

**Lao People's Democratic Republic**

**Peace, Independence, Democracy, Unity and Prosperity**

# **Report on STEPS Survey on Non Communicable Diseases Risk Factors in Vientiane Capital city, Lao PDR**

## **Steering Committee**

- Professor Eksavang Vongvichith M.D.Ph.D.<sup>1</sup>
- Professor Dr. Sommone Phounsavath M.D.<sup>1</sup>
- Assoc. Prof. Chanphomma Vongsamphane<sup>1</sup> (Lao MoH's NCD Project Manager)
- Assoc. Prof. Bounkong Syhavong M.D.<sup>2</sup>
- Assoc. Prof. Bouachanh Rassachack M.D.<sup>2</sup>
- Phoukhieng Douangchack M.D.<sup>3</sup>
- Assoc. Prof. Khampe Phongsavath M.D.<sup>4</sup>
- Supachai Douangchak M.D.<sup>5</sup> (WHO's NCD Project Manager in Lao PDR)
- Other members from the Coordinating and secretariat Committees

## **Research Team**

- |                                                             |                                                         |
|-------------------------------------------------------------|---------------------------------------------------------|
| - Assoc. Prof. Dr.Vang Chu M.D., Ph.D., FAsCC. <sup>2</sup> | Principal Investigator<br>Lao MoH's NCD Project Manager |
| - Cowan Melanie MPH <sup>5</sup>                            | Technical Officer, WHO, HQ.                             |
| - Chandavone Phoxay M.D., Ph.D. <sup>1</sup>                | Research team member                                    |
| - Snong Thongsana MD. MMedSc <sup>3</sup>                   | Research team member                                    |
| - Xaysana Sombandith MD, MMedSc <sup>2</sup>                | Research team member                                    |
| - Bounmy Sisamouth MD., MMedSc <sup>4</sup>                 | Research team member                                    |
| - Velouvanh Manivong MD., MMedSc <sup>3</sup>               | Research team member                                    |
| - Itdemer Boundachoundara M.D. <sup>2</sup>                 | Research team member                                    |

## **Funding and Technical Assistance: World Health Organization**

## **Legend**

1. Curative department, Ministry of Health
2. Mahosot hospital, Ministry of Health
3. Mittapab hospital, Ministry of Health
4. Sethathirath hospital, Ministry of Health
5. WHO

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# Table of Content

Table of Content .....	2
Executive Summary .....	5
I Introduction .....	12
1.1 Background of Lao PDR .....	12
1.2 Chronic Diseases and their risk Factors in Laos.....	12
1.2.1 Chronic Diseases.....	12
1.2.2 Non Communicable Diseases Risk Factors.....	14
1.3 Problem Statement .....	15
1.4 objectives .....	16
1.4.1 General Objectives .....	16
1.4.2 Specific Objectives.....	16
II Methods .....	17
2.1 Scope .....	17
2.2 Study Population .....	17
2.3 Sample size .....	17
2.4 Sampling.....	18
2.5 Timeframe .....	18
2.7 Instrument and data collection process .....	19
2.7.1 Instrument.....	19
2.7.2 Data collection process.....	19
2.8 Data entry.....	20
2.9 Data Analysis .....	20
III Results.....	21
3.1 Demographics.....	21
3.2 NCD Risk Factors.....	24

3.2.1	Tobacco Use .....	24
3.2.2	Alcohol Consumption .....	25
3.2.3	Diet .....	27
3.2.4	Physical Activity .....	30
3.2.5	Health History .....	34
3.2.6	Body Mass Index (BMI) .....	35
3.2.7	Blood pressure .....	36
3.2.8	Waist and hip circumference .....	37
3.2.9	Heart rate .....	37
3.2.10	Combined Risk Factors .....	38
IV	Discussion .....	40
4.1	Representation .....	40
4.2	Key Results and New Knowledge .....	40
V	Conclusion and Recommendations .....	42
5.1	Conclusions .....	42
5.2	Recommendations .....	44
VI	References .....	45
APPENDICES .....		49
Appendix A: Kish Method used to randomize participant to this study .....		49
1	<i>Kish Household List</i> .....	49
2	<i>Kish Household Coversheet</i> .....	50
Appendix B: Information Sheet and Consent Forms .....		52
Appendix C Questionnaire form .....		54
Appendix D: Interview Tracking Form .....		93
Appendix E: Show Cards .....		94
Appendix F Workshop on planning and implementation of .....		98
TEPWISE approach to surveillance of chronic Diseases Risk Factors .....		98

Appendix G	Data Collector Training Workshop Contents.....	101
Appendix H:	Declarations.....	105
Appendix I:	Data collectors training workshop agenda .....	106
Appendix J:	Lao STEPS Data Book.....	108

## Executive Summary

### **BACKGROUND AND PURPOSE :**

Ongoing surveillance of changes in population levels of the major NCD risk factors is crucial if we are to understand the impact of preventive efforts. Previous studies performed in Lao PDR have shown that major chronic diseases were the main causes of death in Laos. The main causes of cardiovascular death have been stroke, heart failure and acute myocardial. No survey on NCD risk factors has ever been conducted in Laos and little data concerning to NCD risk factors is available. An up-to-date National NCD policy/action plan is not yet available. The aim of this study is to determine the burden of NCD risk factors in Laos.

### **METHODOLOGY:**

The participants were selected from across the 9 health districts of Vientiane Capital City. In order to draw a representative probability sample, a list of all 497 villages within these 9 health districts was obtained from the Vientiane Capital City Health Department. This list was generated in early 2005. Probability proportional to size sampling was used to select 72 villages from this list. For each selected village, a list of households was obtained from the head of each village and between 6 and 222 households, with more households drawn from larger villages were selected from each village using simple random sampling. One participant was then selected from each household using the Kish Method at the time of first contact between the data collector and a member of the household.

The generic STEPS Instrument was slightly modified for use in the Lao STEPS survey. Only STEP 1 and 2 were included in the survey. Step 1 contains questions on the basic demographics of the respondents: age, sex, level of education, ethnicity, employment status and income. Following this section are questions on the key behavioral risk factors for NCDs, these include: tobacco use, alcohol consumption, diet and physical activity. STEP 1 also included questions about history of raised blood pressure and diabetes. Show cards were used for many questions to help participants understand and give appropriate answers. In STEP 2, participants had their height, weight, waist and hip circumference, blood pressure, and heart rate measured.

Data were cleaned and analyzed by the survey coordinator with the assistance of WHO staff during a data analysis workshop held in September 2009. Epi Info was used to complete the descriptive analyses using the standard analysis programs provided by WHO, which ensure unclean records are excluded from each analysis. Sample weights, equal to the inverse of the probability of selection, were calculated for all records using the sampling information. The probability of selection at all stages of sampling (village, household and individual) was included in the calculation of these weights. Since non-response was very low and recent data on the age-sex structure of Vientiane Capital City was not available, weighting for non-response and a post-adjustment for age and sex were not done. Weighted complex sample analyses were completed for all measures and standard errors were used to obtain 95% confidence intervals for all results, which were used to check for significant differences between subgroups.

## RESULTS

A total of 4180 people, 1691 males (40.5%) and 2489 females (59.5%), aged from 25 to 64 years were included in this study. Most of them (95.7%) were from the Lao Lum ethnic group. The rate of tobacco smoking was significantly higher in males for all age groups. Among current smokers, 98.7% are current daily smokers and among daily smokers. Men also use more smokeless tobacco than women (14.6% vs 1.1%). The rate of alcohol drinking was significantly higher for males (72% versus 36%). The mean number of standard drinks consumed on a drinking day was 9. The percentage of current drinkers who drank alcohol on 4 or more days in the past 7 days were 12.4 for males and 8,3 % for females. Among this same group, 59.2% of men and 65.2% of the women engaged in binge drinking on any day in the last week. The percentage of population who consumed less than five standard servings of fruit and/or vegetables on average per day was 36.6%. The type of oil most used to cook was vegetable oil. The percentage of population attained a high level of physical activity was 64.1%. Males spent more time in physical activity than female (4 hours versus 2 hours). Seventy percent of physical activity is related to work and 68.2% of the population does no physical activity during their recreational time . Mean waist/hip ratio were 0.9 for both sexes and the percentage of population with heart rate per minute over 100 was 3.1 % for men and 2.9 % for women. Twenty-seven percent of the population is overweight and 5.8% is obese. Twenty percent of women and 24.9% of men have raised blood pressure (SBP $\geq$ 140 and/or DBP $\geq$ 90) or are on medication for raised blood pressure. Percentage with raised blood pressure (SBP  $\geq$ 160 and/or DBP  $\geq$ 100 mmHg or currently on medication for raised BP) was 8.9 %. More than 80% of the people with raised blood pressure were not on medication. Amongst these individuals, 83.8% are not on medication for raised blood pressure.

The percentage of the population with one or more of the following risk factors was also calculated:

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

In Vientiane capital city 59.8% of the population has 1 or 2 of these risk factors and an additional 9.2% have 3 or more risk factors.

## Conclusion / Recommendations

The survey results show that the most relevant non-communicable diseases risk factors affecting a considerable part of the population of Vientiane capital city are raised blood pressure, tobacco use among men, excessive alcohol consumption, low exercise and low fruit and vegetable intake.

Lao National Policy or action plans on non-communicable disease prevention and control is necessary. Interventional programs to prevent and control these risk factors are required. Mass education program to prevent chronic diseases should be set up.



# Vientiane Capital City, Lao PDR

## STEPS Survey 2008

### Fact Sheet

The STEPS survey of chronic disease risk factors in Vientiane Capital City, Lao PDR was carried out from January, 2008 to April, 2008. Vientiane Capital City, Lao PDR carried out Step 1 and Step 2. Socio demographic and behavioural information was collected in Step 1. Physical measurements such as height, weight and blood pressure were collected in Step 2. The STEPS survey in Vientiane Capital City, Lao PDR was a population-based survey of adults aged 25-64. A multi-stage cluster sample design was used to produce representative data for that age range in Vientiane Capital City, Lao PDR. A total of 4,180 adults participated in the Vientiane Capital City, Lao PDR STEPS survey. The overall response rate was 99%. A repeat survey is planned for 2013 if funds permit.

Results for adults aged 25-64 years (incl. 95% CI)	Both Sexes	Males	Females
<b>Step 1 Tobacco Use</b>			
Percentage who currently smoke tobacco	<b>19.0%</b> (15.5 – 22.6)	<b>43.2%</b> (36.9 – 49.6)	<b>2.0%</b> (1.0 – 3.0)
Percentage who currently smoke tobacco daily	<b>18.8%</b> (15.2 – 22.3)	<b>42.6%</b> (36.3 – 49.0)	<b>2.0%</b> (1.0 – 3.0)
<i>For those who smoke tobacco daily</i>			
Average age started smoking (years)	<b>19.7</b> (19.1– 20.4)	<b>19.7</b> (19.0 – 20.3)	*
Percentage smoking manufactured cigarettes	<b>84.6%</b> (15.2 – 22.3)	<b>85.0%</b> (80.5 – 89.6)	*
Mean number of manufactured cigarettes smoked per day	<b>10.6</b> (9.6 – 11.5)	<b>11.0</b> (10.0 – 11.9)	*
<b>Step 1 Alcohol Consumption</b>			
Percentage of abstainers (who did not drink alcohol in the last year )	<b>44.0%</b> (40.3-47.8%)	<b>21.3%</b> (17.1-25.5%)	<b>58.9%</b> (54.3-63.5)
Percentage of current drinkers (who drank alcohol in the past 30 days)	<b>50.0%</b> (46.5-53.4%)	<b>72.0%</b> (66.9-77.1%)	<b>35.6%</b> (31.9-39.3%)
<i>Among current drinkers</i>			



Percentage who drank alcohol on 4 or more days in the last week	<b>10.5%</b> (7.6-13.5%)	<b>12.4%</b> (9.3-15.5%)	<b>8.3%</b> (3.1-13.4%)
Percentage who binge drink (men who had 5 or more / women who had 4 or more drinks on any day in the last week)	--	<b>59.3%</b> (53.1-65.4%)	<b>65.2%</b> (54.2-76.1%)
<b>Step 1 Fruit and Vegetable Consumption (in a typical week)</b>			
Mean number of days fruit consumed	<b>5.1</b> (5.0-5.3)	<b>4.9</b> (4.6-5.1)	<b>5.3</b> (5.1-5.5)
Mean number of servings of fruit consumed on average per day	<b>3.5</b> (3.3-3.7)	<b>3.4</b> (3.1-3.8)	<b>3.6</b> (3.3-3.8)
Mean number of days vegetables consumed	<b>6.5</b> (6.3-6.6)	<b>6.4</b> (6.2-6.5)	<b>6.5</b> (6.4-6.7)
Mean number of servings of vegetables consumed on average per day	<b>4.7</b> (4.3-5.1)	<b>4.7</b> (4.2-5.3)	<b>4.6</b> (4.2-5.3)
Percentage who ate less than 5 combined servings of fruit and/or vegetables on average per day	<b>36.6%</b> (29.9-43.3)	<b>40.2%</b> (33.8-46.6)	<b>34.5%</b> (27.2-41.7)
<b>Step 1 Physical Activity</b>			
Percentage with low levels of activity <sup>+</sup>	<b>14.2%</b> (11.3 – 17.1)	<b>10.4%</b> (7.7 – 13.1)	<b>16.7%</b> (13.0 – 20.3)
Percentage with high levels of activity <sup>+</sup>	<b>64.1%</b> (61.1 – 67.1)	<b>72.1%</b> (68.2 – 76.0)	<b>59.1%</b> (54.0 – 64.2)
Median time spent in physical activity per day (minutes)	<b>180.0</b> (60.0 – 450.0)	<b>268.6</b> (70.0 – 480.0)	<b>132.9</b> (42.9 – 377.1)
Percentage not engaging in vigorous physical activity	<b>52.8%</b> (49.7 – 56.0)	<b>34.6%</b> (30.4 – 38.8)	<b>64.3%</b> (60.7 – 67.8)

<sup>+</sup> For definitions of low and high levels of physical activity, please see the GPAQ Analysis Guide, available at: <http://www.who.int/chp/steps/GPAQ/en/index.html>



# Vientiane Capital City, Lao PDR

## STEPS Survey 2008

### Fact Sheet

Results for adults aged 25-64 years (incl. 95% CI)	Both Sexes	Males	Females
<b>Step 2 Physical Measurements</b>			
Mean body mass index - BMI (kg/m <sup>2</sup> )	<b>23.5</b> (23.1-23.9)	<b>23.1</b> (22.6-23.5)	<b>23.7</b> (23.3-24.1)
Percentage who are overweight (BMI ≥25 kg/m <sup>2</sup> )	<b>27.4%</b> (24.7-30.2)	<b>23.8%</b> (18.8-28.8)	<b>29.9%</b> (26.9-32.8)
Percentage who are obese (BMI ≥30 kg/m <sup>2</sup> )	<b>5.8%</b> (4.1-7.4)	<b>4.5%</b> (2.4-6.6)	<b>6.6%</b> (4.9-8.3)
Average waist circumference (cm)	-	<b>76.5</b> (73.8-79.2)	<b>75.2</b> (73.2-77.2)
Mean systolic blood pressure - SBP (mmHg), including those currently on medication for raised BP	<b>124.6</b> (123.0-126.3)	<b>128.1</b> (126.3-129.9)	<b>122.2</b> (120.4-124.1)
Mean diastolic blood pressure - DBP (mmHg), including those currently on medication for raised BP	<b>76.8</b> (75.8-77.7)	<b>77.8</b> (76.8-78.9)	<b>76.1</b> (75.0-77.1)
Percentage with raised BP (SBP ≥140 and/or DBP ≥90 mmHg or currently on medication for raised BP)	<b>22.3%</b> (18.0-26.5)	<b>24.9%</b> (20.1-29.7)	<b>20.5%</b> (16.2-24.8)
Percentage with raised BP (SBP ≥160 and/or DBP ≥100 mmHg or currently on medication for raised BP)	<b>8.9%</b> (5.7-12.1)	<b>7.3%</b> (5.4-9.1)	<b>10.1%</b> (4.6-15.5)

Summary of combined risk factors			
<ul style="list-style-type: none"> <li>current daily smokers</li> <li>less than 5 servings of fruits and/or vegetables on average per day</li> <li>Low level of activity</li> <li>overweight (BMI <math>\geq 25</math> kg/m<sup>2</sup>)</li> <li>raised BP (SBP <math>\geq 140</math> and/or DBP <math>\geq 90</math> mmHg or currently on medication for raised BP)</li> </ul>			
Percentage with none of the risk factors included above	<b>31.0%</b> (24.9-31.0)	<b>21.0%</b> (15.8-26.2)	<b>36.6%</b> (21.0-36.2)
Percentage with at least three of the risk factors included above, aged 25 to 44 years old	<b>6.4%</b> (4.4-8.4)	<b>9.4%</b> (6.1-12.7)	<b>4.9%</b> (2.7-7.2)
Percentage with at least three of the risk factors included above, aged 45 to 64 years old	<b>13.3%</b> (9.1-17.4)	<b>17.5%</b> (11.1-23.8)	<b>10.4%</b> (6.2-14.6)
Percentage with at least three of the risk factors included above, aged 25 to 64 years old	<b>9.2%</b> (6.6-11.8)	<b>13.1%</b> (9.2-17.0)	<b>7.0%</b> (4.4-9.6)

\* Indicates fewer than 50 respondents

For additional information, please contact:

STEPS country focal point, Assoc. Prof. Vang Chu MD., PhD., FAsCC,

Head of Cardiology Department,

Mahosot Hospital, Vientiane (wachuvang@gmail.com)

# **I Introduction**

## **1.1 Background of Lao PDR**

The Lao People's Democratic Republic is located in Southeast Asia. Laos is a developing country with an income per capita of \$ US 500 ([National Statistic Centre, 2005](#)). Consequently, Laos is ranked as one of the poorest countries in the world. Biomedical medical research has been under-financed. Little data concerning healthcare issues is available for setting up an appropriate healthcare prevention program. Although the health status of the population has been improved, Laos is still marked by low life expectancy with an average of 61 years old. Infectious diseases such malaria, dengue fever, respiratory infections and gastrointestinal diseases are still the main healthcare issues. Non communicable diseases such as hypertension and stroke are common in Laos. Stroke, which is a complication of hypertension account for more than 50% of the cause cardiovascular mortality ([Khamtan A & Vang C, 2004](#)).

## **1.2 Chronic Diseases and their risk Factors in Laos**

### ***1.2.1 Chronic Diseases***

The 2005 WHO report showed that the impact of chronic diseases in many low and middle income countries is steadily growing. It is vital that the increasing importance of chronic disease is anticipated, understood and acted upon urgently. This requires a new approach by national leaders who are in a position to strengthen chronic disease prevention and control efforts, and by the international public health community. It is essential to communicate the latest and most accurate knowledge and information to front-line health professionals and the public at large ([WHO, 2005a](#)).

The problem is that 80% of chronic disease deaths occur in low and middle income countries. These deaths occur in equal numbers among men and women. The threat is growing – the number of people, families and communities afflicted is increasing. This growing threat is an underappreciated cause of poverty and hinders the economic development of many countries ([WHO, 2005a](#)).

NCDs are steadily growing worldwide and contributed to 60% of all deaths. NCDs share common risk factors and could be prevented. WHO has suggested that all countries should work

together to achieve a 2 % death decrease between now and 2015 to save 36 million lives worldwide.

It has been reported that heart disease will be the major health challenge of the 21st century. Unless something is done, it is estimated that by 2020, death due to cardiovascular diseases will reach 25 million. The greatest rate of increase will be in low and middle-income countries that can least afford to manage it appropriately. The WHO 2000 health report showed that in 1999 there were 17 million deaths worldwide due to cardiovascular diseases. About 80 % of deaths are in low or middle income countries ([WHO Health Report, 2000](#); [World Heart Federation, 2002](#)).

