–96.9**	**1974**	**81.9**	**61.0–100.0**

Table 15.3: Percentage of cyclists who did not always wear a helmet among those riding a bike in the past 30 days

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	415	94.4	89.1–99.6	713	94.0	88.6–99.4	1128	94.2	89.0–99.3
45–69	310	97.6	94.0–100.0	329	97.4	94.2–100.0	639	97.5	94.7–100.0
18–69	**725**	**95.5**	**90.7–100.0**	**1042**	**94.6**	**90.3–98.9**	**1767**	**95.1**	**90.6–99.7**

Table 15.4: Percentage of respondents who have been involved in a road traffic crash during the past 12 months

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	586	4.5	0.0–10.0	1007	1.7	0.1–3.3	1593	3.4	0.0–7.1
45–69	468	1.9	0.0–4.8	496	2.6	0.7–4.6	964	2.1	0.0–4.5
18–69	**1054**	**3.6**	**0.0–8.3**	**1503**	**1.9**	**0.4–3.4**	**2557**	**3.0**	**0.0–6.3**

Table 15.5: Percentage of respondents seriously injured as a result of road traffic crash among those involved in a road traffic crash in the past 12 months

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	53	44.7	25.3–64.1	28	59.8	38.0–81.5	81	47.8	31.7–63.9
45–69	30	57.3	39.8–74.9	11	56.7	29.8–83.7	41	57.2	41.4–73.0
18–69	**83**	**46.9**	**31.0–62.8**	**39**	**59.0**	**40.6–77.5**	**122**	**49.6**	**36.2–62.9**

Table 15.6: Percentage of respondents injured in a non-road traffic related accident that required medical attention in the past 12 months

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	592	2.6	0.0–5.8	1007	2.1	0.1–4.1	1599	2.4	0.0–5.0
45–69	472	1.9	0.0–4.7	494	6.3	3.4–9.2	966	3.0	0.0–6.3
18–69	**1064**	**2.4**	**0.0–5.4**	**1501**	**2.8**	**0.6–5.1**	**2565**	**2.5**	**0.0–5.3**

Table 15.7: Percentage of respondents who were seriously injured other than road traffic crashes in the past 12 months

Age 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
Men															
18–44	34	77.7	56.2–99.1	0.8	0.0–2.3	3.1	0.0–7.8	4.3	0.0–10.8	1.7	0.0–5.1	1.4	0.0–4.4	11.1	0.0–31.9
45–69	24	56.1	31.6–80.7	0.0	0.0–0.0	0.0	0.0–0.0	21.5	3.1–39.8	0.0	0.0–0.0	22.4	0.4–44.4	0.0	0.0–0.0
18–69	**58**	**72.3**	**55.8–88.8**	**0.6**	**0.0–1.7**	**2.3**	**0.0–5.9**	**8.6**	**2.0–15.1**	**1.2**	**0.0–3.8**	**6.6**	**0.2–13.1**	**8.3**	**0.0–24.3**
Women															
18–44	33	48.9	26.1–71.7	2.6	0.0–7.9	0.0	0.0–0.0	37.8	14.7–60.9	1.9	0.0–5.9	8.8	0.0–20.4	0.0	0.0–0.0
45–69	26	44.3	24.7–64.0	0.0	0.0–0.0	0.0	0.0–0.0	44.6	25.5–63.7	0.0	0.0–0.0	6.6	0.0–16.5	4.5	0.0–13.7
18–69	**59**	**47.1**	**32.9–61.2**	**1.5**	**0.0–4.8**	**0.0**	**0.0–0.0**	**40.5**	**25.4–55.7**	**1.1**	**0.0–3.5**	**7.9**	**0.0–16.2**	**1.8**	**0.0–5.5**
Both Sexes															
18–44	67	68.0	51.8–84.2	1.4	0.0–3.4	2.1	0.0–5.1	15.6	4.7–26.4	1.7	0.0–4.4	3.9	0.0–8.2	7.4	0.0–21.5
45–69	50	50.2	32.9–67.5	0.0	0.0–0.0	0.0	0.0–0.0	33.1	17.6–48.6	0.0	0.0–0.0	14.4	1.7–27.1	2.3	0.0–6.9
18–69	**117**	**62.5**	**50.9–74.2**	**0.9**	**0.0–2.4**	**1.4**	**0.0–3.6**	**21.0**	**11.8–30.2**	**1.2**	**0.0–3.0**	**7.1**	**2.1–12.2**	**5.8**	**0.0–15.8**

Table 15.8: Location of accidental serious injuries among respondents seriously injured in the past 12 months