Previous studies performed in Lao PDR have shown that major chronic diseases such as hypertension, stroke, diabetes, chronic respiratory diseases and lung cancer were the main causes of death detected in Laos ([Phommachanh B & Vang C, 2007](#)). Among cardiovascular diseases, hypertension was the most common cause of hospitalization ([Vang C et al, 2002](#)). The main causes of cardiovascular death detected have been stroke, heart failure and acute myocardial infarction ([Khamtan A & Vang C, 2004](#)), which are due raised of blood pressure, glycemia, cholesterol and tobacco smoking ([Sombadith X et al, 2005](#); [Inkeomanivong S & Vang C, 2006](#); [Chuefue CT et al, 2005](#); [Somsamouth B et al, 2005](#); [Yang S et al, 2006](#); [Saytoui S et al, 2007](#)),.

Hypertension, despite its widely recognized high prevalence and associated danger, remains inadequately treated in the majority of patients (Braunwald, 2001). Research data from the Mahosot Hospital in Vientiane have shown that hypertension is the most common disease detected that leads to serious complications such as stroke, cardiac failure and chronic renal failure (Vang C et al, 1994). Acute stroke, which is closely related to uncontrolled hypertension, is the common cardiovascular disease admitted to the Coronary Care Unit of the Department of cardiology of the Mahosot Hospital. The main cause of cardiac mortality detected is due to stroke ([Khamtan A & Vang C. 2004](#)) leading to a significant socio-economic impact ([Porsdal & Boysen, 1997](#); [Evers et al, 1997](#); [Jorgensen et al, 1997](#); [Haidinger et al, 1997](#), [Alberts et al. 1996](#)). These data show that hypertension is a critical issue for the Lao PDR. However, to date, no epidemiological data is available in Laos concerning why hypertension is so frequent in the Lao population.

Accordingly, hypertension should be better controlled to prevent stroke morbidity and mortality in Laos. Many questions remain with no answer. Thus, reliable studies concerning to hypertension, stroke and their risk factors should be carried out to provide better scientific evidences on the above health issues to enable the Lao Public Health Ministry to take appropriate measures or to set up appropriate hypertension and stroke prevention programs to lower the mortality rate due to stroke in the Lao population.

### ***1.2.2 Non Communicable Diseases Risk Factors***

Recently the Department of Chronic Diseases and Health Promotion of the World Health Organization has reported that the impact of chronic diseases in many low and middle income countries is steadily growing. Previous data have shown that 80% of chronic disease deaths occur in low and middle income countries ([WHO, 2005a](#)).

Common, modifiable risk factors underlie the major chronic diseases. These risk factors explain the vast majority of chronic disease deaths at all ages, in men and women, and in all parts of the world. They include: unhealthy diet; physical inactivity; tobacco use ([WHO, 2005](#)). WHO report show that each year at least 4.9 million people die as a result of tobacco use; 1.9 million people die as a result of physical inactivity; 2.7 million people die as a result of low fruit and vegetable consumption; 2.6 million people die as a result of being overweight or obese; 7.1 million people die as a result of raised blood pressure and 4.4 million people die as a result of raised total cholesterol levels ([WHO, 2005a](#)).

The emergence of the CVD epidemic in the developing countries during the past two to three decades has attracted less comment and little public health response, even within these countries. It is not widely realized that at present, the developing countries contribute a greater share to the global burden of CVD than the developed countries. ([Lopez AD, 1993](#); [Whelton PK, 1995](#)). It has been estimated that 5.3 million deaths attributable to CVD occurred in the developed countries in 1990, whereas the corresponding figure for the developing countries ranged between 8 to 9 million (i.e., a relative excess of 70%) ([Lopez AD, 1993](#)).

Regional estimates of CVD mortality indicate that the difference would be even higher if the term “developed countries” is restricted to established market economies only and excludes the former socialist economies. This high, yet inadequately recognized, contribution of developing countries to the absolute burden of CVD is readily explained by the fact that 78% of the 49.9 million global deaths (from all causes) in 1990 occurred in regions other than the established market economies or former socialist economies. Although the relative contribution of CVD deaths to total mortality was higher in the developed countries (49%) than that in the developing countries (23%), the excess total mortality in the latter is translated into excess absolute CVD mortality due to the large populations involved. Thus, in 1990 the developing countries contributed 68% of the total global deaths due to non communicable disease and 63% of world mortality due to CVD ([Murray CJL, 1994](#)).

In Laos, Sombadith and colleagues ([Sombadith X et al, 2005](#)) reported in their study that raised blood pressure, dyslipidemia, alcohol consumption and tobacco smoking were the most common risk factors of stroke in Laos. Tobacco is a major cause of deaths throughout the world, claiming the lives of an estimated 13 000 persons every day ([RITC, 2002](#)). By 2030 it is expected to kill 10 million people per year; half aged 35-69. The epidemic is increasingly affecting developing countries, where most of the world's smokers (82% or 950 million) live ([World Bank, 1999; 2001](#)). Close to half of all men in low-income countries smoke daily and this has been increasing. Women's smoking rates are also increasing fast. By

2030, developing countries will account for 70% of all tobacco deaths. Many deaths and much disease could be prevented by reducing smoking prevalence ([World Bank, 1999; 2001](#)).

The burden of chronic non-communicable diseases (NCD), especially heart disease, stroke, hypertension, diabetes, cancer and chronic respiratory disease, is rising in low and middle-income countries, particularly in Asia ([1](#)). NCD deaths account for 60% of all deaths in the world and one in two deaths in the Asian region.

In Laos, for example, according to a 1995 study in Vientiane by the World Health Organization, 41% of males, 15% of females, and overall, 38% of the population over 15 years old were current daily smokers ([WHO, 2005b](#)). A study done at Mahosot Hospital in 2003 showed that 35% of the hospital doctors smoked ([Tanya G et al, 2003](#)). Other studies at Mahosot have shown 50% of patients with an anterior heart attack and 31.4% of patients with a stroke smoked ([Somebandith X & Vang C, 2005](#)).

### **1.3 Problem Statement**

The burden of chronic non-communicable diseases (NCD), especially heart disease, stroke, hypertension, diabetes, cancer and chronic respiratory disease, is rising in low and middle-income countries, particularly in Asia ([WHO, 2005a, Bonita R, 2009](#)). NCD deaths account for 60% of all deaths in the world and one in two deaths in the Asian region.

Ongoing surveillance of changes in population levels of the major NCD risk factors is crucial if we are to understand the success or otherwise of preventive efforts. Many countries embark on a one-off survey, often with their own definitions, which are not designed to measure secular trends. To address this problem, WHO developed a STEPwise approach to Surveillance (WHO STEPS) of a few key modifiable risk factors suitable for use in low and middle-income settings ([Armstrong T & Bonita R, 2003; Bonita R et al, 2003](#)); this methodology is used in this series of papers. The WHO STEPS approach offers standard methods and measures, as well as accompanying detailed manuals and training materials to ensure that age and sex trends can be addressed adequately, as well as to guide quality control ([WHO, 2005c](#)). Above all, the WHO STEPS approach establishes a baseline against which trends in these key risk factors can be measured through repeated cross-sectional surveys drawn from the same populations.

WHO's STEPS Survey on NCD risk factors has been conducted around the World. However, no STEPS Survey on NCD risk Factors has been conducted in Laos yet. Little data concerning to NCD risk factors is available. No up-to-date National NCD policy/action plan is available yet.

While there are several studies that have addressed NCD risk factors in Lao PDR (Phommachanh B & Vang C, 2007; Sombadith X et al, 2005; Inkeomanivong S & Vang C, 2006; Chuefue CT et al, 2005; Somsamouth B et al, 2005; Phetsiriseng K & Vang C, 2005; Yang S et al, 2006; Saytouki S et al, 2007), these studies used hospital-based data and their sample sizes were small and did not represent the Lao population. Accordingly, further studies in this field should be carried out to provide reliable scientific evidence to enable the Lao Ministry of Health to set up appropriate programs to prevent chronic diseases in Laos.

## **1.4 objectives**

### ***1.4.1 General Objectives***

- To determine the burden of NCD risk factors in Vientiane Capital City, Lao PDR

### ***1.4.2 Specific Objectives***

- To determine the prevalence of:
  - tobacco use
  - raised blood pressure
  - physical inactivity
  - low fruit and vegetable consumption
  - harmful alcohol consumption
  - overweight and obesity



## II Methods

### 2.1 Scope

In the Lao STEPS survey on NCD risk factors only STEP1 and STEP2 data were collected. In STEP1 all core and expanded demographic and health behaviour data from the standard STEPS Instrument were collected. In STEP2 all core and expanded physical measures were collected, which included height, weight, blood pressure, heart rate, and waist and hip circumference.

### 2.2 Study Population

Due to limitation of budget available for this project, the Lao STEPS Survey on NCD risk factors was carried out in the rural and urban areas of Vientiane capital city. Lao adults aged 25 to 64 years residing in the 9 districts of Vientiane capital city comprised the target population for the study. Foreigners, as well as pregnant women and individuals below 25 and above 64 years of age were excluded from the study. Consent was obtained from each person selected for the study (Appendix B).

### 2.3 Sample size

The target sample size was 4,610. This figure was calculated by using the following

$$\text{sample size} = \frac{k^2 * (p * (1-p))}{e^2}$$

where:

- $k$  is the desired level of confidence = 1.96
- $p$  is the baseline level of the indicators = 0.5
- $e$  is the desired margin of error = 0.05.

The sample size obtained from this equation was then inflated for an expected non-response rate of 10% and multiplied by 1.5 to adjust for the multi-stage cluster design. Finally, this figure was multiplied by 8 as estimates for 8 age-sex groups were desired for the survey.

## **2.4 Sampling**

The participants were selected from across the 9 health districts of Vientiane Capital City. In order to draw a representative probability sample, a list of all 497 villages within these 9 health districts was obtained from the Vientiane Capital City Health Department. This list was generated in early 2005. Probability proportional to size sampling was used to select 72 villages from this list. For each selected village a list of households was obtained from the head of each village and between 6 and 222 households, with more households drawn from larger villages, was selected from each village using simple random sampling. One participant was then selected from each household using the Kish Method (See Appendix A) at the time of first contact between the data collector and a member of the household.

## **2.5 Timeframe**

The Lao STEPS survey on NCD risk factors was planned during a STEPS Survey Planning Workshop organized by the Lao Ministry of Health held from 28 May 2007 to 1 June 2007 with technical assistance from WHO HQ. After the workshop, a research proposal was submitted. All budgets and medical devices required for the project were provided by WHO to the research in October 2007. A Data Collector Training Workshop was held from 3-4 January 2008, a pre-test of the data collection tools was carried out on 7/1/2008, and a meeting to discuss the pilot test results and resolve matters related to the data collection process was carried out on 8/1/2008. The data entry team was trained using data collected from the pilot test. Data collection started in January and continued through March 2008. Data management, entry, cleaning and processing were carried out until October 2008. A data analysis workshop was held from 21-25/9/2009 to analyze the Lao STEPS data.

## **2.6 Staff Recruitment and Training**

Forty-one data collectors were recruited from across all 9 district health departments of Vientiane capital city. The data collectors were organized into 10 teams of 4, each comprised of 1 doctor and 3 nurses. They were trained at the Ministry of Health in early January, 2008, just prior to the beginning of data collection. The training lasted for 3 days and included a 1-day pilot test in which the data collectors conducted several interviews in their home districts. Please see appendix F for the complete schedule of the training.

## **2.7     *Instrument and data collection process***

### **2.7.1   Instrument**

The generic STEPS Instrument was slightly modified for use in the Lao STEPS survey (Appendices C and D). The final version of the questionnaire is available in the appendix C. Only STEP 1 and 2 were included in the survey. Step 1 contains questions on the basic demographics of the respondents: age, sex, level of education, ethnicity, employment status and income. Following this section are questions on the key behavioral risk factors for NCDs, these include: tobacco use, alcohol consumption, diet, physical activity. STEP 1 also included questions about history of raised blood pressure and diabetes. Show cards were used (Appendix E) to help participants understand better and get appropriate answers in many questions. In STEP 2, participants had their height, weight, waist and hip circumference, blood pressure, and heart rate measured.

### **2.7.2   Data collection process**

To collect data, the data collector team went to each selected village. They communicated with the Head of the village to get someone from the village administration office to guide them to the selected households. Each team was equipped with necessary data collection tools as follows:

1.    Name tag showing that he/she is a member of the research team
2.    Notification of STEPS surveillance visit
3.    weight scale
4.    Height scale
5.    Consent form for STEP 1 &2
6.    Interview tracking form
7.    STEPS survey questionnaire forms
8.    OMRONs (digital blood pressure readers)
9.    Show cards
10. List of randomized villages and their respective randomized household

## 11. Kish Household cover sheet

Once the data collectors arrive at a house they introduced themselves and explained the purpose of their visit. They asked for the age and sex of members of the household aged 25-64 years. This information was used to select one participant from the household using the Kish method. After selecting the participant, they started to talk to him/her to get him/her involved in the study. Consent form was read and consent was obtained officially before starting the process of STEP 1 and STEP2 data collection.

If the randomized person is not available, then they fill in the notification of STEPS surveillance visit card and make an appropriate appointment to collect data. If the second time he/she is still not there then, the selected case was dropped from the survey. No person from the same house was allowed to replace him/her nor could any other household apart from those on the randomized list be taken to replace temporarily or permanently unoccupied households.

## 2.8 Data entry

Thirteen data entry staffs were recruited from among staff at Mahosot, Sethathirath and Mittapab Hospitals. These staffs attended the survey implementation and data collectors training and then were specifically trained in Epi Data and the entry of STEPS survey data by the survey coordinator. This data entry training took place during the pilot test for the data collectors where the the pilot test data was used to practice data entry.

EpiData was used for data entry using tailored templates provided by WHO. Data entry began about one week after the beginning of data collection. Thus data was entered as it was received. Double data entry was conducted on a separate computer and the 2 data entry files were compared to check for consistency. All errors identified during this consistency check were corrected by checking the original questionnaire forms. Data entry was completed by December 2008 and corrections were completed by June 2009.

## 2.9 Data Analysis

Data were cleaned and analyzed by the survey coordinator with the assistance of WHO staff during a data analysis workshop held in September 2009. Epi Info was used to complete the descriptive analyses using the standard analysis programs provided by WHO, which ensure unclean records are excluded from each analysis. Sample weights, equal to the inverse of the probability of selection, were calculated for all records using the sampling information. The probability of selection at all stages of sampling (village, household and individual) was included in the calculation of these weights. Since non-response was very low and recent data on the age-sex structure of Vientiane Capital City was not available, weighting for non-response and a post-adjustment for age and sex were not done. Weighted complex sample analyses were completed

for all measures and standard errors were used to obtain 95% confidence intervals for all results, which were used to check for significant differences between subgroups.

### III Results

A total of 4331 people of the 4610 target people participated in the study. However, the data from 151 participants were excluded from the analysis because data for sex or age was missing or the age of the participant was out of range. This left a total of 4,180 participants for analysis. The response rate was 99 %, thus the difference between the total number of interviews completed and the target is mostly due to selected participants not being available for an interview or due to empty households being selected. Relevant findings are presented in this section using tables and charts. Those readers who are interested in the full results may go to Appendix J which contains the Data Book, or full tabulation of all results.

#### 3.1 Demographics

A total of 4180 people, 1691 males (40.5%) and 2489 females (59.5%), aged from 25 to 64 years were included in this study (table 1). Most of them (95.7%) were from the Lao Lum ethnic group (Figure 1).

Table 1: Age-sex Structure of Sample

Age Group (years)	Men		Women		Both Sexes	
	n	%	n	%	n	%
25-34	382	34.8	717	65.2	1099	26.3
35-44	512	38.7	811	61.3	1323	31.7
45-54	466	43.8	597	56.2	1063	25.4
55-64	331	47.6	364	52.4	695	16.6
25-64	1691	40.5	2489	59.5	4180	100

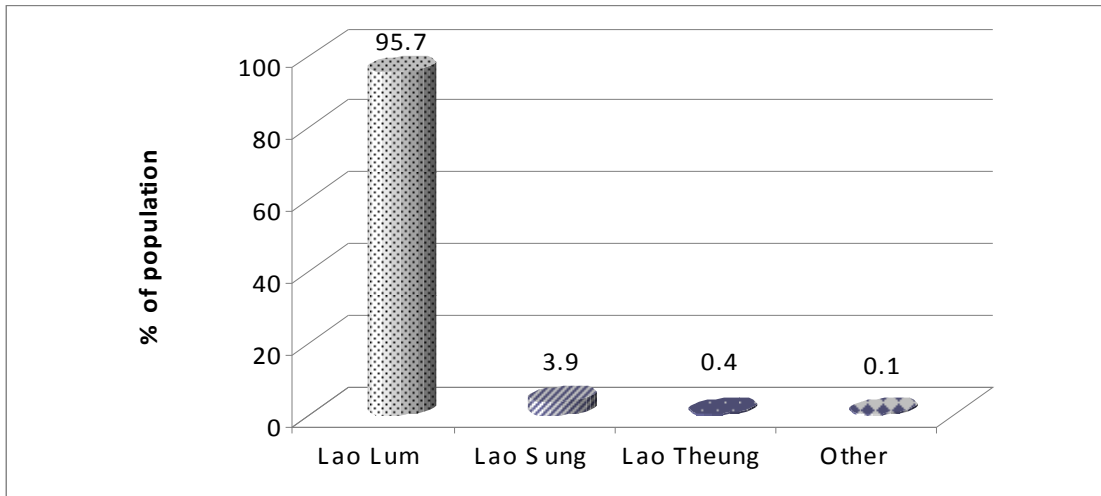


FIGURE 1: Ethnicity (n=4122)

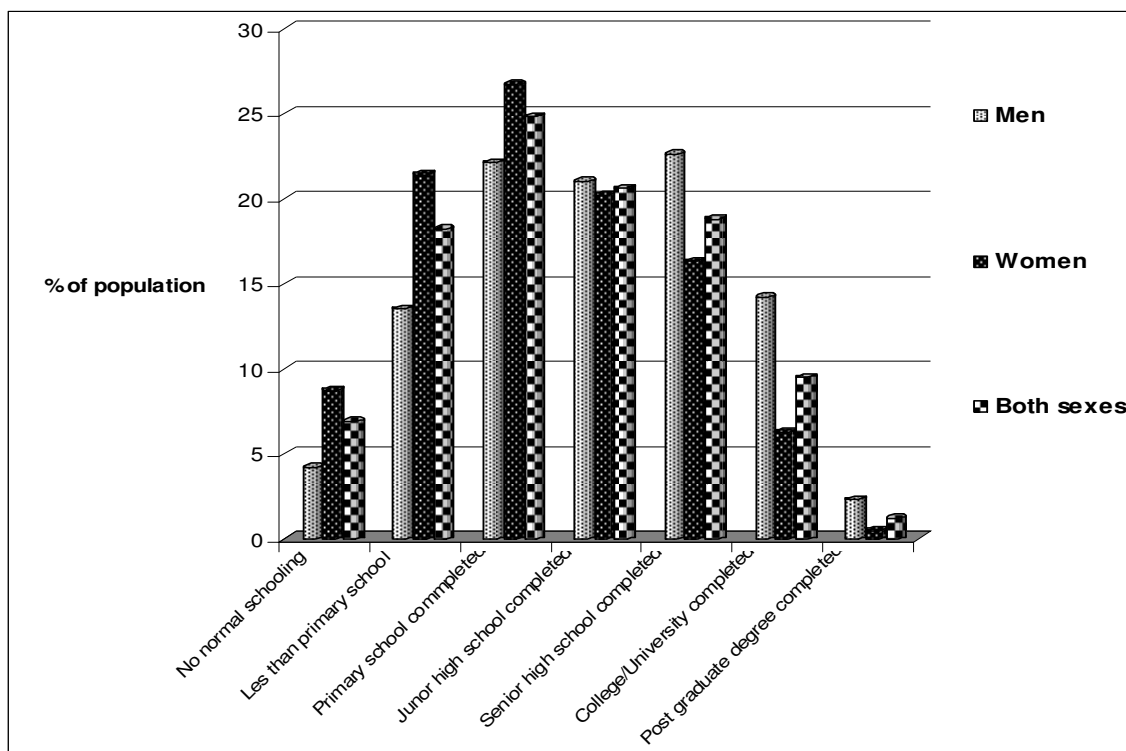


FIGURE 2: Highest level of education (n= 4180)

The highest level of education completed is shown in Figure 2. The majority of the respondents completed either primary, junior high or senior high school education.