Age Group (years)	n	% Home	95% CI	% School/ work-place	95% CI	% Road– Street– High-way	95% CI	% Farm	95% CI	% Sports– Athletic area	95% CI	% other	95% CI
Men													
18–44	34	13.7	0.6–26.8	15.1	2.1–28.1	58.4	34.3–82.5	0.0	0.0–0.0	0.0	0.0–0.0	12.8	0.0–33.7
45–69	24	46.4	22.7–70.1	32.4	11.9–53.0	17.8	2.5–33.1	3.4	0.0–10.3	0.0	0.0–0.0	0.0	0.0–0.0
18–69	**58**	**21.9**	**8.7–35.0**	**19.4**	**7.8–31.1**	**48.3**	**27.7–69.0**	**0.8**	**0.0–2.5**	**0.0**	**0.0–0.0**	**9.6**	**0.0–25.7**
Women													
18–44	36	40.2	20.5–59.9	35.2	17.4–53.0	21.3	6.5–36.1	3.3	0.0–9.9	0.0	0.0–0.0	0.0	0.0–0.0
45–69	26	78.9	62.2–95.6	13.4	0.0–28.8	4.7	0.0–11.4	0.0	0.0–0.0	0.0	0.0–0.0	3.1	0.0–9.4
18–69	**62**	**55.0**	**41.8–68.2**	**26.8**	**14.5–39.1**	**14.9**	**4.9–24.9**	**2.1**	**0.0–6.1**	**0.0**	**0.0–0.0**	**1.2**	**0.0–3.6**
Both Sexes													
18–44	70	23.0	10.2–35.8	22.2	10.3–34.0	45.4	27.4–63.4	1.2	0.0–3.5	0.0	0.0–0.0	8.3	0.0–22.1
45–69	50	62.7	46.9–78.6	22.8	8.7–36.9	11.2	2.9–19.5	1.7	0.0–5.0	0.0	0.0–0.0	1.6	0.0–4.7
18–69	**120**	**35.0**	**23.7–46.4**	**22.4**	**13.5–31.2**	**35.0**	**20.5–49.6**	**1.3**	**0.0–3.2**	**0.0**	**0.0–0.0**	**6.2**	**0.0–16.1**

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Table 15.9: Percentage of respondents who have driven a motorized vehicle after having had 2 or more alcoholic drinks in the past 30 days

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	408	23.8	15.2–32.3	677	2.6	0.0–5.7	1085	13.0	10.7–15.3
45–69	327	1.8	0.0–4.6	328	2.0	0.5–3.5	655	1.9	0.0–4.1
18–69	**735**	**14.8**	**12.6–16.9**	**1005**	**2.5**	**0.0–5.1**	**1740**	**9.6**	**8.2–11.0**

Table 15.10: Percentage of respondents who rode in a motorized vehicle where the driver has had 2 or more alcoholic drinks in the past 30 days

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	392	20.8	9.9–31.7	661	0.5	0.0–1.2	1053	10.3	6.2–14.4
45–69	323	0.9	0.0–2.4	326	0.8	0.0–2.0	649	0.9	0.0–2.1
18–69	**715**	**12.5**	**9.4–15.7**	**987**	**0.5**	**0.0–1.2**	**1702**	**7.5**	**5.2–9.7**

Table 15.11: Percentage of respondents involved in a violent incident during the past 12 months resulting in an injury

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	595	1.5	0.0–3.6	1011	0.8	0.0–1.8	1606	1.2	0.0–2.7
45–69	473	0.3	0.0–0.8	499	0.2	0.0–0.6	972	0.3	0.0–0.7
18–69	**1068**	**1.1**	**0.0–2.7**	**1510**	**0.7**	**0.0–1.5**	**2578**	**1.0**	**0.0–2.1**

Table 15.12: Percentage of respondents who reported being frightened for the safety of themselves or their families because of the anger or threats of another person

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
18–44	589	2.8	0.0–6.5	997	1.3	0.0–2.7	1586	2.2	0.0–4.8
45–69	470	0.5	0.0–1.3	490	2.6	0.8–4.5	960	0.9	0.0–2.1
18–69	**1059**	**2.0**	**0.0–4.8**	**1487**	**1.6**	**0.2–2.9**	**2546**	**1.9**	**0.0–4.0**

Table 15.13: Percentage of respondents frightened by each of the following types of people in past 12 months: Both sexes

Age Group (years)	n	% Someone within the family	95% CI	% Friend or acquaintance	95% CI	% Unrelated caregiver	95% CI	% Stranger	95% CI	% Official or legal authority	95% CI
18–44	43	52.4	30.1–74.6	9.8	0.2–19.4	5.2	0.0–13.7	9.7	0.0–28.4	22.9	0.0–46.5
45–69	17	94.7	84.3–100.0	5.3	0.0–15.7	0.0	0.0–0.0	0.0	0.0–0.0	0.0	0.0–0.0
18–69	**60**	**57.8**	**37.3–78.4**	**9.2**	**0.7–17.7**	**4.5**	**0.0–11.9**	**8.5**	**0.0–24.8**	**20.0**	**0.0–41.0**

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Annex 2: Survey Instruments

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　　　　　1 No　　　　　2　　If NO, END	I5
Interview Language	English　1 Tetun　2 Portugese　3 [Others]　4	I6
Time of interview (24 hour clock)	└┴┴┘ : └┴┴┘ hrsmins	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　　　　　1 Female　　　　　2	C1
What is your date of birth? Don't Know 77 77 7777	/　　/　　If known, Go to C4 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

What is the highest level of education you have completed?	No formal schooling	1	C5
	Less than primary school (grade 6 not completed)	2	
	Primary school completed (grade 6 completed)	3	
	Pre Secondary school completed (grade 9 completed)	4	
	Secondary school completed (grade 12 completed)	5	
	College Diploma completed (1-3 years)	6	
	College/University Completed (4-6 years)	7	
	Post graduate degree	8	
	Refused	88	
What is your marital status?	Never married	1	C7
	Currently married	2	
	Separated	3	
	Divorced	4	
	Widowed	5	
	Cohabitating	6	
	Refused	88	
Which of the following best describes your mainwork status over the past 12 months?	Government employee	1	C8
	Non-government employee	2	
	Self-employed	3	
	Non-paid	4	
	Student	5	
	Homemaker	6	
	Retired	7	
	Unemployed (able to work)	8	
	Unemployed (unable to work)	9	
	Refused	88	
How many people older than 18 years, including yourself, live in your household?	Number of people └─┴─┘		C9
Taking the past year, can you tell me what the average earnings of the household have been in US$? *(RECORD ONLY ONE, NOT ALL 3)*	Per week └─┴─┴─┴─┴─┴─┴─┘ T1 Go to		C10a
	OR per month └─┴─┴─┴─┴─┴─┴─┘ T1 Go to		C10b
	OR per year └─┴─┴─┴─┴─┴─┴─┘ T1 Go to		C10c
	Refused 88		C10d

Step 1   Behavioural Measurements

CORE: Tobacco Use		
Now I am going to ask you some questions about tobacco use.		
Question	Response	Code
Do you currently smoke any tobacco products, such as cigarettes, kreteks, tobacco lulun, cigars or pipes? **(USE SHOWCARD)**	Yes 1	T1
	No 2 *If No, go to T8*	
Do you currently smoke tobacco products daily?	Yes 1	T2
	No 2	
How old were you when you first started smoking?	Age (years) Don't know 77 └─┴─┘ If Known, go to T5a/T5aw	T3
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
(RECORD ONLY 1, NOT ALL 3) Don't know 77	OR in Weeks └─┴─┘	T4c
On average, how many of the following products do you smoke each day/week?	DAILY↓ WEEKLY↓	
	Manufactured cigarettes └─┴─┴─┴─┴─┘ └─┴─┴─┴─┴─┘	T5a/T5aw
	Hand-rolled cigarette (tobacco lulun) └─┴─┴─┴─┴─┘ └─┴─┴─┴─┴─┘	T5b/T5bw
(IF LESS THAN DAILY, RECORD WEEKLY)	Pipes full of tobacco └─┴─┴─┴─┴─┘ └─┴─┴─┴─┴─┘	T5c/T5cw
	Kretek └─┴─┴─┴─┴─┘ └─┴─┴─┴─┴─┘	T5d/T5dw
(RECORD FOR EACH TYPE, USE SHOWCARD)	Other └─┴─┴─┴─┴─┘ └─┴─┴─┴─┴─┘ If Other, go to T5other, else go to T6	T5f/T5fw
Don't Know 7777	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, goto 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 eversmoke 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	

How old were you when you stopped smoking?	Age (years) Don't Know 77 └─┴─┘ If Known, go to T12	T10
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 [songe/chewing tobacco, mama malus/betel with songe/chewing tobacco]?*(USE SHOWCARD)*	Yes 1 No 2 If No, go to T15	T12
Do you currently usesmokeless tobacco products daily?	Yes 1 No 2 If No, go to T14aw	T13
	DAILY↓ WEEKLY↓	
On average, how many times a day/week do you use ….	Chewing tobacco/ Songe └─┴─┴─┴─┴─┘ └─┴─┴─┴─┘	T14c/ T14cw
(IF LESS THAN DAILY, RECORD WEEKLY)	Mama Malus/Betel with Songe/chewing tobacco └─┴─┴─┴─┴─┘ └─┴─┴─┴─┘	T14d/ T14dw
(RECORD FOR EACH TYPE, USE SHOWCARD)	Other └─┴─┴─┴─┴─┘ └─┴─┴─┴─┘ If Other, go to T14other, if T13=No, go to T16, else go to T17	T14e/ T14ew
Don't Know 7777	Other (please specify): └─┴─┴─┴─┴─┴─┘ If T13=No, go to T16, else go to T17	T14other/ T14otherw
In the past, did you ever use smokeless tobacco products such as *[songe/chewing tobacco, mama malus/ betel with songe/chewing tobacco]*?	Yes 1 No 2 If No, go to T17	T15
In the past, did you ever use smokeless tobacco products such as *[[songe/chewing tobacco, mama malus/ betel with songe/chewing tobacco]*?daily?	Yes 1 No 2	T16
During the past 30 days, did someone smoke in your home?	Yes 1 No 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 1 No 2 Don't work in a closed area 3	T18

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 purchase.			
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	TP1a
	No	2	
	Don't know	77	
Television	Yes	1	TP1b
	No	2	
	Don't know	77	
Radio	Yes	1	TP1c
	No	2	
	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	TP2
	No	2	
	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	

	Yes	1		
Clothing or other items with a cigarettebrand name or logo	No	2		TP3e
	Don't know	77		
	Yes	1		
Cigarette promotions in the mail	No	2		TP3f
	Don't know	77		
	Yes	1		
During the past 30 days, did you notice any health warnings on cigarette packages?	No	2 If no, go to TP7		TP4
	Did not see any cigarette packages	3 If "did not see any cigarette packages", go to TP7		
	Don't know	77 If Don't know, go to TP7		
The next questions TP5 - TP8 are administered to current smokers only.				
	Yes	1		
During the past 30 days, have warning labels on cigarette packages led you to think about quitting?	No	2		TP5
	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? In US$	Amount	⌊_⌊_⌊_⌊_⌋		TP7
	Don't know	7777		
	Refused	8888		

CORE: Alcohol Consumption			
The next questions ask about the consumption of alcohol.			
Have you ever consumed any alcohol such as beer, wine, spirits orTuaSabu or TuaMutin? *(USE SHOWCARD OR SHOW EXAMPLES)*	Yes	1	A1
	No	2 If No, go to A16	
Have you consumed any alcohol within the past 12 months?	Yes	1 If Yes, go to A4	A2
	No	2	
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	1 If Yes, go to A16	A3
	No	2 If No, go to A16	
During the past 12 months, how frequently have you had at least one standard alcoholic drink? *(READ RESPONSES, USE SHOWCARD)*	Daily	1	A4
	5-6 days per week	2	
	3-4 days per week	3	
	1-2 days per week	4	
	1-3 days per month	5	
	Less than once a month	6	

Have you consumed any alcohol within the past 30 days?	Yes 1 No 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 Don't know 77 ∟__∟__∟		A6
During the past 30 days, when you drank alcohol, how many standarddrinks on average did you have during one drinking occasion?	Number Don't know 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 Don't Know 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 Don't Know 77 ∟__∟__∟		A9

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

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 homebrewed alcohol, 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.