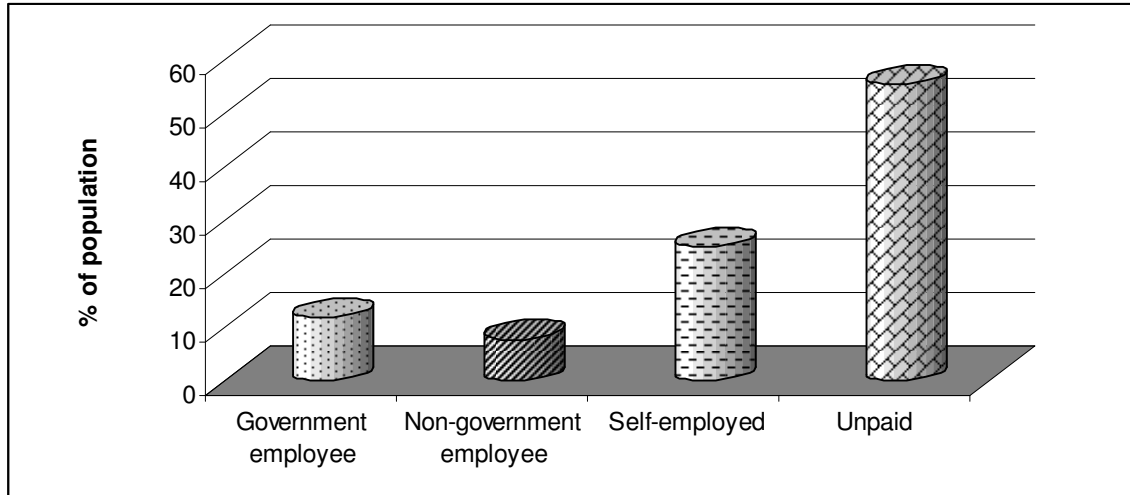


FIGURE 3a: Employment status for all respondents (n= 4180)

Employment status is shown in Figure 3a. Government employees account for 11.9% and non government employees 7.7%. The percentage of self-employed people was 25.1%. More than half (55.3%) were unpaid people, and in this group home makers account for 74.8% (Figure 3b). The average income per capita was 777.4 USD.

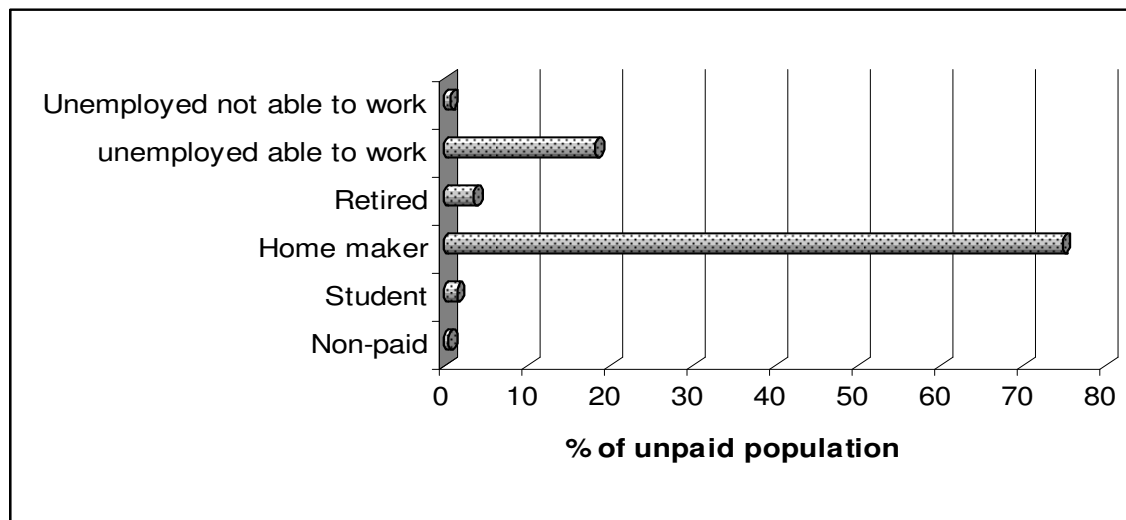


FIGURE 3b: Employment status for all respondents (n= 2291)

## 3.2 NCD Risk Factors

### 3.2.1 Tobacco Use

As seen in Figure 4, the rate of tobacco smoking was significantly higher in the males in all age groups compared to women. Among current smokers, 98.7% are current daily smokers and among daily smokers, 85.0% smoke manufactured cigarettes. These smokers smoke an average of 10.6 cigarettes per day.

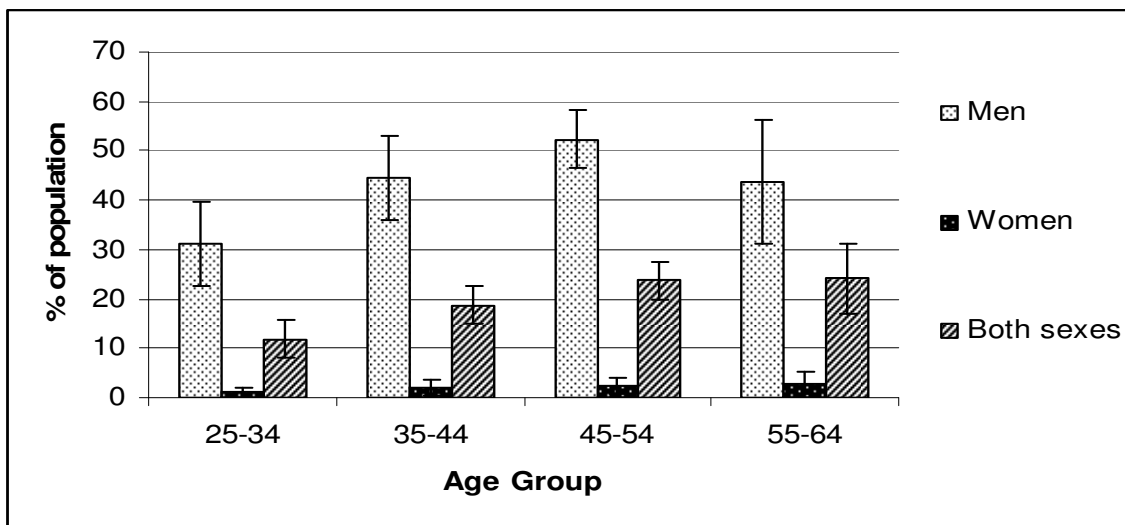


FIGURE 4: Current smoking (n = 1649 men, 2348 women)

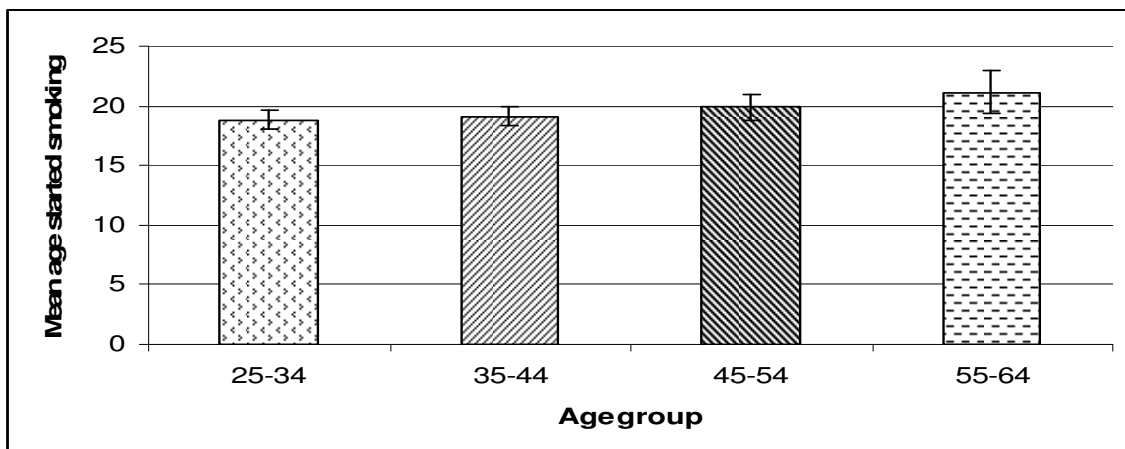


FIGURE 5: Initiation of daily smoking for both sexes (n = 665 men, 49 women)



The mean age for tobacco smoking initiation was 19.7 years old (Figure 5). The rate of smokeless tobacco use was shown in Figure 6. Men also use significantly more smokeless tobacco than women (14.6% vs 1.1%).

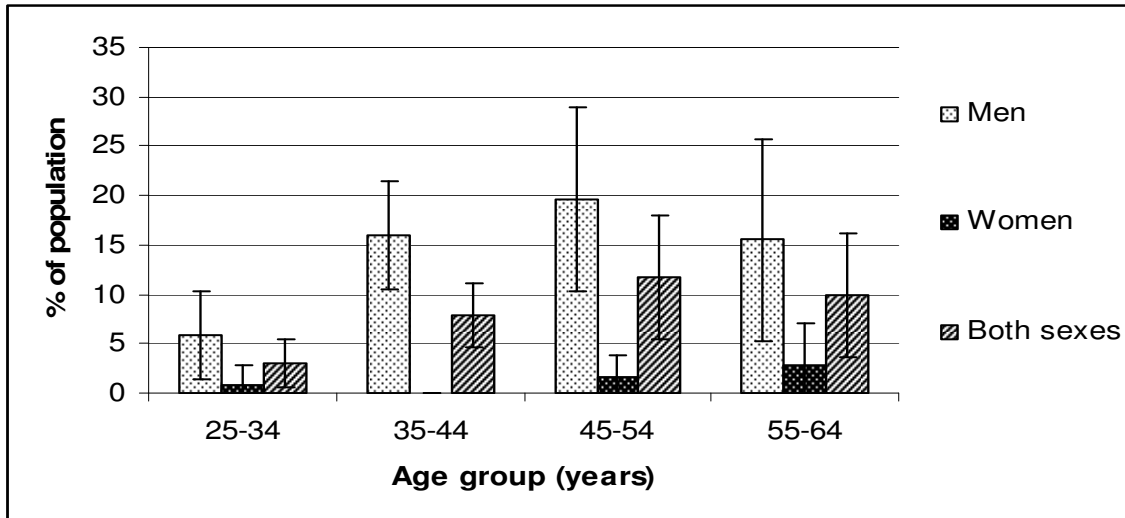


FIGURE 6: Smokeless tobacco use (n = 900 men, 812 women)

### 3.2.2 Alcohol Consumption

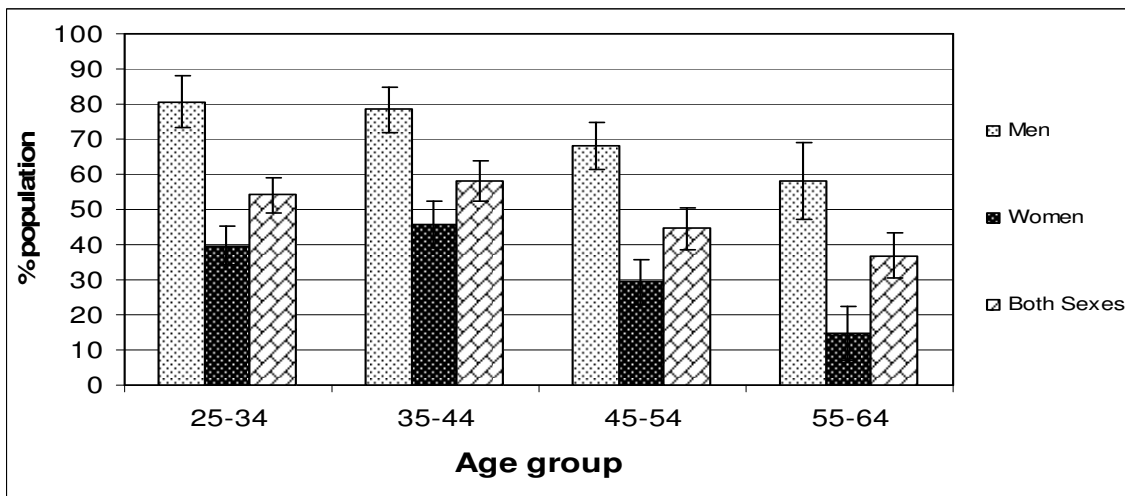


FIGURE 7: Current Drinkers (those who consumed alcohol in the past 30 days with n = 1539 men, 2354 women)

As seen in Figure 7, the rate of alcohol drinking was significantly higher among males (72.0% vs 35.6%) and this difference was detected in all age groups. The overall rate of alcohol consumption for both sexes was slightly higher in the young age group.

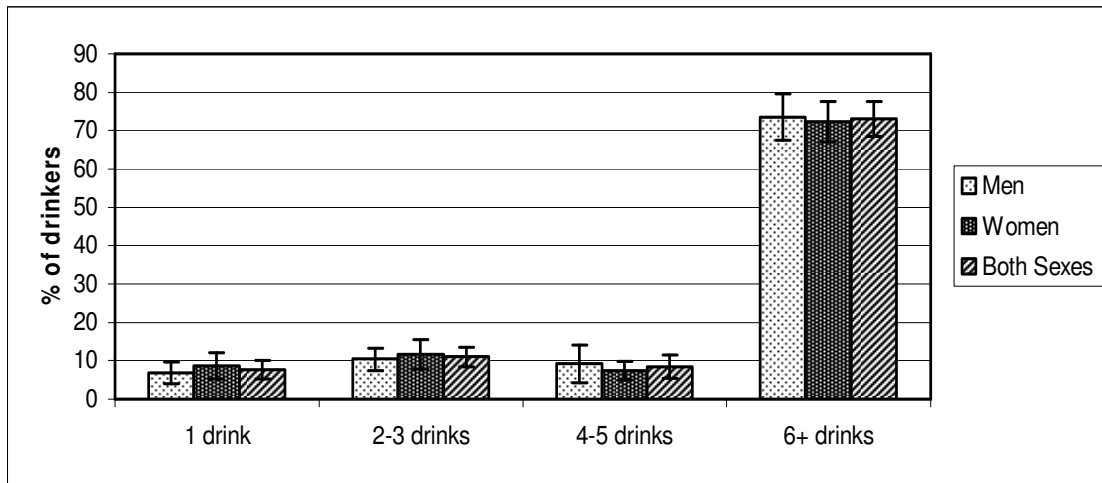


FIGURE 8: Number of Standard Drinks Consumed on a Drinking Day (amongst those who consumed alcohol in the past 12 months, n = 1102 men, 827 women)

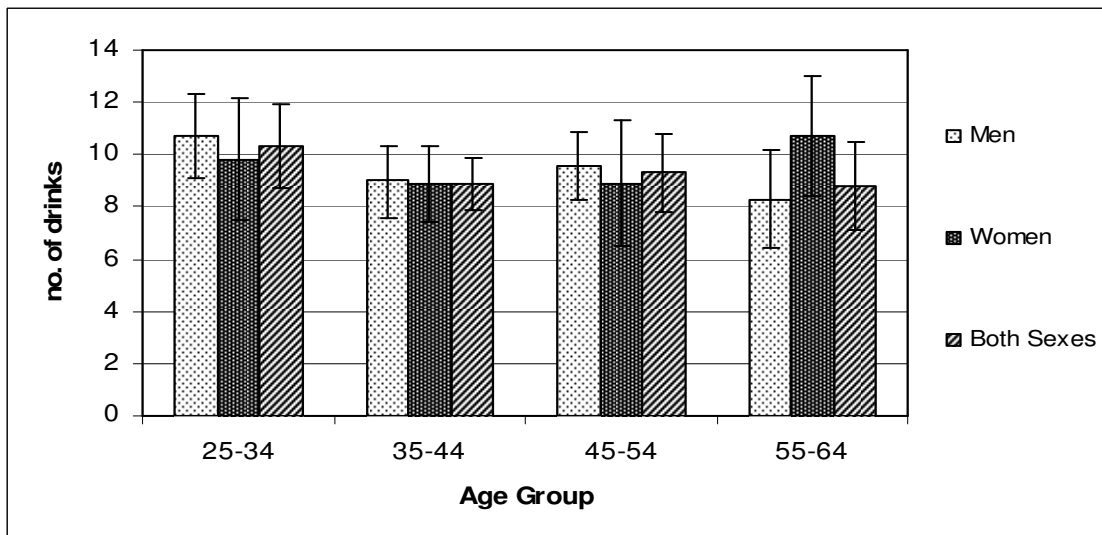


FIGURE 9: Mean Number of Standard Drinks Consumed on a Drinking Day amongst those who consumed alcohol in the past 12 months. (n = 1102 men, 827 women; Standard drink = 10g of alcohol)

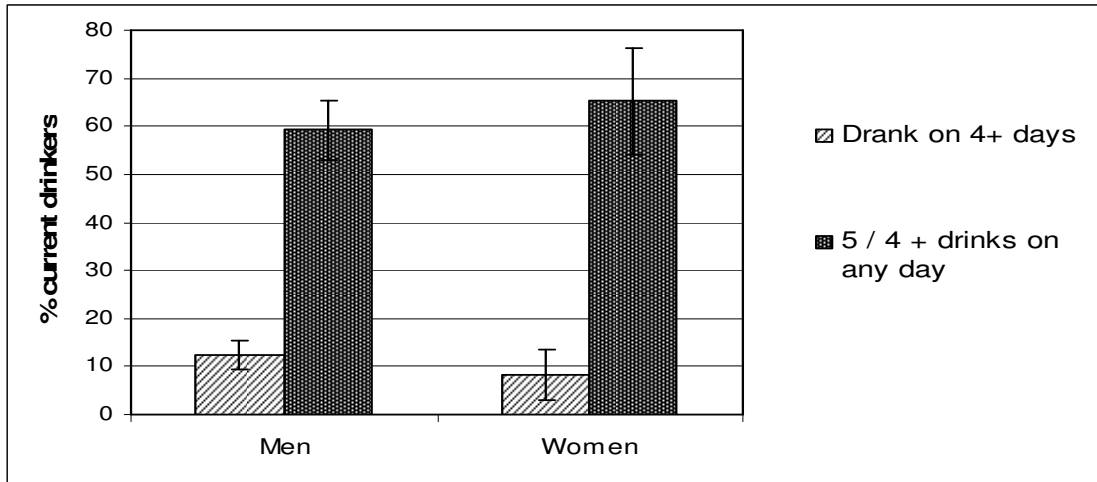


FIGURE 10: Drinking in the past 7 days (n = 720 men, 508 women)

In a typical drinking day 73.0% of the drinkers who consumed alcohol during the last 12 months accepted that they drank more than 6 standard drink per day (Figures 8 and 9) and the mean number of drinks consumed was 9.4 drinks. No significant difference in mean number of alcohol consumption was detected between males and females. Among the current drinkers, 12.4% of men and 8.3% of women drink alcohol more than 5 days per week And 59.3% of men and 65.2% of women engaged in binge drinking (more than 5 drinks per day for men and more than 4 drinks per day for women) in the past 7 days (Figure 10).

### 3.2.3 Diet

The mean number of days fruit is consumed per week was 5 days (Figure 11). The mean number of servings of fruit consumed per day was 3.5 (Figure 12). No significant difference in fruit consumption between males and females was detected.