During the past 7 days, did you consume any homebrewed alcohol (TuaSabu,TuaMutin), any alcohol brought over the border/from another country, any alcohol not intended for drinking or other untaxed alcohol? *(USE SHOWCARD)*	Yes 1 No 2 If No, go to A13	A11
On average, how many standard drinks of the following did you consume during the past 7 days?	Homebrewed spirits, e.g. moonshine, TuaSabu ∟__∟__∟	A12a
	Homebrewed beer or wine, e.g. beer, palm or fruit wine, TuaMutin ∟__∟__∟	A12b
[TuaMutin – Standard Drink = 120 ml TuaSabu – Standard Drink = 30 ml]	Alcohol brought over the border/from another country ∟__∟__∟	A12c
(USE SHOWCARD)	Alcohol not intended for drinking, e.g. alcohol-based medicines, perfumes, after shaves ∟__∟__∟	A12d
Don't Know 77	Other untaxed alcohol in the country ∟__∟__∟	A12e

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 examples 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 Don't Know 77 days, go to D3	D1
How many servings of fruit do you eat on one of those days? *(USE SHOWCARD)*	Number of servings Don't Know 77 ⌴⌴⌴	D2
In a typical week, on how many days do you eat vegetables? *(USE SHOWCARD)*	Number of days ⌴⌴⌴ If Zero Don't Know 77 days, go to D5	D3
How many servings of vegetables do you eat on one of those days? *(USE SHOWCARD)*	Number of servings Don't know 77 ⌴⌴⌴	D4
What type of oil or fat is most often used for meal preparation in your household? *(SELECT ONLY ONE)* *(USE SHOWCARD)*	Vegetable oil 1 Lard or suet 2 Butter or ghee 3 Margarine 4 Other 5 If Other, go to D5 other None in particular 6 None used 7 Don't know 77	D5
	Other ⌴⌴⌴⌴⌴⌴⌴⌴	D5other
On average, how many meals per week do you eat that were not prepared at a home? By meal, I mean breakfast, lunch and dinner.	Number Don't know 77 ⌴⌴⌴	D6
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 soya sauce or fish sauce.		
How often do you add salt or a salty sauce such as soya sauce to your food right before you eat it or as you are eating it? *(SELECT ONLY ONE)* *(USE SHOWCARD)*	Always 1 Often 2 Sometimes 3 Rarely 4 Never 5 Don't know 77	DS1
How often is salt, salty seasoning or a salty sauce added in cooking or preparing foods in your household?	Always 1 Often 2 Sometimes 3 Rarely 4 Never 5 Don't know 77	DS2

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, salty foods prepared in quick-service, [KripikSalgadu, AimanasBudu, Balesaun, IkanMaran, NaanMaran, ModoMasin, Churiso] *(USE SHOWCARD)*	Always 1 Often 2 Sometimes 3 Rarely 4 Never 5 Don't know 77	DS3
How much salt or salty sauce do you think you consume?	Far too much 1 Too much 2 Just the right amount 3 Too little 4 Far too little 5 Don't know 77	
How important to you is lowering the salt in your diet?	Very important 1 Somewhat important 2 Not at all important 3 Don't know 77	DS5
Do you think that too much salt or salty sauce in your diet could cause a health problem?	Yes 1 No 2 Don't know 77	1

Do you do anything of the following on a regular basis to control your salt intake? *(RECORD FOR EACH)*		No	2
Limit consumption of processed foods	Yes No	Don't know 2	77
Look at the salt or sodium content on food labels	Yes No	1 2	DS7b
Buy low salt/sodium alternatives	Yes No	1 2	DS7c
Use spices other than salt when cooking	Yes No	1 2	DS7d
Avoid eating foods prepared outside of a home	Yes No	1 2	DS7e
Do other things specifically to control your salt intake	Yes No	1 If Yes, go to S7other 2	DS7f
Other *(please specify)*	└─┴─┴─┴─┴─┴─┴─┘		DS7other

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.			
Work			
Does your work involve vigorous-intensity activity that causes large increases in breathing or heart rate like [carrying or liftingheavy loads, digging, ploughing field, cycle rickshaw driving or construction work] for at least 10 minutes continuously? *(USE SHOWCARD)*	Yes 1 No 2 If No, go to P 4		P1
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	└─┴─┘ : └─┴─┘ hrsmins	P3 (a-b)
Does your work involve moderate-intensity activity, that causes small increases in breathing or heart rate such as brisk walking, housework, gardening, weaving (tais) , carrying water and carrying firewodd[or carrying light loads] for at least 10 minutes continuously? *(USE SHOWCARD)*	Yes 1 No 2 If No, go to P 7		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-intensity activities at work on a typical day?	Hours : minutes	└─┴─┘ : └─┴─┘ hrsmins	P6 (a-b)
Travel to and from places			
The next questions exclude the physical activities at work that you have already mentioned. 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. [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 1 No 2 If No, go to P 10		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?	Hours : minutes	└─┴─┘ : └─┴─┘ hrsmins	P9 (a-b)
Recreational activities			
The next questions exclude the work and transport activities that you have already mentioned. 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 active games like football, judo, karate] for at least 10 minutes continuously? *(USE SHOWCARD)*	Yes 1 No 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?	Hours : minutes ⌴⌴⌴ : ⌴⌴⌴ hrsmins	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, dancing (pochopocho and jumba), volleyball] for at least 10 minutes continuously? [INSERT EXAMPLES] (USE SHOWCARD)	Yes 1 No 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?	Hours : minutes ⌴⌴⌴ : ⌴⌴⌴ hrsmins	P15 (a-b)
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 bus, reading, playing cards or watching television, but do not include time spent sleeping. (USE SHOWCARD)		
How much time do you usually spend sitting or reclining on a typical day?	Hours : minutes ⌴⌴⌴ : ⌴⌴⌴ hrsmins	P16 (a-b)
History of Raised Blood Pressure		
Have you ever had your blood pressure measured by a doctor or other health worker?	Yes 1 No 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 1 No 2 If No, go to H6	H2a
Have you been told in the past 12 months?	Yes 1 No 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 1 No 2	H3
Have you ever seen a traditional healer (matandok) for raised blood pressure or hypertension?	Yes 1 No 2	H4
Are you currently taking any herbal or traditional remedy for your raised blood pressure?	Yes 1 No 2	H5
History of Diabetes		
Have you ever had your blood sugar measured by a doctor or other health worker?	Yes 1 No 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	1	
	No	2 If No, go to H12	H7a
Have you been told in the past 12 months?	Yes	1	
	No	2	H7b
In the past two weeks, have you taken any drugs (medication) for diabetes prescribed by a doctor or other health worker?	Yes	1	H8
	No	2	
Are you currently taking insulin for diabetes prescribed by a doctor or other health worker?	Yes	1	H9
	No	2	
Have you ever seen a traditional healer(matandok) for diabetes or raised blood sugar?	Yes	1	H10
	No	2	
Are you currently taking any herbal or traditional remedy for your diabetes?	Yes	1	H11
	No	2	

History of Raised Cholesterol			
Have you ever had your cholesterol (fat levels in your blood) measured by a doctor or other health worker?	Yes	1	H12
	No	2 If No, go to H17	
Have you ever been told by a doctor or other health worker that you have raised cholesterol?	Yes	1	H13a
	No	2 If No, go to H17	
Have you been told in the past 12 months?	Yes	1	H13b
	No	2	
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	1	H14
	No	2	
Have you ever seen a traditional healer (matandok) for raised cholesterol?	Yes	1	H15
	No	2	
Are you currently taking any herbal or traditional remedy for your raised cholesterol?	Yes	1	H16
	No	2	

History of Cardiovascular Diseases			
Have you ever had a heart attack or chest pain from heart disease (angina) or a stroke (cerebrovascular accident or incident)?	Yes	1	H17
	No	2	
Are you currently taking aspirin regularly to prevent or treat heart disease?	Yes	1	H18
	No	2	
Are you currently taking statins (Lovostatin/Simvastatin/ Atorvastatin or an`y other statin) regularly to prevent or treat heart disease?	Yes	1	
	No	2	H19

Lifestyle Advice			
During the past three years, has a doctor or other health worker advised you to do any of the following? *(RECORD FOR EACH)*			
Quit using tobacco or don't start	Yes	1	H20a
	No	2	

Reduce salt in your diet	Yes 1 No 2	H20b
Eat at least five servings of fruit and/or vegetables each day	Yes 1 No 2	H20c
Reduce fat in your diet	Yes 1 No 2	H20d
Start or do more physical activity	Yes 1 No 2	H20e
Maintain a healthy body weight or lose weight	Yes 1 If C1=1 go to M1 No 2 If C1=1 go to M1	H20f

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 1 No 2 Don't know 77	CX1

Violence and Injury

The next questions ask about different experiences and behaviours that are related to road traffic injuries.

Question	Response		Code
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	
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	
		88 If Refused, go to V8	
	Refused		
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)	└─┴─┴─┴─┴─┴─┴─┘	V6other
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)	└─┴─┴─┴─┴─┴─┴─┘	V7other

The next questions ask about behaviours related to your safety and whether or not you drink alcohol while driving or being a passenger.			
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	
The following questions are about different experiences and behaviours that are related to violence.			
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 knife/arrow) 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	

The next questions ask about behaviours related to your safety.			
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 No Refused	1 2 If no, go to V19 88 If refused, go to V19	V17
Please specify of whom you were most often frightened.	Intimate partner Parent Child, sibling, or other relative Friend or acquaintance Unrelated caregiver Stranger Official or legal authority Other (specify) Refused	1 2 3 4 5 6 7 8 88	V18
	Other (please specify)	└─┴─┴─┴─┴─┴─┴─┘	V18other

Step 2   Physical Measurements

CORE: Blood Pressure and Heart Rate			
Interviewer ID		└─┴─┴─┴─┘	M1
Device ID for blood pressure		└─┴─┘	M2
Reading 1	Systolic (mmHg)	└─┴─┴─┘	M4a
Blood Pressure	Diastolic (mmHg)	└─┴─┴─┘	M4b
Heart rate	Beats per minute	└─┴─┴─┘	M16a
Reading 2	Systolic (mmHg)	└─┴─┴─┘	M5a
Blood Pressure	Diastolic (mmHg)	└─┴─┴─┘	M5b
Heart rate	Beats per minute	└─┴─┴─┘	M16b
Reading 3	Systolic (mmHg)	└─┴─┴─┘	M6a
Blood pressure	Diastolic (mmHg)	└─┴─┴─┘	M6b
Heart rate	Beats per minute	└─┴─┴─┘	M16c
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 No	1 2	M7
CORE: Height and Weight			
Question	Response		Code
For women: Are you pregnant?	Yes No	1 If Yes, go to M 16 2	M8
Interviewer ID		└─┴─┴─┴─┘	M9