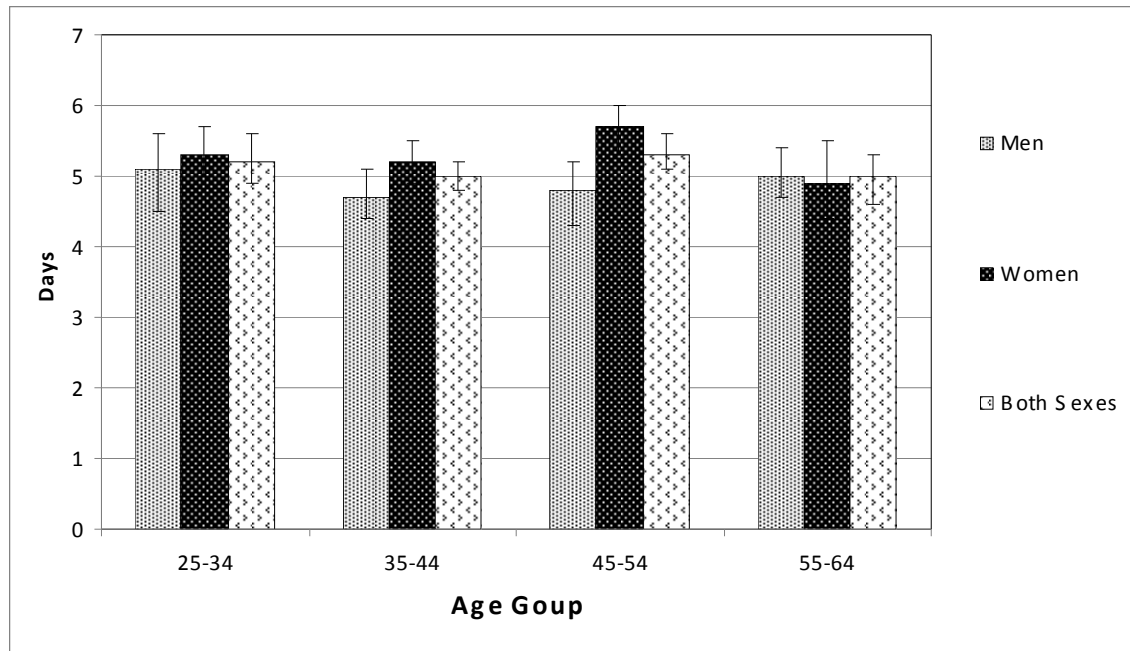


FIGURE 11: Fruit consumption: mean number of days consumed per week (n = 1167 men, 1927 women)

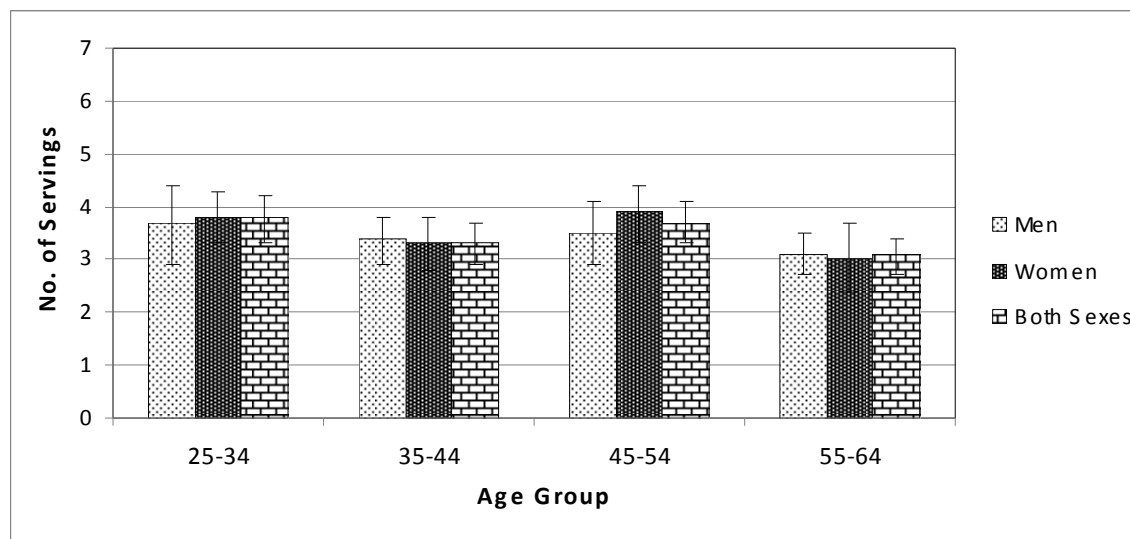


FIGURE 12: Fruit Consumption: mean number of servings per day (n = 1167 men, 1927 women)

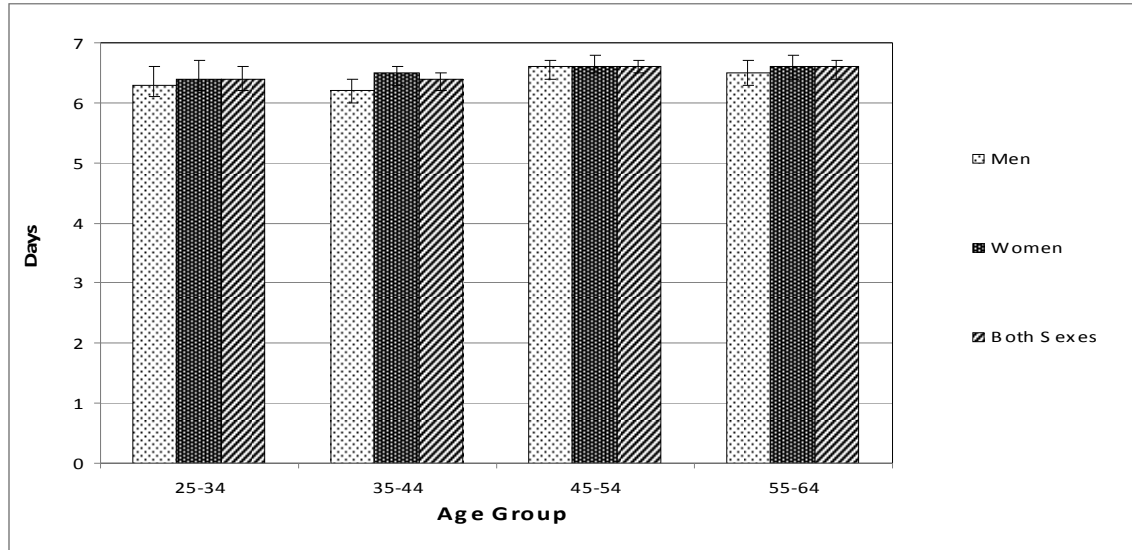


FIGURE 13: Vegetable Consumption: mean number of days consumed per week (n = 1142 men, 1900 women)

For vegetable consumption, the mean number of days consumed per week was 6 days (Figure 13) and the mean number of servings consumed per day was 4.7 (Figure 14). No significant difference in fruit consumption between males and females was detected.

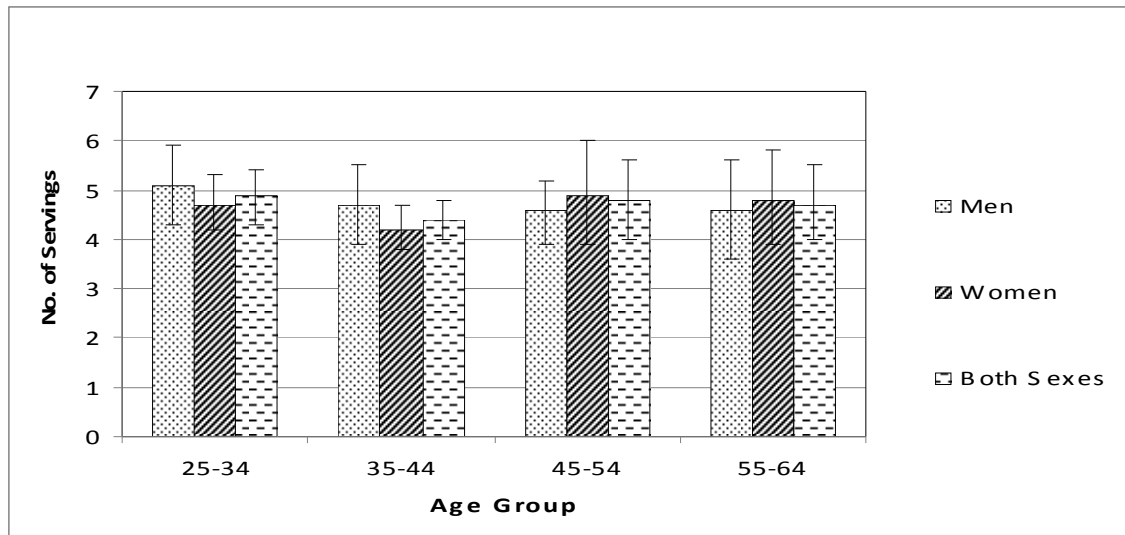


FIGURE 14: Vegetable Consumption: mean number of servings per day (n = 1142 men, 1900 women)

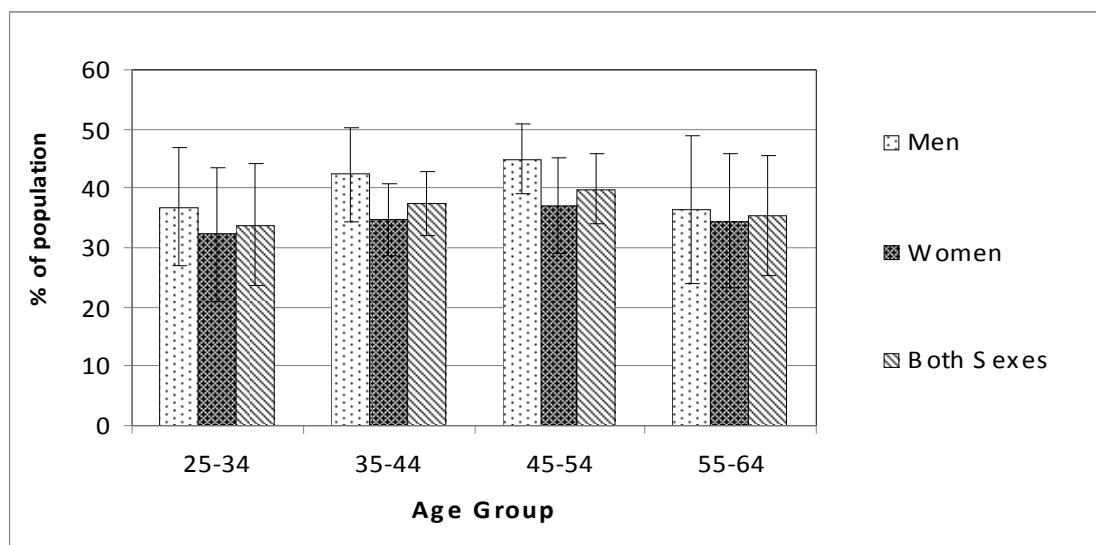


FIGURE 15: Consumption of <5 servings of fruit and/or vegetables on average per day (n = 1188 men, 1944 women)

Thirty-seven percent of the population involved in this study consumed less than five standard servings of fruit and/or vegetables on average per day (Figure 15). The type of oil most commonly used to cook was vegetable oil (Table 2)

TABLE 2: type of oil or fat most often used for meal preparation in households

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	% Marga- rine	95% CI	% None used	95% CI	% Other	95% CI
4126	93.0	90.8- 95.3	5.7	3.4- 8.0	0.1	0.0- 0.1	0.0	0.0- 0.0	1.0	0.4- 1.5	0.3	0.4- 1.5

### 3.2.4 Physical Activity

The following guidelines were used in analysis physical activity. The guidelines provided valuable information on the intensity of physical activity classifications.

- MET values are applied to vigorous and moderate intensity variables in the work, transport and recreation domains. These have been calculated using an average of the typical types of activity undertaken. Different types of activities have been grouped together and given a MET value based on the intensity of the activity. Applying MET values to types of activities allows us to calculate total physical activity. MET values applied in this study were 4 for moderate activities and 8 for vigorous activities. For more information regarding MET values go the STEPS website at [www.who.int/chp/steps](http://www.who.int/chp/steps).
- The calculations below use multiple questions in the physical activity section. To simplify this a bit the questions have been clustered into four groups (as they appear in the Instrument). In the Instrument questions section of the table, only the group label appears. The specific questions for each group are presented below (See Appendix C and J).

#### **Activity at work:**

- Does your work involve vigorous-intensity activity that causes large increases in breathing or heart rate like [examples] for at least 10 minutes continuously?
- In a typical week, on how many days do you do vigorous-intensity activities as part of your work?
- How much time do you spend doing vigorous-intensity activities at work on a typical day?
- Does your work involve moderate-intensity activity, that causes small increases in breathing or heart rate such as brisk walking for at least 10 minutes continuously?
- In a typical week, on how many days do you do moderate-intensity activities as part of your work?
- How much time do you spend doing moderate-intensity activities at work on a typical day?

#### **Travel to and from places:**

- Do you walk or use a bicycle for at least 10 minutes continuously to get to and from places?
- 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?
- How much time do you spend walking or bicycling for travel on a typical day?

#### **Recreational activities:**

- Do you do any involve vigorous-intensity sports, fitness or recreational activities that cause large increases in breathing or heart rate like [examples] for at least 10 minutes continuously?
- In a typical week, on how many days do you do vigorous-intensity sports, fitness or recreational activities?
- How much time do you spend doing vigorous-intensity sports, fitness or recreational activities on a typical day?
- Do you do any involve moderate-intensity sports, fitness or recreational activities that cause large increases in breathing or heart rate like [examples] for at least 10 minutes continuously?
- In a typical week, on how many days do you do moderate-intensity sports, fitness or recreational activities?

- How much time do you spend doing moderate--intensity sports, fitness or recreational activities on a typical day?

#### **Sedentary behaviour :**

- How much time do you usually spend sitting or reclining on a typical day?

As shown in Figure 16, more than half of the population was involved in high physical activity (64.1%). Significantly more men attained a high level of physical activity than women (72.1% vs 59.1%). Fifty percent of the population in this study achieved 3 hours or less physical activity on average per day (table 3). Males spent more time on physical activity than female (4hr 28.6min versus 2hr 12.9min).

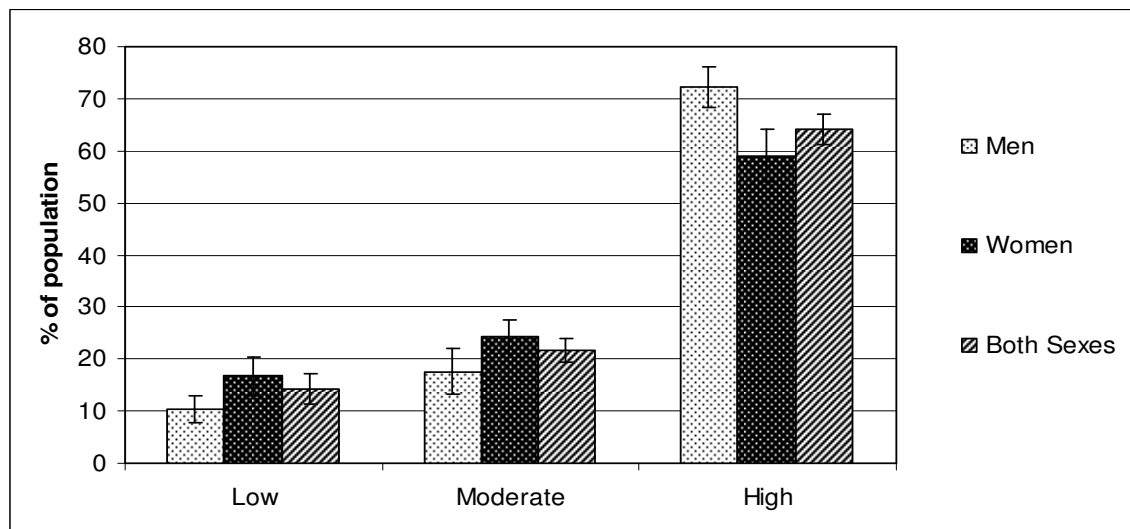


FIGURE 16: Total Level of Physical Activity in a typical week (n = 1373 men, 2139 women)

TABLE 3: Median Amount of Physical Activity on a typical day (n = 1373 men, 2139 women)

	25th percentile	median (50th percentile)	75th percentile
Men	1hr 10min	4hr 28.6min	8hr
Women	42.9min	2hr 12.9min	6hr 17.1min
Both Sexes	1hr	3hr	7hr 30min



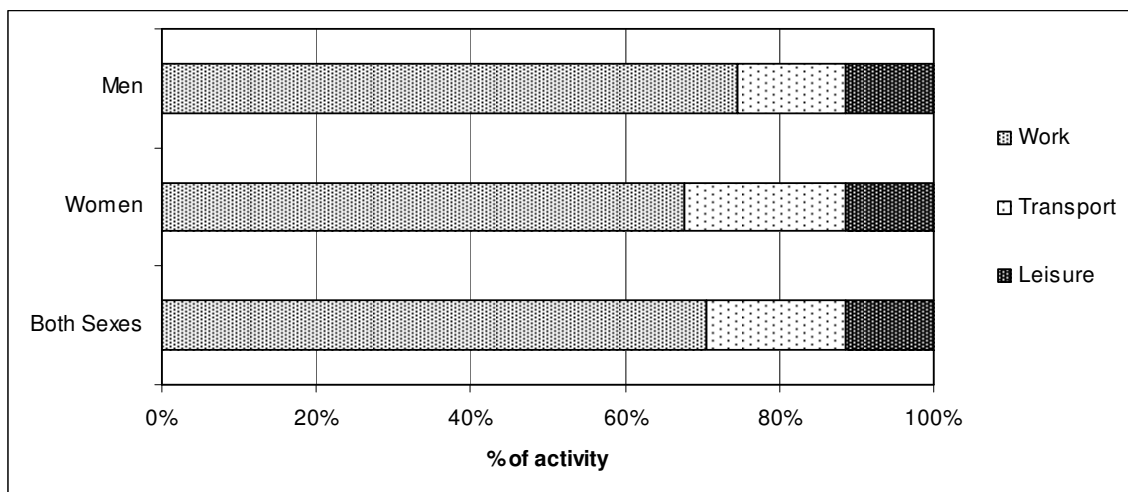


FIGURE 17: Average Distribution of Physical Activity (n = 1287 men, 1889 women)

The contribution of work related physical activity to the total physical activity of the population was 70.5% (Figure 17) and 68.2% of the population did not engage in physical activity during leisure time (Figure 18). The percentage of people in the 55 to 64 group who had no vigorous physical activity was 71.6 % (Figure 19)

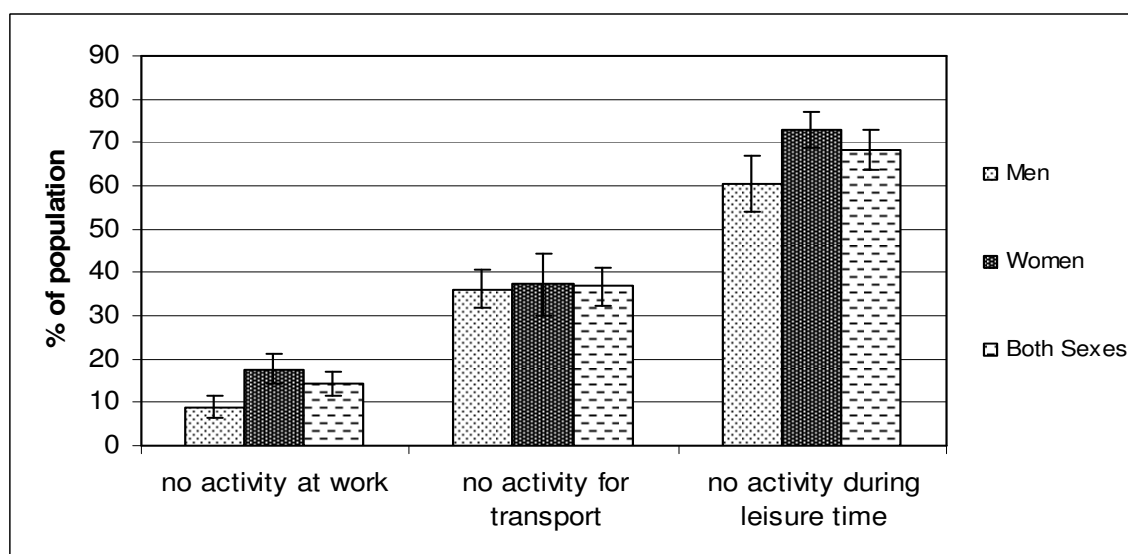


FIGURE 18: Average Distribution of Physical Activity (n = 1373 men, 2139 women)