Device IDs for height and weight	Height	└─┴─┴─┘	M10a
	Weight	└─┴─┴─┘	M10b
Height	in Centimetres (cm)	└─┴─┴─┴─┘ . └─┘	M11
Weight If too large for scale 666.6	in Kilograms (kg)	└─┴─┴─┘ . └─┘	M12
CORE: Waist			
Device ID for waist		└─┴─┘	M13
Waist circumference	in Centimetres (cm)	└─┴─┴─┘ . └─┘	M14

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 1 No 2	B1
Technician ID	└─┴─┴─┴─┘	B2
Device ID	└─┴─┴─┘	B3
Time of day blood specimen taken (24 hour clock)	Hours : minutes	└─┴─┘ : └─┴─┘ hrsmins	B4
Fasting blood glucose *[CHOOSE ACCORDINGLY: MMOL/L OR MG/DL]*	mmol/l	└─┴─┘ . └─┴─┘	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 1 No 2	B6
CORE: Blood Lipids		
Device ID	└─┴─┴─┘	B7
Total cholesterol *[CHOOSE ACCORDINGLY: MMOL/L OR MG/DL]*	mmol/l	└─┴─┘ . └─┴─┘	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 1 No 2	B9

Annex 3: Sampling methodology

List of districts, sub-districts and susos in Timor-Leste with their populations and household numbers

District	Sub-district	Population	Household	Cumulative population	Cumulative household
1. Dili	Vera Cruz	34 015	5318		
	Nain Feto	28 592	4015		
	Metinaro	4727	872	230 426	35 224
	Atauro	8602	1618		
	Dom Aleixo	105 154	15 896		
	Cristo Rei	54 936	7505		
2. Ermera	Railaco	10 384	1632		
	Ermera	33 530	5232		
	Letefoho	20 887	3754	117 064	19 280
	Atsabe	17 264	3056		
	Hatolia	34 999	5656		
3. Baucau	Baucau	46 500	7438		
	Laga	14 432	2868		
	Quelicai	16 747	4028	111 694	21 255
	Baguia	9465	2109		
	Vemase	9008	1674		
	Venilale	15 542	3138		
4. Bobonaro	Maliana	25 234	4320		
	Cailaco	9957	2015		
	Balibo	1485	2784	92 049	16 883
	Atabae	11 024	1826		
	Lolotoe	7129	1434		
	Bobonaro	23 854	4504		
5. Viqueque	Uatucarbau	7212	1499		
	Ossu	15 612	3134		
	Watulari	16 912	3465	70 036	13 807
	Viqueque	24 387	4616		
	Lacluta	5853	1093		
6. Oecussi	PanteMacasar	35 226	7290		
	Nitibe	11 366	2609	64 025	13 890
	Oesilo	9861	2224		
	Passabe	7572	1767		

District	Sub-district	Population	Household	Cumulative population	Cumulative household
7. Liquiça	Liquica	20 938	3351	63 403	10 352
	Maubara	18 570	3299		
	Bazartete	23 955	3701		
8. Lautem	Lospalos	29 236	547	59 787	11 447
	Lautem	14 147	2932		
	Iliomar	7201	1429		
	Luro	5367	1108		
	Tutuala	3836	731		
9. Covalima	Fatululic	1894	422	59 455	11 015
	Fatumean	3332	615		
	Fohorem	4092	873		
	Maukatar	6291	1474		
	Suai	25 164	4359		
	Tilomar	7043	1355		
	Zumalai	11 639	2307		
10. Ainaro	Ainaro	15 558	2292	59 175	9664
	Hatu-Builico	11 950	2058		
	Hatu-Udo	22 022	3604		
	Maubisse	9695	1710		
11. Manufahi	Same	27 554	4548	48 628	7856
	Alas	7179	1179		
	Fatuberliu	6902	1110		
	Turiscai	6993	1019		
12. Manatuto	Manatuto	12 555	1823	42 742	6925
	Laleia	3089	752		
	Laclo	7618	1273		
	Soibada	3030	444		
	Barique/ Natarbora	4678	843		
	Laclubar	11 682	1790		
13. Aileu	Aileu Vila	20 830	3274	44 325	6965
	Liquidoe	6267	1104		
	Remexio	10 055	1497		
	Laulara	7173	1090		

National survey for noncommunicable disease risk factors and injuries using WHO STEPS approach in Timor-Leste – 2014

Detailed Sampling Methodology

Multistage stratified cluster sampling method was used. All districts were included in the sample. The Enumeration Areas (EAs) were selected by PPS from all 13 districts.

Table 1: Choice of Sampling Unit for the NCDRF Survey

Sampling Unit	Description	Proposed Numbers
First Stage (Primary)	Enumeration Area	150
Second Stage (Secondary)	Household	18
Third Stage (Tertiary)	Individual	1

Sampling Procedure

Note: Data from Census 2010 were used for all sampling considerations. Even though planning and mapping for 2015 Census is ongoing, data from the Census will only be available after July 2015.

STEP 1: Selection of Enumeration Area

(1) List of EA with number of HH by district for Census 2010 was obtained from the Directorate of Statistics. There are 1826 EAs in Timor-Leste. Out of these, 150 EAs were selected.

(2) The number of EAs to be selected from each district was based on their proportion in the country's population as per Census 2010 (See Table 2 below).

(3) The numbers of Households (HH) per EAs varied from 0 to more than 300. Therefore, probability proportion to size (PPS) was used.

(4) For each district, the EAs were arranged in ascending order of HH size.

(5) Sampling interval was obtained by dividing the total number of HH in the district by the number of EA to be selected from that district.

(6) A random number was generated between one and the sampling interval for that district, using tools available at random.org.

(7) The EA where that random number fell was the first EA to be selected.

(8) Subsequently, the sampling interval was added to the random number and the EA where this new number fell was selected. For the next number, the sampling interval was added to the number and so on, till the population of HH was exhausted or target number of EA achieved.

(9) This was done separately for each district.

(10) The final list was compiled and had 150 EAs. This list is shown in Annex 2. These are spread over about 125 *sucos*.

STEP 2. Selection of Households in an Enumeration Area

Listing the house numbers to be visited

(1)   It was decided to use the 2010 HH size of each EA. Based on past experience, it was expected that the increase would be on an average about 4–5%.

(2)   The list of households to be selected by enumerators was decided centrally.

(3)   Sampling interval was calculated by dividing the total number of households in the EA by 18.

(4)   The first HH number was selected randomly by reading the last two digits of a currency note. If the number represented by the two digits was more than 18, the last digit was taken into consideration. For each EA, a different currency note was used. This could also be done it by using the tool at random.org. or by draw of lots.

(5)   The subsequent HH are identified by adding the sampling interval as was done for selection of EA. A worked out example is shown below.

Worked out Example

(i)   Let us assume that an enumeration area has a listed population of 312 HHs.

(ii)   First the sampling interval is calculated = 312/18 = 17.33. It is always rounded off to lower integer. So, the sampling interval is 17.

(iii)   A number between 1 and 17 is randomly selected. Let it be 9. This means that the first house is the ninth house in the enumeration area.

(iv)   The next house will be 9+ 17 = 26 or 26th House.

(v)   Subsequent 16 houses can be obtained by continuing to add 17 to it i.e. 43,60,77,94,111,128, 145,162,179,196,213,230,247,264,281,298.

Annex 4: Fact Sheet

The STEPS survey of noncommunicable disease (NCD) risk factors in Timor-Leste was carried out from October to December 2014. Timor-Leste carried out Step 1, Step 2 and Step3. Socio demographic and behavioural 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 multistage complex sample design was used to produce representative data for that age range in Timor-Leste. A total of 2609 adults participated in the survey. The overall response rate was (96%). A repeat survey is planned for 2019 if funds permit.

Results for adults aged 18-69 years (incl. 95% CI)	Both Sexes	Males	Females
Step 1: Tobacco Use			
Percentage who currently smoke tobacco	48.6% (38.4 – 58.7)	69.5% (67.0 – 72.0)	9.6% (5.8 – 13.4)
Percentage who currently smoke tobacco daily	35.0% (29.8 – 40.3)	49.6% (46.3 – 53.0)	7.8% (2.8 – 12.8)
For those who smoke tobacco daily			
Average age started smoking (years)	16.4 (15.2 – 17.6)	16.3 (15.3 – 17.3)	17.6 (13.8 – 21.5)
Percentage of daily smokers smoking manufactured cigarettes	94.5% (87.7 – 100.0)	94.6% (88.0 – 100.0)	93.0% (82.5 – 100.0)
Mean number of manufactured cigarettes smoked per day (by smokers of manufactured cigarettes)	12.1 (8.6 – 15.7)	12.9 (8.9 – 17.0)	2.9 (1.6 – 4.2)
Step 1: Alcohol Consumption			
Percentage who are lifetime abstainers	57.7% (53.7 –61.8)	39.4% (37.2 – 41.6)	92.1% (86.3 – 97.9)
Percentage who are past 12 month abstainers	5.5% (4.8 – 6.1)	6.9% (6.2 – 7.6)	2.8% (0.6 – 5.1)
Percentage who currently drink (drank alcohol in the past 30 days)	28.6% (20.3 – 36.9)	42.8% (37.1 – 48.6)	2.0% (0.5 – 3.6)
Percentage who engage in heavy episodic drinking (6 or more drinks on any occasion in the past 30 days)	14.5% (12.7 – 16.4)	21.8% (20.1 – 23.4)	1.0% (0.1 – 1.9)
Step 1: Diet			
Mean number of days fruit consumed in a typical week	2.3 (1.8 – 2.8)	2.2 (1.9 – 2.5)	2.6 (1.5 – 3.7)
Mean number of servings of fruit consumed on average per day	0.9 (0.6 – 1.2)	1.0 (0.7 – 1.2)	0.9 (0.5 – 1.2)
Mean number of days vegetables consumed in a typical week	6.7 (6.3 – 7.0)	6.7 (6.3 – 7.1)	6.6 (6.3 – 6.9)
Mean number of servings of vegetables consumed on average per day	5.0 (3.1 – 7.0)	6.3 (3.8 – 8.9)	2.8 (2.5 – 3.0)
Percentage who ate less than 5 servings of fruit and/or vegetables on average per day	77.5% (73.0 – 82.0)	70.7% (64.1 – 77.3)	90.4% (82.9 – 97.8)
Percentage who always or often add salt or salty sauce to their food before eating or as they are eating	78.0 (70.2 – 85.8)	74.7 (67.0 – 82.5)	84.1 (79.2 – 89.0)
Percentage who always or often eat processed foods high in salt	12.9 (10.9 – 14.8)	15.8 (12.2 – 19.4)	7.3 (1.8 – 12.9)
Step 1: Physical Activity			
Percentage with insufficient physical activity (defined as < 150 minutes of moderate-intensity activity per week, or equivalent)*	16.7% (7.8 – 25.6)	12.8% (7.6 – 18.0)	23.3% (10.9 – 35.7)
Median time spent in physical activity on average per day (minutes) (presented with inter-quartile range)	85.7 (34.3-199.3)	154.3 (34.3 – 248.6)	47.1 (21.4 – 102.9)
Percentage not engaging in vigorous activity	52.4% (50.6 – 54.1)	39.9% (38.0 – 41.9)	73.3% (64.0 – 82.6)