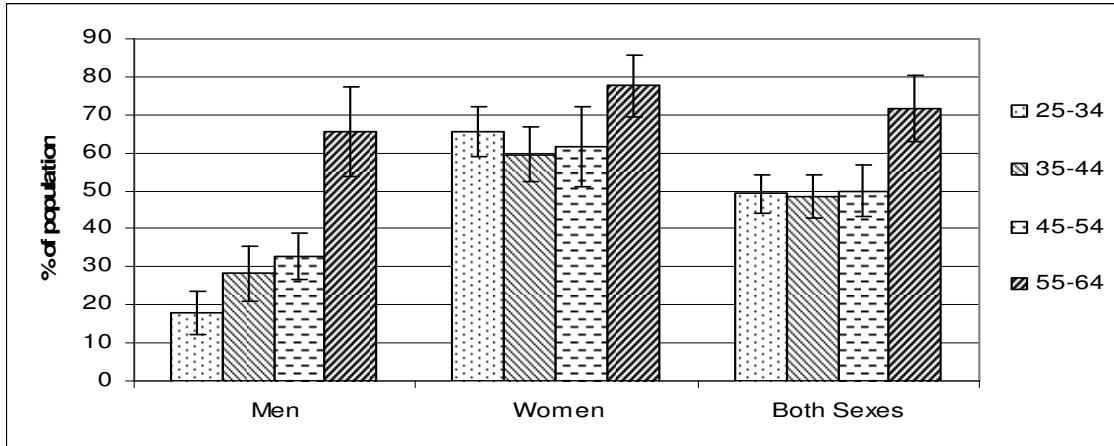


FIGURE 19: No Vigorous Physical Activity (n = 1373 men, 2139 women)

### 3.2.5 Health History

As seen in Figure 20, the percentage of population who had been previously diagnosed with hypertension was 9.3%. No significant difference was detected between males and females (7.2% vs10.7%) . The percentage of the population previously diagnosed with diabetes was 2.5%. No significant difference was detected between males and females (1.6% vs 3.1%) either.

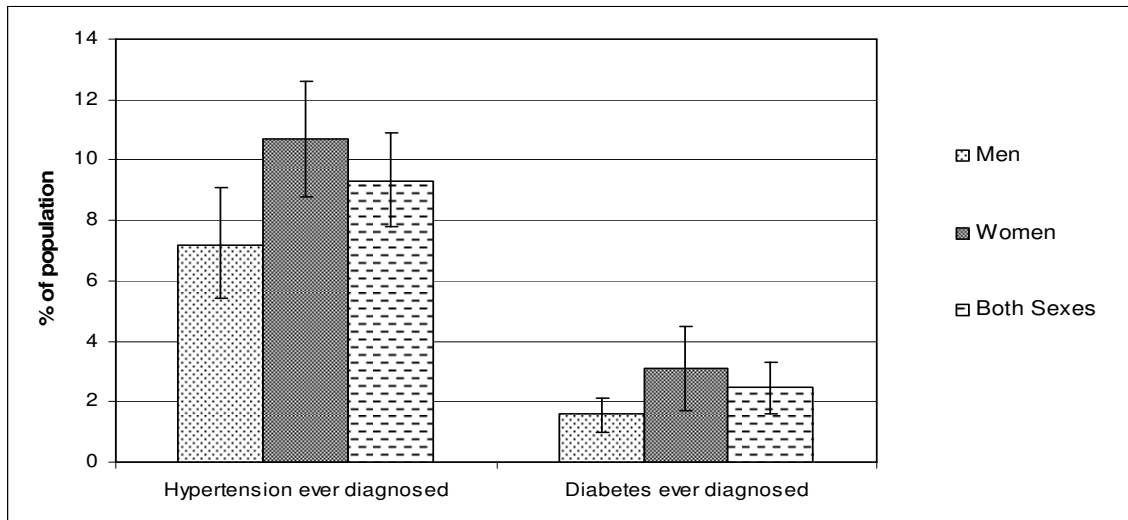


FIGURE 20: Previously Diagnosed Hypertension (n = 1428 men, 2174 women) and Diabetes (n = 1591 men, 2386 women)

### 3.2.6 Body Mass Index (BMI)

The mean Body Mass Index for both sexes detected was 23.5 and 27.4% are overweight ( $\text{BMI} \geq 25 \text{ kg/m}^2$ ) and 5.8% are obese ( $\text{BMI} \geq 30 \text{ kg/m}^2$ ) (FIGURES 21 and 22).

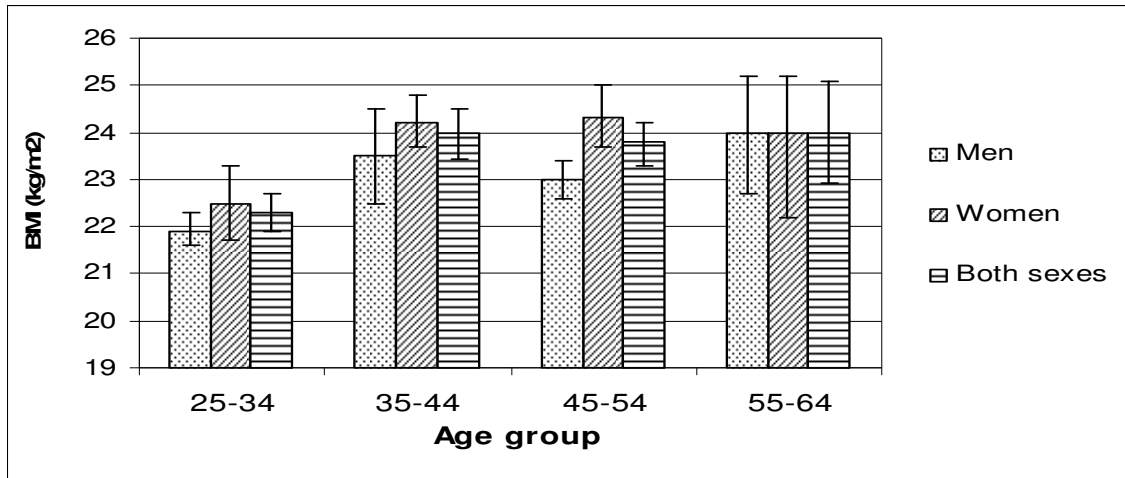


FIGURE 21: Mean Body Mass Index (BMI) (n = 2,560 men, 2,333 women)

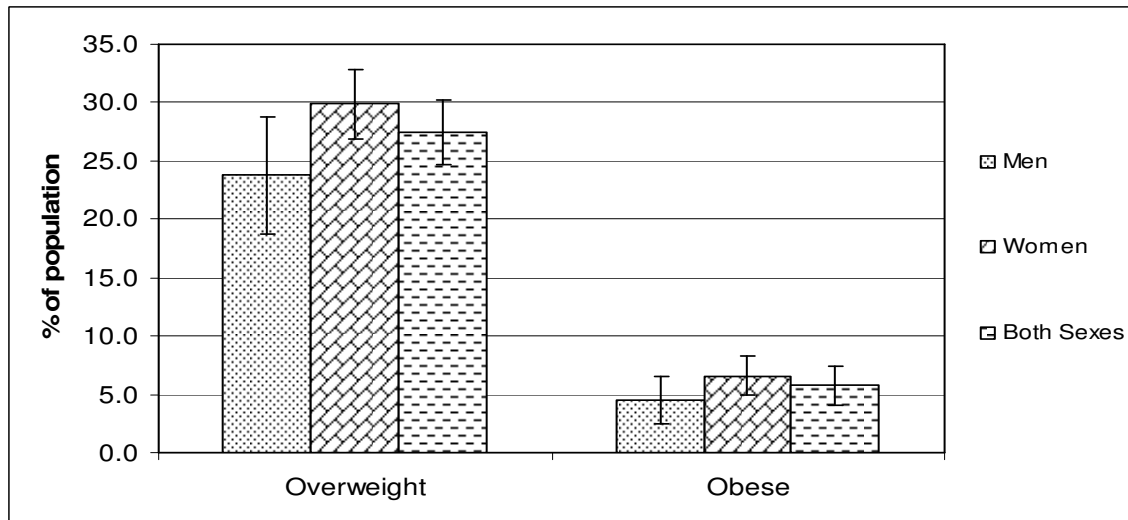


FIGURE 22: Mean Body Mass Index (BMI) Classification (n = 2560 men, 2333 women)

**Definitions:** Overweight ( $\text{BMI} \geq 25$ ) and Obese ( $\text{BMI} \geq 30.0$ )

### 3.2.7 Blood pressure

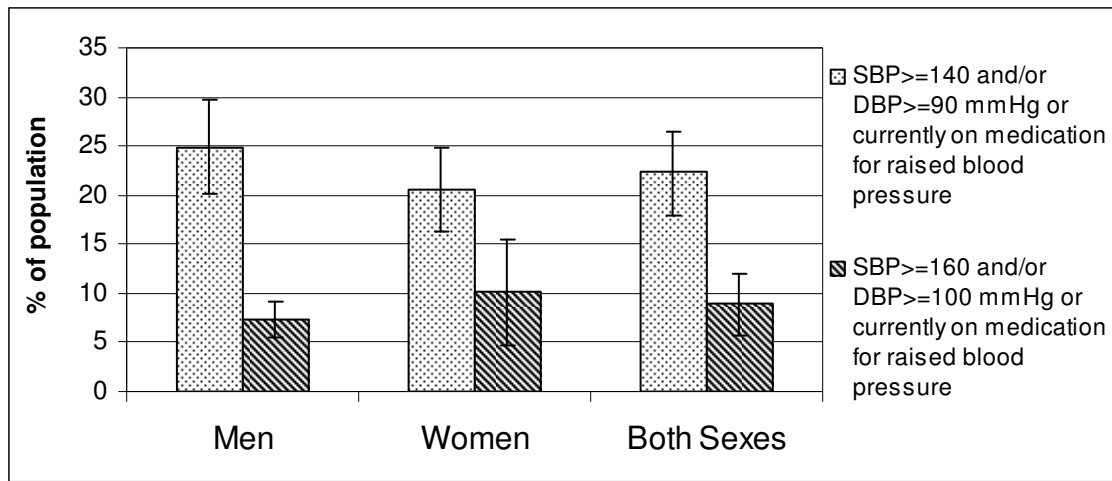


FIGURE 23: Raised BP or Currently on Medication for Raised BP (n = 1645 men, 2447 women)

The mean systolic blood pressure including those currently on medication for raised blood pressure was 124.6 mmHg and 76.8 mmHg for diastolic blood pressure. The percentage with raised BP (SBP  $\geq$ 140 and/or DBP  $\geq$ 90 mmHg or currently on medication for raised blood pressure) was 22.3 %. Percentage with raised blood pressure (SBP  $\geq$ 160 and/or DBP  $\geq$ 100 mmHg or currently on medication for raised BP) was 8.9 %. The percentage of the people with raised blood pressure but not on medication was 83.8% (FIGURE 23 & 24)

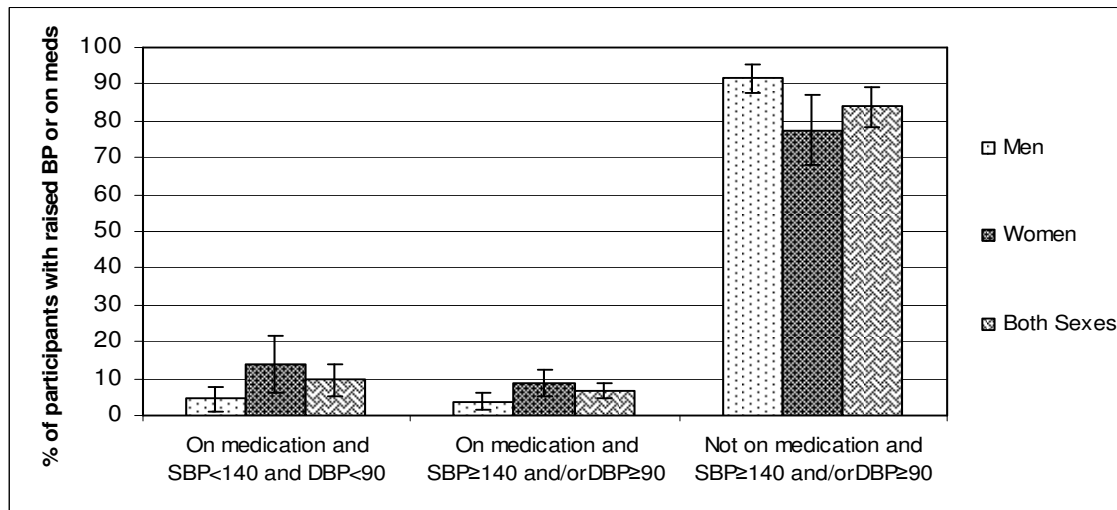


FIGURE 24: Treatment and Control of Raised BP amongst those participants with raised BP or on medication for raised BP (n = 366 men, 421 women)

### 3.2.8 Waist and hip circumference

The mean waist circumference was 76.5 cm for men and 75.2 cm for women and the mean hip was 92 cm for men and 92.7 cm for women. Mean waist/hip ratio were 0.9 for both sexes (table 4).

TABLE 4: Mean waist / hip ratio

Mean waist / hip ratio							
Age Group	Men				Women		
(years)	n	Mean	95% CI		n	Mean	95% CI
25-34	157	0.9	0.8-0.9		302	0.8	0.8-0.9
35-44	211	0.9	0.9-0.9		372	0.8	0.8-0.9
45-54	193	0.9	0.9-0.9		266	0.9	0.9-0.9
55-64	151	0.9	0.9-0.9		171	0.9	0.9-0.9
<b>25-64</b>	<b>712</b>	<b>0.9</b>	<b>0.9-0.9</b>		<b>1111</b>	<b>0.9</b>	<b>0.8-0.9</b>

### 3.2.9 Heart rate

TABLE 4: Mean beats per minutes

Mean beats per minute											
Age Group	Men				Women				Both Sexes		
(years)	n	Mean	95% CI		n	Mean	95% CI		n	Mean	95% CI
25-34	367	77.7	76.1-79.2		694	80.9	79.1-82.7		1061	79.8	78.4-81.1
35-44	495	77.6	76.3-78.9		794	80.2	78.5-81.9		1289	79.2	78.2-80.3
45-54	445	79.3	78.1-80.5		584	78.4	75.9-80.8		1029	78.7	77.1-80.4
55-64	319	79.2	76.9-81.4		353	78.8	77.0-80.7		672	79	77.9-80.1
25-64	1626	78.4	77.6-79.2		2425	79.8	78.8-80.7		4051	79.2	78.6-79.9

The mean heart beats per minute were 78.4 for men and 79.8 for women. The percentage of population with heart rate per minute over 100 was 3.1 % for men and 2.9 % for women (Table 4 and 5)

TABLE 5: Percentage with beats per minute over 100

Percentage with beats per minute over 100											
Age Group	Men				Women				Both Sexes		
(years)	n	%	95% CI		n	%	95% CI		n	%	95% CI
25-34	367	1.8	0.3-3.3		694	3.5	0.6-6.4		1061	2.9	1.0-4.9
35-44	495	2.4	0.8-3.9		794	2.9	1.0-4.9		1289	2.7	1.3-4.1
45-54	445	4.5	1.3-7.8		584	2.3	0.9-3.7		1029	3.2	1.6-4.8
55-64	319	3.6	1.4-5.9		353	2.8	0.7-4.8		672	3.2	1.6-4.8
25-64	1626	3.1	1.9-4.2		2425	2.9	1.8-4.1		4051	3	2.1-3.8

### 3.2.10 Combined Risk Factors

To see the burden of NCD risk factors amongst the involved population, the following five main risk factors of non communicable diseases risk factors were combined. The NCD risk factor to be combined were as follow

1. Daily smoking
2. <5 servings of fruit and/or vegetables per day
3. Low levels of physical activity
4. Overweight (BMI  $\geq$  25)
5. SBP  $\geq$  140 and/or DBP  $\geq$  90 or on medication for raised blood pressure

Nearly 60% (59.8%) of the population has 1 or 2 risk factors. An additional 9.2% have 3 or more risk factors (Figure 25a, 25b, & 25c)

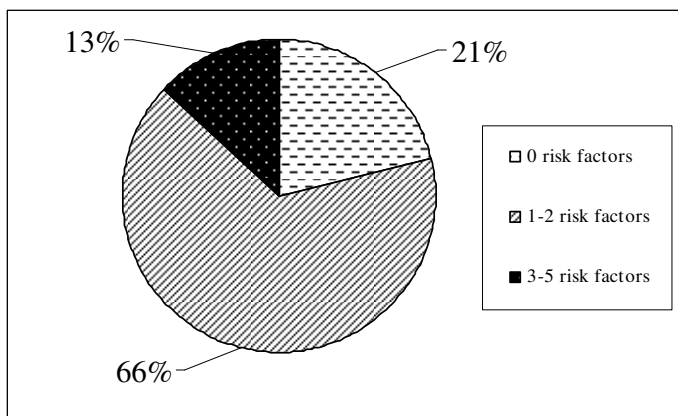


FIGURE 25a: Combined Risk Factors for men (n = 918)

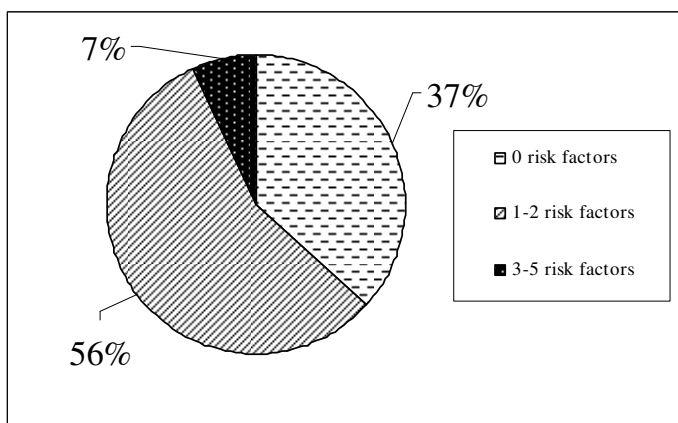


FIGURE 25b: Combined Risk Factors for women (n = 1575)

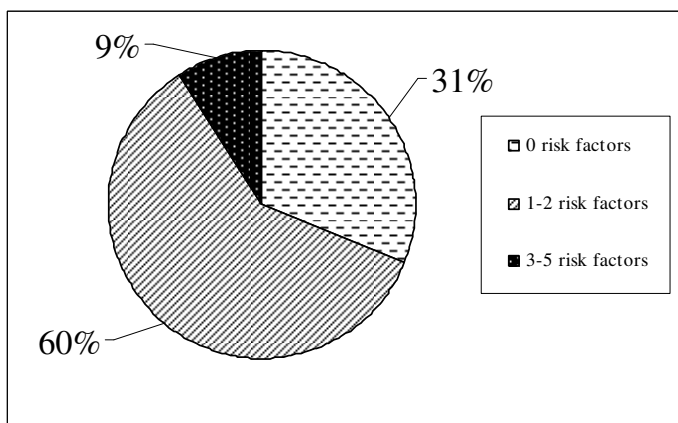


FIGURE 25c: Combined Risk Factors for both sexes (n = 2493)

## IV Discussion

### 4.1 Representation

Due to a limited budget, this was a subnational study that covered the population of Vientiane municipality only and not the whole Lao PDR. The data were weighted according to probability of selection to make it representative of the population of this capital city of Laos.