* 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)

Results for adults aged 18-69 years (incl. 95% CI)	Both Sexes	Males	Females
Step 1: Cervical Cancer Screening			
Percentage of women aged 30-49 years who have ever had a screening test for cervical cancer			1.1% (0.0 – 2.3)
Step 2: Physical Measurements			
Mean body mass index - BMI (kg/m^2)	21.2 (21.0 – 21.5)	21.3 (20.9 – 21.8)	21.0 (20.7 – 21.3)
Percentage who are overweight (BMI $\geq$ 25 kg/m^2)	11.2% (10.3 – 12.2)	8.2% (7.2 – 9.1)	16.7% (12.4 – 21.0)
Percentage who are obese (BMI $\geq$ 30 kg/m^2)	0.9% (0.0 – 1.8)	0.7% (0.0 – 1.5)	1.3% (0.2 – 2.4)
Average waist circumference (cm)		71.3 (68.0 – 74.7)	77.4 (75.7 – 79.0)
Mean systolic blood pressure – SBP (mmHg), including those currently on medication for raised BP	129.0 (123.7 – 134.4)	133.1 (126.9 – 139.2)	121.4 (120.7 -122.2)
Mean diastolic blood pressure – DBP (mmHg), including those currently on medication for raised BP	83.1 (80.4 – 85.8)	83.5 (80.7 – 86.2)	82.4 (80.1 – 84.7)
Percentage with raised BP (SBP $\geq$ 140 and/or DBP $\geq$ 90 mmHg or currently on medication for raised BP)	39.3% (23.2 – 55.4)	45.3% (27.3 – 63.3)	28.0% (21.5 – 34.5)
Percentage with raised BP (SBP $\geq$ 140 and/or DBP $\geq$ 90 mmHg) who are not currently on medication for raised BP	97.3% (93.2 – 100.0)	98.1% (95.0 – 100.0)	94.7% (89.4 – 100.0)
Step 3: Biochemical Measurement			
Mean fasting blood glucose, including those currently on medication for raised blood glucose (mmol/L)	4.3 (4.2 – 4.4)	4.4 (4.3 – 4.6)	4.1 (4.0 – 4.3)
Percentage with impaired fasting glycaemia as defined below • capillary whole blood value $\geq$5.6 mmol/Land <6.1 mmol/L	4.1% (2.2 – 6.1)	5.7% (3.0 – 8.5)	1.2% (0.2 – 2.2)
Percentage with raised fasting blood glucose as defined below or currently on medication for raised blood glucose • capillary whole blood value $\geq$ 6.1 mmol/L	1.5% (0.0 – 3.2)	1.5% (0.0 – 3.5)	1.6% (0.3 – 2.9)
Mean total blood cholesterol, including those currently on medication for raised (mmol/L)	3.9 (3.7 – 4.0)	3.7 (3.6 – 3.8)	4.2 (3.8 – 4.5)
Percentage with raised total cholesterol ($\geq$ 5.0 mmol/L or currently on medication for raised cholesterol)	21.0% (11.4 – 30.6)	18.5% (9.8 – 27.2)	25.5% (12.0 – 39.0)
Cardiovascular disease (CVD) risk			
Percentage aged 40-69 years with a 10-year CVD risk $\geq$ 30%, or with existing CVD**	1.4% (0.0 – 2.9)	0.9% (0.0 – 2.2)	2.9% (1.5 – 4.1)
Summary of combined risk factors			
• current daily smokers • less than 5 servings of fruits & vegetables per day • insufficient physical activity	• overweight (BMI > 25 kg/m2) • raised BP (SBP > 140 and/or DBP > 90 mmHg or currently on medication for raised BP)		
Percentage with none of the above risk factors	7.8% (6.4 – 9.3)	10.1% (6.7 – 13.4)	4.2% (0.6 – 7.9)
Percentage with three or more of the above risk factors, aged 18 to 44 years	16.3% (13.5-19.1)	16.0% (14.2-17.8)	16.7 % (11.3 – 22.1)
Percentage with three or more of the above risk factors, aged 45 to 69 years	28.2% (22.8-33.5)	32.0% (29.6 – 34.3)	16.1% (12.1 – 20.1)
Percentage with three or more of the above risk factors, aged 18 to 69 years	19.4% (16.1-22.7)	21.1% (19.0 – 23.3)	16.6% (12.0 – 21.3)

** A 10-year CVD risk of $\geq$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).

National survey for noncommunicable disease risk factors and injuries using WHO STEPS approach in Timor-Leste – 2014

The findings from the Timor-Leste STEPs Noncommunicable Disease Risk Factor Survey 2014 provide information on important indicators such as tobacco use, alcohol consumption, dietary habits, physical inactivity, salt intake history, history of exposure to screening for cancer cervix, body mass index (BMI) measurement, blood pressure measurement, biochemical measurement of blood glucose and cholesterol in a national representative sample age group of 1869 years in Timor-Leste for the first time. This survey provides Timor-Leste an opportunity to know baseline information on NCD risk factors as well as an opportunity to compare with other countries. In addition, findings will help to better understand the effect of interventions and formulate strategies for improved tobacco control intervention among youth.

The rich data contained in this document will be useful to programme managers, researchers, NCD control advocates and any other relevant stakeholders. The data will generate credible evidence to promote NCD control and to formulate strategies for strengthening NCD control in the country.