An important point to look at is that the population of Lao PDR is composed by many minority ethnic groups previously classified in three main groups: Lao Lum, Lao Sung and Lao Theung. In this study most of the randomized cases were from the Lao Lum group, which is the largest group of population in Lao PDR. Thus, it is uncertain that the findings of this study could be applied to other ethnic groups in Lao PDR.

### 4.2 Key Results and New Knowledge

Previous tobacco studies conducted in Laos have reported higher smoking prevalence of in Lao population (WHO, 2005a; [http://www.cdc.gov/global/GYTS/factsheets/2003/Laos\\_PDR\\_vientiane](http://www.cdc.gov/global/GYTS/factsheets/2003/Laos_PDR_vientiane), MoH, 2006). However, in this study it was detected that 20% of the population involved in this study are current smokers and the rate of tobacco smoking was significantly higher in the male group (43% versus 2%). But it's important to note that even though it's mostly males that smoke, it's still a problem for women as they are exposed to second-hand smoke.

Tobacco use is one of the most important contributors to premature death and avoidable morbidity in both low-income and high-income countries (Esson KM and Leeder SR, 2004). In addition, smoking attributable costs represent a significant loss for the entire national economy. Studies have found that smoking attributable costs have reached 2.1%–3.4% of gross domestic product (GDP) in Australia, 1.3%–2.2% of GDP in Canada and 1.4%–1.6% of GDP in the United States (Lightwood J et al, 2000). Smoking attributable costs account for 6–15% of health care expenditures in high-income countries (World Bank, 1999).

In this study, it was detected that 56% of the population accepted to have consumed alcohol in the past 12 months. Amongst these drinkers, 73.0% consume 6 or more drinks on a drinking day. These drinkers indicated they consume an average of 9.4 drinks per drinking day. Among current drinkers (drank in past 30 days), 65.2% of women and 59.3% of men engaged in binge drinking in the past week. It is well established that harmful alcohol drinking is a risk factor for many non communicable diseases (WHO, 2005a). A binge alcohol consumption could lead to chronic diseases such as gastritis, liver cirrhosis stroke, dilated cardiomyopathy. In addition a binge alcohol drinking could lead to traffic accident with huge economic impact to the victims, injury and violent behavior.



In this study it was detected that fruit and vegetable consumption is generally high with fruit consumed an average of 5.2 days per week and vegetables consumed an average of 6.5 days per week. On average, the population is eating 3.5 servings of fruit and 4.7 servings of vegetables per day. However, 36.6% of the population is not obtaining the recommended “5 servings per day”. This one third of the population with low fruit and vegetable intake is at greater risk of non-communicable disease. Thus, appropriate interventional health promotion program should be implemented to deal with diet is necessary.

It was found that less than half the population engages in any vigorous physical activity, which has specific health benefits. In addition, 64.1% of the population are engaging in high levels of physical activity. Significantly more men (72.1%) than women (59.1%) are reaching this level of physical activity. The majority of physical activity (70.5%) comes from work-related activities and 68.2% of the population do no leisure time activity. This could be due to that five of the nine districts in which data were collected are located in rural area and the randomized cases performed high physical activity due to their labor. Thus, in the Lao PDR case, physical activity might be focused on those who live in urban area in which life style is changing due to civilization. The issue is that as the lifestyle changes to a more urbanized one, levels of physical activity will likely go down because people are mostly getting their activity from work with few people getting sufficient physical activity from leisure time activities.

It was detected that **27.4%** of the population is **overweight** and **5.8%** is **obese**. In this study overweight was defined as a body mass index over 25 to match the WHO’s STEPs survey on NCD risk factors data performed in other countries. If overweight is defined as a body mass index over 23 as used for Asian population ([Asia Pacific Western Pacific Regional WHO recommendation](#); Pheung Chai et al., 2003), then the percentage of overweight would be much higher. Accordingly, mass education to prevent obesity is also necessary for Lao PDR.

It was revealed in this study that that 20.5% of women and 24.9% of men have raised blood pressure ( $SBP \geq 140$  and/or  $DBP \geq 90$  mmHg) or are on medication for raised blood pressure. Amongst these individuals, 83.8% are not on medication for raised blood pressure. This could be a good explanation on why there are too many cases of patients with hypertension leading to catastrophic complications such as stroke, chronic kidney disease, heart failure ([Khamtan A & Vang C, 2004](#), [Phommachanh B & Vang C, 2007](#), [Sombadith X et al, 2005](#); [Inkeomanivong S & Vang C, 2006](#); [Chuefue CT et al, 2005](#); [Somsamouth B et al, 2005](#); [Yang S et al, 2006](#); [Saytouki S et al, 2007](#)). This is a very important issue for Lao PDR to deal with to prevent cardiovascular diseases.

In our study we detected that nearly 60% (59.8%) of the population has 1 or 2 risk factors. An additional 9.2% have 3 or more risk factors. . Clarke and colleagues performed a Cohort study in the England, United Kingdom to examine, in middle-aged men, the relation between expected and actual life expectancy and risk factors for cardiovascular diseases ([Clarke et al, 2009](#)). The investigators used data from nearly 19,000 male civil service employees aged 40-69 years in London, England, who originally participated in the Whitehall Study in 1967-1970. At time of baseline enrollment, consenting study subjects completed a standardized questionnaire and had various risk factors for CVD assessed including cigarette smoking, blood pressure (BP), BMI, serum glucose levels, and blood lipids. Mortality follow-up of this large

cohort of middle-aged men was excellent and all-cause and cause-specific mortality was assessed through 2005. A total of 13,501 men died over this period and cause of death was able to be ascertained in more than 11,300 cases. A sample of surviving men were also re-examined in 1997. At time of baseline study enrollment, 42% of the men were current smokers, 39% were found to have high BP, and slightly more than one half had an elevated total serum cholesterol level

As expected, men who were current smokers were at markedly increased risk for both vascular causes of death ( $RR=1.57$ ) and non-vascular mortality ( $RR=2.1$ ). Moreover, men who were smoking at the time of study entry had a more than six year reduced life expectancy at age 50 compared with non-smoking men. Similarly, persons with elevated BPs at the time of study entry were at increased risk for vascular associated mortality and reduced life expectancy than persons with lower levels of BP (difference in life expectancy of five years) as were persons with high, as compared to those with lower, serum cholesterol levels (approximate two-year reduction in life expectancy) (Clarke et al, 2009).

In examining the effects of combinations of the three main risk factors for CHD, the hazards ratios for vascular mortality increased with an increasing number of CVD risk factors being present. For example, compared with the 17% of men who did not have any risk factors for CVD present at the time of study entry, men with all three risk factors present (8%) in the late 1960s experienced a three-fold higher rate of dying from vascular disease, a two-fold higher rate of dying from non-vascular causes, and a nearly 10-year shorter life expectancy at age 50 (24 years vs 33 years). In addition, in comparison with men who were in the lowest 5% of a calculated risk score based on cigarette smoking, diabetes, level of BP, BMI, and serum cholesterol levels, these high risk men had a 15-year shorter life expectancy from age 50 than those in the lowest fifth percentile (20 vs 35 years) (Clarke et al, 2009).

Despite substantial changes in these risk factors over time, baseline differences in risk factors were associated with 10 to 15 year shorter life expectancy from age 50. This study provide support for the public health policies aimed at achieving modest changes in major risk factors throughout the population to achieve improvements in life expectancy (Clarke et al, 2009).

## V Conclusion and Recommendations

### 5.1 Conclusions

#### 1. Tobacco Use

- Nearly 20% of the population currently smokes tobacco.
- Most of them (98.7%) are daily smokers.
- Smoking rates are markedly higher in men (43.2%).
- Age of initiation of daily smoking has decreased with time (though not significantly).

## **2. Alcohol Consumption**

- 56% of the population have consumed alcohol in the past 12 months.
- Amongst these drinkers, 73.0% consume an average of 6 or more drinks on a drinking day.
- These drinkers indicated they consume an average of 9.4 drinks per drinking day.
- Among current drinkers (drank in past 30 days), 65.2% of women and 59.3% of men engaged in binge drinking\* in the past week.

## **3. Diet**

- Fruit and vegetable consumption is generally high, with fruit consumed an average of 5.2 days per week and vegetables consumed an average of 6.5 days per week.
- On average, the population is eating 3.5 servings of fruit and 4.7 servings of vegetables per day.
- However, 36.6% of the population is not obtaining the recommended “5 a day”.

## **4. Physical Activity**

- Nearly 2/3rds (64.1%) of the population are engaging in high levels of physical activity.
- Significantly more men (72.1%) than women (59.1%) are reaching this level of physical activity.
- The majority of physical activity (70.5%) comes from work-related activities and 68.2% of the population do no leisure time activity.
- Over half the population (52.8%) does no vigorous physical activity.

## **4. Overweight and Obesity**

- 27.4% of the population is overweight and 5.8% is obese.
- There are no significant differences between men and women.

## **5. Blood Pressure**

- 20.5% of women and 24.9% of men have raised blood pressure ( $SBP \geq 140$  and/or  $DBP \geq 90$ ) or are on medication for raised blood pressure.
- Amongst these individuals, 83.8% are not on medication for raised blood pressure.

## **6. Combined Risk Factors**

- Nearly 60% (59.8%) of the population has 1 or 2 risk factors.

- An additional 9.2% have 3 or more risk factors.

## **5.2 Recommendations**

- 1 Lao National Policy/action plans on NCD Prevention and Control is necessary
- 2 Interventional programs on the most relevant NCD risk factors are required
  - Hypertension
  - Tobacco smoking
  - Alcohol intake
  - Exercise
  - Healthy Diet
- 3 Mass education to prevent chronic diseases is necessary

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## APPENDICES

### Appendix A: Kish Method used to randomize participant to this study

#### 1 Kish Household List

**Directions** Match the household number assigned to the household with the Kish table below and identify which table from the Kish Summary of Eight Tables should be used.

Household	Kish Table	Household	Kish Table
1	A	26	A
2	A	27	B1
3	B1	28	B2
4	B2	29	C
5	C	30	C
6	C	31	D
7	D	32	D
8	D	33	E1
9	E1	34	E2
10	E2	35	F
11	F	36	F
12	F	37	A
13	A	38	A
14	A	39	B1
15	B1	40	B2
16	B2	41	C
17	C	42	C
18	C	43	D
19	D	44	D
20	D	45	E1
21	E1	46	E2
22	E2	47	F
23	F	48	F
24	F	49	A
25	A	etc.	etc.

## 2 Kish Household Coversheet

**Directions to  
fill out Adult  
N°**

Order the adults 1-6 by:

males in order of decreasing age (oldest to youngest)

females in order of decreasing age (oldest to youngest)

Example:

Sex	Age		Adult n°
M	45		1
F	47		3
M	25		2

### List all persons age 25-64 in household

Sex	Age		Adult n°	Selected Respondent

Household Number \_\_\_\_\_

Cluster Number \_\_\_\_\_

Selection Table A	
If n° of adults is:	Select adult n°
1	1
2	1
3	1
4	1
5	1
6 or more	1

Selection Table B1	
If n° of adults is:	Select adult n°
1	1
2	1
3	1
4	1
5	2
6 or more	2

Selection Table B2	
If n° of adults is:	Select adult n°
1	1
2	1
3	1
4	2
5	2
6 or more	2

Selection Table C	
If n° of adults is:	Select adult n°
1	1
2	1
3	2
4	2
5	3
6 or more	3

Selection Table D	
If n° of adults is:	Select adult n°
1	1
2	2
3	2
4	3
5	4
6 or more	4

Selection Table E1	
If n° of adults is:	Select adult n°
1	1
2	2
3	3
4	3
5	3
6 or more	5

Selection Table E2	
If n° of adults is:	Select adult n°
1	1
2	2
3	3
4	4
5	5
6 or more	5

Selection Table F	
If n° of adults is:	Select adult n°
1	1
2	2
3	3
4	4
5	5
6 or more	6

## **Appendix B: Information Sheet and Consent Forms**

### **Consent Form for Step 1 & 2**

Dear Participant

#### **Random selection**

You have been randomly selected to be part of this survey and this is why we would like to interview you. This survey is conducted by the World Health Organization in collaboration with the Ministry of Health and the WHO Regional Office and will be carried out by professional interviewers from the Lao STEP Survey Team of the Lao Health Ministry. This survey is currently taking place in several countries around the world.

**Confidentiality** The information you provide is totally confidential and will not be disclosed to anyone. It will only be used for research purposes. Your name, address, and other personal information will be removed from the instrument, and only a code will be used to connect your name and your answers without identifying you. You may be contacted by the survey team again only if it is necessary to complete the information on the survey.

#### **Voluntary participation**

Your participation is voluntary and you can withdraw from the survey after having agreed to participate. You are free to refuse to answer any question that is asked in the questionnaire. If you have any questions about this survey you may ask me or contact Assoc. Prof. Vang Chu, the principal investigator of this research project at the Lao-Luxembourg Heart Institute on 214026.

#### **Consent to participate**

Signing this consent indicates that you understand what will be expected of you and are willing to participate in this survey.

Read by Participant		Interviewer	
Agreed		Refused	

**Signatures**

I hereby provide INFORMED CONSENT to take part in Steps 1 and 2 of the Risk Factors Study. For participants under 21 years old, a parent or guardian must also sign this form.

Name: \_\_\_\_\_ Sign: \_\_\_\_\_

Witness: \_\_\_\_\_ Sign: \_\_\_\_\_

## Appendix C Questionnaire form

Participant Identification Number

□ □ □ □ □ □ □ □ □ □

### WHO STEPS Instrument for Chronic Disease Risk Factor Surveillance

#### Lao PDR, Vientiane Capital City

Respondent Identification, Location and Date

STEPS Q No.	STEPS Question	Choice for answer	response	Code
	Respondent Identification	1-999999		ID
1	District code	1-999	□ □ □ □	I1
2	Centre/Village name	Text		I2
3	Centre/Village code	1-999	□ □ □ □	I3
4	Interviewer Identification	1-999	□ □ □ □	I4

5	Date of completion of the instrument	Value entered as date dd/mm/yyyy	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	I5

Consent, Interview Language and Name

STEPS Q No.	STEPS Question	Choice for answer	response	Code
6	Consent has been read out to participant	1 Yes		I6
		2 No		
		7 Don't Know		
		8 Not applicable		
		9 Missing		
7	Consent has been obtained (verbal or written) If no consent end	1 Yes		I7
		2 No		

8	Interview Language	1 English		I8
		2 Lao		
		3 Hmong		
		4 Others		
9	Time of interview (24 hour clock)	text		I9
10	Family Name	text		I10
11	First Name	text		I11
12	Contact phone number where possible	text		I12
13	Specify whose phone	1 Work	1 _____	I13
		2 Home	2 _____	
		3 Neighbour	3 _____	
		4 Other (specify)	4 _____	
		Text- Other	Text- Other_____	I13other



Step 1: Demographic Information

STEPS Q No.	STEPS Question	Choice for answer	response	Code
14	Sex (Record Male / Female as observed)	1 Male		C1
		2 Female		
15	What is your date of birth? Don't Know 77 777 7777	Value entered as date dd/mm/yyyy		C2
16	How old are you?	25-64		C3
17	In total, how many years have you spent at school or in full-time study (excluding pre-school)?	0-22		C4
		77 Don't know		
		88 Refused		
		99 Missing		

18	What is your [insert relevant ethnic group / racial group / cultural subgroup / others] background?	1 Lao Lum		C5
		2 Lao Sung		
		3 Lao Theung		
		4 Other		
		8 Refused		
		9 Missing		
19	What is the highest level of education you have completed?	1 No formal schooling		C6
		2 Less than primary school		
		3 Primary school completed		
		4 Secondary school completed		
		5 High school completed		
		6 College/University completed		
		7 Post graduate degree		
		77 Don't know		
		88 Refused		
		99 Missing		

20	Which of the following best describes your main work status over the last 12 months?	1 Government employee		C7
		2 Non-government employee		
		3 Self-employed		
		4 Non-paid		
		5 Student		
		6 Homemaker		
		7 Retired		
		8 Unemployed (able to work)		
		9 Unemployed (unable to work)		
		77 Don't know		
		88 Refused		
		99 Missing		
21	How many people older than 18 years, including yourself, live in your household?	0-25		C8
		77 Don't Know		
		88 Refused		
		99 Missing		

22	Taking the past year, can you tell me what the average earnings of the household have been?  (RECORD ONLY ONE, NOT ALL 3)  (If known any of them go to T1)	Per week	1-9999999		C9a
			7777777 DK		
		Per month	1-9999999		C9b
			7777777 DK		
		Per year	1-9999999		C9c
			7777777 DK		
		8 Refused			
23	If you don't know the amount, can you give an estimate of the annual household income if I read some options to you? Is it	1 ≤ 500 USD			C10
		2 500-1000 USD			
		3 1000-1500 USD			
		4 1500-2000 USD			
		5 ≥2000 USD			
		7 Don't Know			
		8 Refused			
		9 Missing			

# Optional Questions Demographic Information

X`1 (19)		0. Illiterate		C6x1
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## Step 1: Tobacco Use

STEPS Q No.	STEPS Question	Choice for answer	response	Code
24	Do you currently smoke any tobacco products, such as cigarettes, cigars or pipes?	1 Yes		T1
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
25	If Yes, Do you currently smoke tobacco products daily?	1 Yes		T2
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		

26	How old were you when you first started smoking daily?  (If known go to T5a)	8-64		T3
		77 Don't Know		
		88 No Applicable		
		99 Missing		
27	Do you remember how long ago it was?  (RECORD ONLY 1, NOT ALL 3)  (If known any of the answer of T4a or T4b or T4c, go to T5a)	1-55 (years)		T4a
		77 Don't Know		
		88 No Applicable		
		99 Missing		
		1-24 (months)		T4b
		777 Don't Know		
		88 No Applicable		
		99 Missing		
		1-48 (weeks)		T4c
		77 Don't Know		
		88 No Applicable		
		99 Missing		

28	<p>On average, how many of the following do you smoke each day?</p> <p>(RECORD FOR EACH TYPE)</p> <p>(If other go to T5other)</p>	Manufactured cigarettes	1-50		T5a
			77 Don't know		
			88 Refused		
			99 Missing		
		Hand-rolled cigarettes	1-50		T5b
			77 Don't know		
			88 Refused		
			99 Missing		
		Pipes full of tobacco	1-50		T5c
			77 Don't know		
			88 Refused		
			99 Missing		
		Cigars, cheroots, cigarillos	1-50		T5d
			77 Don't know		
			88 Refused		
			99 Missing		

		Other	1-50		T5e
			77 Don't know		
			88 Refused		
			99 Missing		
		Other (please specify):	Text		T5other
29	In the past, did you ever smoke daily?  (If No go to T9)	1 Yes			T6
		2 No			
		7 Don't Know			
		8 Refused			
		9 Missing			
30	If Yes, How old were you when you stopped smoking daily?  (If known go to T9)	10-64			T7
		77 Don't Know			
		88 Refused			
		99 Missing			



31	How long ago did you stop smoking daily?  (RECORD ONLY 1, NOT ALL 3)  (If known go to T9)	1-54 (years)		T8a
		77 Don't Know		
		88 No Applicable		
		99 Missing		
		1-24 (months)		T8b
		77 Don't Know		
		88 No Applicable		
		99 Missing		
		1-48 (weeks)		T8c
		77 Don't Know		
		88 No Applicable		
		99 Missing		

32	Do you currently use any smokeless tobacco such as [snuff, chewing tobacco, betel]?  (If No go to T12)	1 Yes			T9		
		2 No					
		7 Don't Know					
		8 Refused					
		9 Missing					
33	If Yes, Do you currently use smokeless tobacco products daily?  (If No go to T12)	1 Yes			T10		
		2 No					
		7 Don't Know					
		8 Refused					
		9 Missing					
34	On average, how many times a day do you use ....  (RECORD FOR EACH TYPE)  (If other go to T11other)	Snuff, by mouth	1-50		T11a		
			77 Don't know				
			88 Refused				
			99 Missing				
		Snuff, by nose	1-50		T11b		
			77 Don't know				

			88 Refused		
			99 Missing		
		Chewing tobacco	1-50		T11c
			77 Don't know		
			88 Refused		
			99 Missing		
		Betel, quid	1-50		T11d
			77 Don't know		
			88 Refused		
			99 Missing		
		Other	1-50		T11e
			77 Don't know		
			88 Refused		
			99 Missing		
		Other (please specify):	Text		T11other

35	In the past, did you ever use smokeless tobacco such as [snuff, chewing tobacco, or betel] daily?  (USE SHOWCARD OR SHOW EXAMPLES)	1 Yes		T12
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		

#### Step 1: Alcohol Use

STEPS Q No.	STEPS Question	Choice for answer	response	Code
36	Have you consumed alcohol (such as beer, wine, spirits, fermented cider or [add other local examples] within the past 12 months?  (If No go to D1)	1 Yes		A1
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
37	In the past 12 months, how frequently have you	1 (Daily)		A2

	had at least one drink?	2 (5-6 days per week)			
	(USE SHOWCARD)	3 (1-4 days per week)			
		4 (1-3 days per month)			
		5 (Less than once a month)			
		7 Don't Know			
		8 Refused			
		9 Missing			
38	When you drink alcohol, on average, how many drinks do you have during one day?	Number 1-50			A3
		77 Don't Know			
		88 Refused / NA			
		99 Missing			
39	Have you consumed alcohol (such as beer, wine, spirits, fermented cider or [add other local examples] within the past 30 days?  (USE SHOWCARD OR SHOW EXAMPLES. If No go to A6)	1 Yes			A4
		2 No			
		7 Don't Know			
		8 Refused			
		9 Missing			
40	During each of the past 7 days, how many	Monday	1-50		A5a

	standard drinks of any alcoholic drink did you have each day?  (RECORD FOR EACH DAY USE SHOWCARD)		77 Don't know		
			88 Refused		
			99 Missing		
		Tuesday	1-50		
			77 Don't know		
			88 Refused		
			99 Missing		
		Wednesday	1-50		
			77 Don't know		
			88 Refused		
			99 Missing		
		Thursday	1-50		
			77 Don't know		
			88 Refused		
			99 Missing		
Friday	1-50				
	77 Don't know				

			88 Refused		
			99 Missing		
		Saturday	1-50		A5f
			77 Don't know		
			88 Refused		
			99 Missing		
		Sunday	1-50		A5g
			77 Don't know		
			88 Refused		
			99 Missing		
41	In the past 12 months, what was the largest number of drinks you had on a single occasion, counting all types of standard drinks together?	1-30			A6
		77 Don't Know			
		88 Refused / NA			
		99 Missing			
42	For men only: In the past 12 months, on how many days did you	1-365			A7
		77 Don't Know			

	have five or more standard drinks in a single day?	88 Refused / NA		
		99 Missing		
43	For women only: In the past 12 months, on how many days did you have four or more standard drinks in a single day?  (If zero days go to D3)	1-365		A8
		77 Don't Know		
		88 Refused / NA		
		99 Missing		
X2	Do you avoid alcohol intake during Khao Phansa Period ?	1. Yes  2. No		A 9x2



Step 1: Diet

STEPS Q No.	STEPS Question	Choice for answer	response	Code
44	In a typical week, on how many days do you eat fruit?	Days 0-7		D1
		9 Missing		
45	How many servings of fruit do you eat on one of those days?  (USE SHOWCARD)	Number 1-15		D2
		77 Don't Know		
		88 Refused / NA		
		99 Missing		
46	In a typical week, on how many days do you eat vegetables?  (USE SHOWCARD)  (If zero day go to D5)	Days 0-7		D3
		99 Missing		

47	How many servings of vegetables do you eat on one of those days?  (USE SHOWCARD)	Number 1-15			D4		
		77 Don't Know					
		88 Refused / NA					
		99 Missing					
48	What type of oil or fat is most often used for meal preparation in your household?  (USE SHOWCARD SELECT ONLY ONE)  (If other go to D5other)	1 Vegetable oil			D5		
		2 Lard or suet					
		3 Butter or ghee					
		4 Margarine					
		5 Other					
		6 None in particular					
		7 None used					
		77 Don't know					
		99 Missing					
		Other (please specify):	Text		D5other		

Step 1: Physical Activity

STEPS Q No.	STEPS Question	Choice for answer	response	Code
Activity at work				
49	<p>Does your work involve vigorous-intensity activity that causes large increases in breathing or heart rate like [carrying or lifting heavy loads, digging or construction work] for at least 10 minutes continuously?</p> <p>(USE SHOWCARD)</p> <p>(If No go to P4)</p>	1 Yes		P1
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
50	In a typical week, on how many days do you do vigorous-intensity activities as part of your work?	Days 1-7		P2
		9 Missing		

51	How much time do you spend doing vigorous-intensity activities at work on a typical day?	Hours 1-24		P3A
		77 Don't Know		
		99 Missing		
		Minutes 1-60		P3B
		77 Don't Know		
		99 Missing		
52	Does your work involve moderate-intensity activity, that causes small increases in breathing or heart rate such as brisk walking [or carrying light loads] for at least 10 minutes continuously?  (USE SHOWCARD)  (If No go to P7)	1 Yes		P4
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
53	In a typical week, on how many days do you do moderate-intensity activities as part of your work?	Days 1-7		P5
		9 Missing		

54	How much time do you spend doing moderate-intensity activities at work on a typical day?	Hours 1-24		P6A
		77 Don't Know		
		99 Missing		
		Minutes 1-60		P6B
		77 Don't Know		
		99 Missing		
Travel to and from places				
55	Do you walk or use a bicycle (pedal cycle) for at least 10 minutes continuously to get to and from places?  (If No go to P10)	1 Yes		P7
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
56	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?	Days 1-7		P8
		9 Missing		

57	How much time do you spend walking or bicycling for travel on a typical day?	Hours 1-24		P9a
		77 Don't Know		
		99 Missing		
		Minutes 1-60		P9b
		77 Don't Know		
		99 Missing		
58	Do you do any vigorous-intensity sports, fitness or recreational (leisure) activities that cause large increases in breathing or heart rate like [running or football, ] for at least 10 minutes continuously?  (USE SHOWCARD)  (If No go to P13)	1 Yes		P10
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
59	In a typical week, on how many days do you do vigorous-intensity sports, fitness or recreational (leisure) activities?	Days 1-7		P11
		9 Missing		

60	How much time do you spend doing vigorous-intensity sports, fitness or recreational activities on a typical day?	Hours 1-24		P12a
		77 Don't Know		
		99 Missing		
		Minutes 1-60		P12b
		77 Don't Know		
		99 Missing		
61	Do you do any moderate-intensity sports, fitness or recreational (leisure) activities that causes a small increase in breathing or heart rate such as brisk walking,(cycling, swimming, volleyball)for at least 10 minutes continuously?  (USE SHOWCARD)  (If No go to P16)	1 Yes		P13
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
62	In a typical week, on how many days do you do moderate-intensity sports, fitness or recreational (leisure) activities?	Days 1-7		P14
		9 Missing		

63	How much time do you spend doing moderate-intensity sports, fitness or recreational (leisure) activities on a typical day?	Hours 1-24		P15a
		77 Don't Know		
		99 Missing		
		Minutes 1-60		P15b
		77 Don't Know		
		99 Missing		
Sedentary behaviour				
64	How much time do you usually spend sitting or reclining on a typical day?	Hours 1-24		P16a
		77 Don't Know		
		99 Missing		
		Minutes 1-60		P16b
		77 Don't Know		
		99 Missing		



Step 1: History of Raised Blood Pressure

STEPS Q No.	STEPS Question	Choice for answer	response	Code
65	When was your blood pressure last measured by a health professional?	1 Within past 12 months		H1
		2 (1-5 years ago)		
		3 Not within past 5 years		
		7 Don't Know		
		8 Refused		
		9 Missing		
66	During the past 12 months have you been told by a doctor or other health worker that you have raised blood pressure or hypertension?	1 Yes		H2
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		

67	Are you currently receiving any of the following treatments/advice for high blood pressure prescribed by a doctor or other health worker?			
	Drugs (medication) that you have taken in the last 2 weeks	1 Yes		H3a
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
	Special prescribed diet	1 Yes		H3b
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
Advice or treatment to lose weight	1 Yes		H3c	
	2 No			
	7 Don't Know			
	8 Refused			
	9 Missing			

67 cont	Advice or treatment to stop smoking	1 Yes		H3d
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
		9 Missing		
	Advice to start or do more exercise	1 Yes		H3e
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
68	During the past 12 months have you seen a traditional healer for raised blood pressure or hypertension	1 Yes		H4
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		

69	Are you currently taking any herbal or traditional remedy for your raised blood pressure?	1 Yes		H5
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		

#### Step 1: History of Diabetes

STEPS Q No.	STEPS Question	Choice for answer	response	Code
70	Have you had your blood sugar measured in the last 12 months?	1 Yes		H6
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		

71	During the past 12 months, have you ever been told by a doctor or other health worker that you have diabetes?	1 Yes		H7
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
72	Are you currently receiving any of the following treatments/advice for diabetes prescribed by a doctor or other health worker?			
	Insulin	1 Yes		H8a
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
	Oral drug (medication) that you have taken in the last 2 weeks	1 Yes		H8b
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		

72 cont	Special prescribed diet	1 Yes		H8c
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
	Advice or treatment to lose weight	1 Yes		H8d
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
	Advice or treatment to stop smoking	1 Yes		H8e
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		

	Advice to start or do more exercise	1 Yes		H8f
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
73	During the past 12 months have you seen a traditional healer for diabetes?	1 Yes		H9
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
74	Are you currently taking any herbal or traditional remedy for your diabetes?	1 Yes		H10
		2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		

Step 2: Physical Measurements

STEPS Q No.	STEPS Question	Choice for answer		response	Code
Height and weight					
75	Interviewer ID	1-900			M1
		999 Missing			
76	Device IDs for height and weight	Height	1-90		M2a
			99 Missing		
		Weight	1-90		M2b
			99 Missing		
77	Height	100.0-270.0			M3
		888.8 Refused			
		999.9 Missing			
78	Weight (Avoid measuring if pregnant woman)	20.0-350.0			M4
		666.6 Too large for scale			
		888.8 Refused			
		999.9 Missing			



79	(For women) Are you pregnant?	1 Yes		M5
	(If No go to M8)	2 No		
		7 Don't Know		
		8 Refused		
		9 Missing		
Waist				
80	Device ID for waist	1-90		M6
		99 Missing		
81	Waist circumference (Avoid measuring if pregnant woman)	30.0-200.0		M7
		888.8 Refused		
		999.9 Missing		
Blood pressure				
82	Interviewer ID	1-900		M8
		999 Missing		
83	Device ID for blood pressure	1-90		M9
		99 Missing		

84	Cuff size used	1 Small			M10
		2 Medium			
		3 Large			
		9 Missing			
85	Reading 1	Systolic	40.0-300		M11a
			888 Refused		
			999 Missing		
		Diastolic	30.0-200.0		M11b
			888 Refused		
			999 Missing		
86	Reading 2	Systolic	40.0-300.0		M12a
			888 Refused		
			999 Missing		
		Diastolic	30.0-200.0		M12b
			888 Refused		
			999 Missing		

87	Reading 3	Systolic	40.0-300.0		M13a
			888 Refused		
			999 Missing		
		Diastolic	30.0-200.0		M13b
			888 Refused		
			999 Missing		
88	During the past two weeks, have you been treated for raised blood pressure with drugs (medication) prescribed by a doctor or other health worker?	1 Yes			M14
		2 No			
		7 Don't Know			
		8 Refused			
		9 Missing			
Hip Circumference and Heart Rate					
89	Hip circumference	45.0-300.0			M15
		888.8 Refused			
		999.9 Missing			

90		Heart Rate (Record if automatic blood pressure device is used)			
	Reading 1	30.0-200.0		M16a	
		888 Refused			
		999 Missing			
	Reading 2	30.0-200.0		M16b	
		888 Refused			
		999 Missing			
	Reading 3	30.0-200.0		M16c	
		888 Refused			
		999 Missing			

## Appendix D: Interview Tracking Form

Centre (Village/Cluster) Number \_\_\_\_\_

### Interview Tracking Form

House hold Number	Number of eligible person in house hold	Participant ID	Visit 1 at home	Visit 2 at home	M 25 to 34	M 35 to 44	M 45 to 54	M 55 to 64	F 25 to 34	F 35 to 44	F 45 to 54	F 45 to 54	F 55 to 64	S T E P 1 E	S T E P 1 Y	S T E P 1 N	S T E P 2 E	S T E P 2 Y	S T E P 2 N	Appoin tment time	Individu al comme nt

E= eligible

Y= yes

N= No

M= Male

F= Female

## Appendix E: Show Cards

### 1 List of Tobacco Products

**For use with** This show card relates to:

STEP	Section	Items
Step 1, core tobacco use	T	T1 to T8

<b>Cigarettes</b>
<b>Cigarillos</b>
<b>Cigars</b>
<b>Cheroots</b>
<b>Chuttas</b>
<b>Bidis</b>
<b>Local tobacco products</b> (each country to add to the list)
<b>Local tobacco products</b> (each country to add to the list)
<b>Local tobacco products</b> (each country to add to the list)

## 2. Alcohol Consumption

**For use with** This show card relates to:

STEP	Section	Items
Step 1, core alcohol consumption	A	A1 to A5



1 standard  
bottle of  
**regular beer**



1 single  
measure of  
**spirits**  
(30ml)



1 medium  
size glass of  
wine  
(120ml)



1 measure  
of  
**aperitif**

**Note:** net alcohol content of a **standard drink is generally 10g.** of ethanol depending on the country. Countries will adapt this measure according to their own standards and will report this measure if different from the standard mentioned above

### 3. Diet (Typical Fruit and Vegetables and Serving Sizes)

**For use with** This show card relates to:

STEP	Section	Items
Step 1, core Diet	D	D1 to D4

<b>VEGETABLES</b> <b>are considered to be:</b>	<b>1 Serving =</b>	Spinach, salad, etc.
Raw green leafy vegetables	<b>1 cup</b>	Tomatoes, carrots, pumpkin, corn, Chinese cabbage, fresh beans, onion, etc.
Other vegetables, cooked or chopped raw	<b>1/2 cup</b>	
Vegetable juice	<b>1/2 cup</b>	

<b>FRUIT</b> <b>Is considered to be:</b>	<b>1 Serving =</b>	<b>Examples</b>
Apple, banana, orange	1 medium size piece	
Chopped, cooked, canned fruit	<b>1/2 cup</b>	
Fruit juice	<b>1/2 cup</b>	Juice from fruit, not artificially flavoured



**Serving size**

One standard serving = 80 grams (translated into different units of cups depending on type of vegetable and standard cup measures available in the country).

**WHO recommendation at least**

The World Health Organization recommends at least: 400 grams of vegetables and fruits per day, or 5 servings of 80 grams each.

**Note:** Tubers such as potatoes and cassava, however, are not included in this Recommendation

**Appendix F      Workshop on planning and implementation of  
TEPWISE approach to surveillance of chronic  
Diseases Risk Factors**

**Workshop on Planning and Implementation of the STEPwise approach to  
Surveillance of Chronic Diseases Risk Factors**

**28 May - 1 June, 2007**

**Vientiane**

MONDAY 28 MAY 2007

13:30 – 14:00 Opening Ceremony

Official opening by WHO representative on NCD in Laos, Dr.  
Douangchack

Introductions, objectives of the workshop

Dr. Douangchack and Ms. Melanie Cowan

14:00 - 14:30 NCD Overview in Laos (Dr. Vangchu)

14:30 - 15:00 Overview and rationale of the WHO STEPwise approach to  
surveillance

**15:00 - 15:30 Break**

15:30 - 16:30 Planning and Preparing a STEPS site and survey

16:30 - 17:00 Roles and responsibilities

TUESDAY 29 MAY. 2007

09:00 – 09:15 Review of Day 1 by participant

09:15 - 10:00 Overview of STEPS Survey Tools

10:00 - 10:45 STEPS Instrument (Part I)

**10:45 - 11:00 Break**

11:00 - 12:30 STEPS Instrument (Part II) & Discussion

**12:30 - 13:30 Lunch**

13:30 - 14:45 STEPS Sampling (Developing sample size and sample frame)

14:45 - 15:30 STEPS Sampling Spreadsheet

**15:30 - 16:00 Break**

16:00 - 17:00 The Kish Method for sampling within households, w/ exercises

17:00 - 17:30 Interactive Discussion of Sampling in Laos (initial)

**WEDNESDAY 30 MAY, 2007**

09:00 - 09:15 Review of Day 2 by participant

09:15 - 10:45 Weighting Data

**10:45 - 11:00 Break**

11:00 - 12:30 Interactive Discussion of Sampling in Laos (continued)

**12:30 - 13:30 Lunch**

13:30 - 15:30 Data Collection (Interview techniques, Interview tracking, physical  
and biochemical measurements: logistics)

**15:30 - 16:00 Break**

16:00 - 17:30 Interactive Discussion of Data Collection in Laos

**THURSDAY 31 May, 2007**

09:00 - 09:15 Review of Day 3 by participant

09:15 - 10:30 Mapping the Site Instrument

**10:30 – 10:45 Break**

10:45 – 12:30 Data Entry Processes and Data Management

**12:30 - 13:30 Lunch**

13:30 - 14:30 Data Analysis and Reporting

14:30 – 15:30 Development/Discussion of Laos Site Instrument

**15:30 - 16:00 Break**

16:00 - 17:30 Development/Discussion of Laos Site Instrument

**FRIDAY 1 JUNE, 2007**

09:00 - 09:15 Review day 4 by participant

09:15 - 10:30 Development of country implementation plans, preparation by groups

**10:30 – 11:00 Break**

11:00 – 12:30 Development of country implementation plans (continued)

**12:30 – 13:30 Lunch**

13:30 - 15:30 Group presentations of country implementation plans

**15:30 - 16:00 Break**

16:00 - 16:45 Group presentations of country implementation plans / Discussion

16:45 - 17:15 Discussion & next steps

Closing of workshop

## Appendix G      Data Collector Training Workshop Contents

### Agenda of Activities and Venue for Data Collector Training Workshop 3-4/1/2008

Thursday: 3/1/2008

Time	Contents	Speakers
8:00-8:30 AM	Registration	
8:30-8:40	Introduction and objectives of the workshop	Assoc. Prof. Chanphomma
8:40-9:00	Overview on the Lao STEP Survey on NCD Risk Factor Project	Assoc. Prof. Vang Chu
9:00-10:00 AM	What should you know as data collectors ?  <ul style="list-style-type: none"> <li>- How to approach to selected house hold</li> <li>- How to randomize participant with the Kish method &amp; Exercise cases 1, 2 and 3</li> <li>- The NCD STEP Consent form 1 &amp;2</li> </ul>	Assoc. Prof. Vang Chu
10:00-10:30 AM	Coffee Break	
10:30-11:30 AM	<ul style="list-style-type: none"> <li>- How to interview using the Lao questionnaire form and show Card + Exercise 1 (STEP 1)</li> </ul>	Assoc. Prof. Vang Chu
11:30-12:00 AM	<ul style="list-style-type: none"> <li>- How to measure BP, Weight, Height, Waist, Hip (STEP2)</li> </ul>	Dr. Xaysana
12:00-13:00 PM	Lunch Break	
13:00-14:00 PM	<ul style="list-style-type: none"> <li>- Blood tests procedures (STEP 3)</li> </ul>	Dr. Xaysana
14:00-14:30 PM	<ul style="list-style-type: none"> <li>- Role of Lao STEP Survey in Lao National NCD prevention and control</li> <li>- Data quality control and supervision</li> <li>- Data management and report</li> </ul>	Assoc. Prof. Vang Chu
14:30-15:00 PM	Coffee Break	
15:00-16:00 PM	Discussion on field trip for data collection	Lead by Assoc.Prof. Bounkong

Friday 4/1/2008

8:30-10:00 AM	Data entering	Assoc. Prof. Vang Chu
10:00-10:30 AM	Coffee Break	
10:30-11:30 PM	Financial administration and report	Dr. Soupachai & Dr. Sisouphan
11:30-12:00 PM	Wrap up and closing remark	Assoc. Prof. Chanphomma
12:00-13:30 PM	Lunch Break	
13:30-16:00 PM	Distribution of Field trip for Data collection material and equipment	Dr. Xaysana Dr. Idemer

Monday: 7/1/2008: Field trip for data collection for each data collector team in their respective area assigned

Tuesday 8/1/2008: Meeting of Data Collector Team Supervisor with the Lao Ministry of Health STEP Survey on NCD Risk Factor Steering Committee.  
at the MoH Conference room

#### 4. Typical Physical Activities

**For use with** This show card relates to:

STEP	Section	Items
Step 1, physical activity	P	P1 to P15

WORK RELATED PHYSICAL ACTIVITY		LEISURE/ SPARE TIME RELATED PHYSICAL ACTIVITY	
<b>MODERATE</b>  <b>Intensity Activities</b>  Makes you breathe somewhat harder  than normal	<b>VIGOROUS</b>  <b>Intensity Activities</b>  Makes you breathe much harder  than normal	<b>MODERATE</b>  <b>Intensity Activities</b>  Makes you breathe somewhat harder  than normal	<b>VIGOROUS</b>  <b>Intensity Activities</b>  Makes you breathe much harder  than normal
<b>Examples:</b> <ul style="list-style-type: none"> <li>• Cleaning (vacuuming, mopping, polishing, scrubbing, sweeping, ironing)</li> <li>• Washing (beating and brushing</li> </ul>	<b>Examples:</b> <ul style="list-style-type: none"> <li>• Forestry (cutting, chopping, carrying wood)</li> <li>• Sawing hardwood</li> <li>• Ploughing</li> </ul>	<b>Examples:</b> <ul style="list-style-type: none"> <li>• Cycling</li> <li>• Jogging</li> <li>• Dancing</li> <li>• Horse-riding</li> </ul>	<b>Examples</b> <ul style="list-style-type: none"> <li>• Soccer</li> <li>• Rugby</li> <li>• Tennis</li> <li>• High-impact aerobics</li> </ul>

carpets, wringing clothes (by hand) <ul style="list-style-type: none"> <li>• Gardening</li> <li>• Milking cows (by hand)</li> <li>• Planting and harvesting crops</li> <li>• Digging dry soil (with spade)</li> <li>• Weaving</li> <li>• Woodwork (chiselling, sawing softwood)</li> <li>• Mixing cement (with shovel)</li> <li>• Labouring (pushing loaded wheelbarrow, operating jackhammer)</li> <li>• Walking with load on head</li> <li>• Drawing water</li> <li>• Tending animals</li> </ul>	<ul style="list-style-type: none"> <li>• Cutting crops (sugar cane)</li> <li>• Gardening (digging)</li> <li>• Grinding (with pestle)</li> <li>• Labouring (shovelling sand)</li> <li>• Loading furniture (stoves, fridge)</li> <li>• Instructing spinning (fitness)</li> <li>• Instructing sports aerobics</li> <li>• Sorting postal parcels (fast pace)</li> <li>• Cycle rickshaw driving</li> </ul>	<ul style="list-style-type: none"> <li>• Tai chi</li> <li>• Yoga</li> <li>• Pilates</li> <li>• Low-impact aerobics</li> <li>• Cricket</li> </ul>	<ul style="list-style-type: none"> <li>• Aqua aerobics</li> <li>• Ballet dancing</li> <li>• Fast swimming</li> </ul>
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## **Appendix H:      Declarations**

### **A          Declaration by Principal Investigator**

The information supplied in this application is, to the best of my knowledge and belief, accurate. I have considered the ethical issues involved in this research and believe that I have adequately addressed them in this application. I understand that if the protocol for this research changes in any way I must inform the Research Ethics Review Committee.

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

### **B          Declaration by Head of Department**

I have read the application and believe it to be scientifically and ethically sound. I approve the research design. I give my consent for the application to be forwarded to the Ethics Committee.

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix I: Data collectors training workshop agenda

Thursday: 3/1/2008

Time	Contents	Speakers
8:00-8:30 AM	Registration	
8:30-8:40	Introduction and objectives of the workshop	Assoc. Prof. Chanphomma
8:40-9:00	Overview on the Lao STEP Survey on NCD Risk Factor Project	Assoc. Prof. Vang Chu
9:00-10:00 AM	What should you know as data collectors ? <ul style="list-style-type: none"> <li>- How to approach to selected house hold</li> <li>- How to randomize participant with the Kish method &amp; Exercise cases 1, 2 and 3</li> <li>- The NCD STEP Consent form 1 &amp;2</li> </ul>	Assoc. Prof. Vang Chu
10:00-10:30 AM	Coffee Break	
10:30-11:30 AM	<ul style="list-style-type: none"> <li>- How to interview using the Lao questionnaire form and show Card + Exercise 1 (STEP 1)</li> </ul>	Assoc. Prof. Vang Chu
11:30-12:00 AM	<ul style="list-style-type: none"> <li>- How to measure BP, Weight, Height, Waist, Hip (STEP2)</li> </ul>	Dr. Xaysana
12:00-13:00 PM	Lunch Break	
13:00-14:00 PM	<ul style="list-style-type: none"> <li>- Blood tests procedures (STEP 3)</li> </ul>	Dr. Xaysana
14:00-14:30 PM	<ul style="list-style-type: none"> <li>- Role of Lao STEP Survey in Lao National NCD prevention and control</li> <li>- Data quality control and supervision</li> <li>- Data management and report</li> </ul>	Assoc. Prof. Vang Chu
14:30-15:00 PM	Coffee Break	
15:00-16:00 PM	Discussion on field trip for data collection	Lead by Assoc.Prof. Bounkong

Friday 4/1/2008

8:30-10:00 AM	Data entering	Assoc. Prof. Vang Chu
10:00-10:30 AM	Coffee Break	
10:30-11:30 PM	Financial administration and report	Dr. Soupachai & Dr. Sisouphan
11:30-12:00 PM	Wrap up and closing remark	Assoc. Prof. Chanphomma
12:00-13:30 PM	Lunch Break	
13:30-16:00 PM	Distribution of Field trip for Data collection material and equipment	Dr. Xaysana Dr. Idemer

Monday: 7/1/2008: Field trip for data collection for each data collector team in their respective area assigned

Tuesday 8/1/2008: Meeting of Data Collector Team Supervisor with the Lao Ministry of Health STEP Survey on NCD Risk Factor Steering Committee.  
at the MoH Conference room

## Appendix J: Lao STEPS Data Book



WHO STEPS

Chronic Disease

Risk Factor Surveillance

Data Book for

Lao PDR, 2008

## Demographic Information Results

### *Age group by sex*

Description: Summary information by age group and sex of the respondents.

Instrument question:

Sex

What is your date of birth?

Age group and sex of respondents								
Age Group  (years)	Men			Women			Both Sexes	
	n	%		n	%		n	%
25-34	382	34.8		717	65.2		1099	26.3
35-44	512	38.7		811	61.3		1323	31.7
45-54	466	43.8		597	56.2		1063	25.4
55-64	331	47.6		364	52.4		695	16.6
25-64	1691	40.5		2489	59.5		4180	100.0

### *Ethnicity*

Description: Summary results for the ethnicity of the respondents.

Instrument Question:

What is your [insert relevant ethnic group/racial group/cultural subgroup/others] background?

Ethnic group of respondents					
Age Group (years)	Both Sexes				
	n	% Lao Lum	% Lao Sung	% Lao Theung	% Other
25-34	1083	95.8	3.9	0.3	0.1
35-44	1306	95.6	4.3	0.1	0.0
45-54	1047	94.7	4.2	1.0	0.2
55-64	686	97.1	2.6	0.3	0.0
<b>25-64</b>	<b>4122</b>	<b>95.7</b>	<b>3.9</b>	<b>0.4</b>	<b>0.1</b>

Description: Mean number of years of education among respondents.

## ***Education***

Instrument question:

In total, how many years have you spent at school or in full-time study (excluding pre-school)?

Mean number of years of education								
Age Group (years)	Men			Women			Both Sexes	
	n	Mean		n	Mean		n	Mean
25-34	365	9.5		689	8.0		1054	8.5
35-44	484	9.6		782	8.1		1266	8.6
45-54	441	9.2		537	6.7		978	7.8
55-64	301	8.0		280	5.3		581	6.7
25-64	1591	9.1		2288	7.4		3879	8.1

**Highest  
level of  
education**

Description: Highest level of education achieved by the survey respondents.

Instrument question:

What is the highest level of education you have completed?

Highest level of education								
Men								
Age Group (years)	n	% No formal schooling	% Less than primary school	% Primary school completed	% Secondary school completed	% High school completed	% College/ University completed	% Post graduate degree completed
25-34	381	1.8	10.0	19.2	24.9	28.9	14.2	1.0
35-44	504	2.8	9.1	20.4	23.2	28.0	14.9	1.6
45-54	463	4.1	16.4	21.6	18.8	19.0	15.3	4.8
55-64	330	9.4	20.3	28.5	16.4	12.4	11.5	1.5
<b>25-64</b>	<b>1678</b>	<b>4.2</b>	<b>13.5</b>	<b>22.1</b>	<b>21.0</b>	<b>22.6</b>	<b>14.2</b>	<b>2.3</b>

Highest level of education								
Women								
Age Group (years)	n	% No formal schooling	% Less than primary school	% Primary school completed	% Secondary school completed	% High school completed	% College/ University completed	% Post graduate degree completed
25-34	712	2.9	13.9	27.9	28.1	19.7	7.0	0.4
35-44	807	3.5	18.3	23.8	24.8	22.3	6.8	0.5
45-54	590	11.9	28.3	28.5	13.4	10.3	6.9	0.7
55-64	352	26.7	31.8	27.8	5.4	5.4	2.6	0.3
<b>25-64</b>	<b>2461</b>	<b>8.7</b>	<b>21.4</b>	<b>26.7</b>	<b>20.2</b>	<b>16.3</b>	<b>6.3</b>	<b>0.5</b>

Highest level of education								
Both Sexes								
Age Group (years)	n	% No formal schooling	% Less than primary school	% Primary school completed	% Secondary school completed	% High school completed	% College/University completed	% Post graduate degree completed
25-34	1093	2.6	12.5	24.9	27.0	22.9	9.5	0.6
35-44	1311	3.2	14.8	22.5	24.2	24.5	9.9	0.9
45-54	1053	8.5	23.1	25.5	15.8	14.2	10.6	2.5
55-64	682	18.3	26.2	28.2	10.7	8.8	6.9	0.9
<b>25-64</b>	<b>4139</b>	<b>6.9</b>	<b>18.2</b>	<b>24.8</b>	<b>20.6</b>	<b>18.8</b>	<b>9.5</b>	<b>1.2</b>

### ***Employment status***

Description: Proportion of respondents in paid employment and those who are unpaid. Unpaid includes persons who are non-paid, students, homemakers, retired, and unemployed.

Instrument question:

Which of the following best describes your main work status over the last 12 months?

Employment status					
Men					
Age Group (years)	n	% Government employee	% Non-government employee	% Self-employed	% Unpaid
25-34	379	14.8	17.9	27.4	39.8
35-44	503	18.5	12.3	31.6	37.6
45-54	462	24.5	6.5	32.7	36.4
55-64	328	11.6	4.0	29.3	55.2
<b>25-64</b>	<b>1672</b>	<b>17.9</b>	<b>10.3</b>	<b>30.5</b>	<b>41.2</b>



Employment status					
Women					
Age Group					
(years)	n	% Government employee	% Non-government employee	% Self-employed	% Unpaid
25-34	710	5.1	12.3	19.9	62.8
35-44	806	10.7	4.8	25.3	59.2
45-54	595	10.4	2.7	23.4	63.5
55-64	359	2.2	0.8	13.1	83.8
<b>25-64</b>	<b>2470</b>	<b>7.8</b>	<b>5.9</b>	<b>21.5</b>	<b>64.9</b>

Employment status					
Both Sexes					
Age Group					
(years)	n	% Government employee	% Non-government employee	% Self-employed	% Unpaid
25-34	1089	8.4	14.2	22.5	54.8
35-44	1309	13.7	7.7	27.7	50.9
45-54	1057	16.6	4.4	27.4	51.7
55-64	687	6.7	2.3	20.8	70.2
<b>25-64</b>	<b>4142</b>	<b>11.9</b>	<b>7.7</b>	<b>25.1</b>	<b>55.3</b>

Description: Proportion of respondents in unpaid work.

***Unpaid  
work and  
unemployed***

Instrument question:

Which of the following best describes your main work status over the last 12 months?

Unpaid work and unemployed							
Age Group (years)	Men						
	n	% Non-paid	% Student	% Home-maker	% Retired	Unemployed	
						% Able to work	% Not able to work
25-34	151	0.7	9.9	31.8	0.0	57.0	0.7
35-44	189	0.5	1.1	51.9	0.0	45.0	1.6
45-54	168	1.2	0.0	68.5	2.4	26.2	1.8
55-64	181	1.7	0.0	52.5	24.3	21.0	0.6
<b>25-64</b>	<b>689</b>	<b>1.0</b>	<b>2.5</b>	<b>51.7</b>	<b>7.0</b>	<b>36.7</b>	<b>1.2</b>

Unpaid work and unemployed							
Age Group (years)	Women						
	n	% Non-paid	% Student	% Home-maker	% Retired	Unemployed	
						% Able to work	% Not able to work
25-34	446	0.0	3.1	80.9	0.2	15.0	0.7
35-44	477	0.6	0.6	87.0	0.0	11.5	0.2
45-54	378	0.8	0.0	88.1	2.4	8.2	0.5
55-64	301	0.7	1.0	82.7	9.0	5.0	1.7
<b>25-64</b>	<b>1602</b>	<b>0.5</b>	<b>1.2</b>	<b>84.8</b>	<b>2.3</b>	<b>10.5</b>	<b>0.7</b>

**Unpaid work and unemployed**

Age Group (years)	Both Sexes						
	n	% Non-paid	% Student	% Home-maker	% Retired	Unemployed	
						% Able to work	% Not able to work
25-34	597	0.2	4.9	68.5	0.2	25.6	0.7
35-44	666	0.6	0.8	77.0	0.0	21.0	0.6
45-54	546	0.9	0.0	82.1	2.4	13.7	0.9
55-64	482	1.0	0.6	71.4	14.7	11.0	1.2
<b>25-64</b>	<b>2291</b>	<b>0.7</b>	<b>1.6</b>	<b>74.8</b>	<b>3.7</b>	<b>18.4</b>	<b>0.8</b>

***Per capita annual income***

Description: Mean reported per capita annual income of respondents in local currency.

Instrument question:

How many people older than 18 years, including yourself, live in your household?  
Taking the past year, can you tell me what the average earning of the household has been?

Mean annual per capita income	
n	Mean
<b>3968</b>	<b>777.4</b>

***Estimated household earnings***

Description: summary of participant household earnings by quintile.

Instrument question:

If you don't know the amount, can you give an estimate of the annual household

income if I read some options to you?

Estimated household earnings					
n	% Quintile 1: Under \$500	% Quintile 2: \$500-\$1000	% Quintile 3: \$1000-\$1500	% Quintile 4: \$1500-\$2000	% Quintile 5: Over \$2000
46	30.4	58.7	8.7	2.2	0.0

## Tobacco Use

Description: Current smokers among all respondents.

### **Current smoking**

Instrument questions:

Do you currently smoke any tobacco products, such as cigarettes, cigars, or pipes?

Percentage of current smokers											
Age Group  (years)	Men				Women				Both Sexes		
	n	% Current smoker	95% CI		n	% Current smoker	95% CI		n	% Current smoker	95% CI
25-34	372	31.2	22.7-39.8		682	1.1	0.1-2.0		1054	11.9	8.1-15.7
35-44	498	44.6	36.1-53.1		764	2.0	0.3-3.8		1262	18.7	14.9-22.6
45-54	454	52.3	46.5-58.2		566	2.4	0.8-4.1		1020	23.8	19.8-27.7
55-64	325	43.7	31.3-56.2		336	2.9	0.7-5.2		661	24.1	17.0-31.1
25-64	1649	43.2	36.9-49.6		2348	2.0	1.0-3.0		3997	19.0	15.5-22.6

Description: Smoking status of all respondents.

### **Smoking Status**

Instrument questions:

Do you currently smoke any tobacco products, such as cigarettes, cigars, or pipes?  
Do you currently smoke tobacco products daily?

Smoking status							
Men							
Age Group (years)	n	Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non- daily	95% CI		
25-34	372	30.7	22.2-39.3	0.5	0.0-1.0	68.8	60.2-77.3
35-44	498	43.9	35.5-52.4	0.7	0.0-1.5	55.4	46.9-63.9
45-54	454	51.6	45.8-57.4	0.7	0.0-1.9	47.7	41.8-53.5
55-64	325	43.3	30.8-55.7	0.5	0.0-1.1	56.3	43.8-68.7
<b>25-64</b>	<b>1649</b>	<b>42.6</b>	<b>36.3-49.0</b>	<b>0.6</b>	<b>0.2-1.0</b>	<b>56.8</b>	<b>50.4-63.1</b>

Smoking status							
Women							
Age Group (years)	n	Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non- daily	95% CI		
25-34	682	1.1	0.1-2.0	0.0	0.0-0.0	98.9	98.0-99.9
35-44	764	2.0	0.3-3.8	0.0	0.0-0.0	98.0	96.2-99.7
45-54	566	2.4	0.8-4.1	0.0	0.0-0.0	97.6	95.9-99.2
55-64	336	2.9	0.7-5.2	0.0	0.0-0.0	97.1	94.8-99.3
<b>25-64</b>	<b>2348</b>	<b>2.0</b>	<b>1.0-3.0</b>	<b>0.0</b>	<b>0.0-0.0</b>	<b>98.0</b>	<b>97.0-99.0</b>

Smoking status
----------------

Both Sexes							
Age Group (years)	n	Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non- daily	95% CI		
25-34	1054	11.7	8.0-15.5	0.2	0.0-0.4	88.1	84.3-91.9
35-44	1262	18.5	14.7-22.3	0.3	0.0-0.6	81.3	77.4-85.1
45-54	1020	23.4	19.5-27.4	0.3	0.0-0.8	76.2	72.3-80.2
55-64	661	23.8	16.8-30.9	0.3	0.0-0.6	75.9	68.9-83.0
<b>25-64</b>	<b>3997</b>	<b>18.8</b>	<b>15.2-22.3</b>	<b>0.3</b>	<b>0.1-0.4</b>	<b>81.0</b>	<b>77.4-84.5</b>

**Frequency of smoking**

Description: Percentage of current daily smokers among smokers.

Instrument question:  
Do you currently smoke any tobacco products, such as cigarettes, cigars, or pipes?  
Do you currently smoke tobacco products daily?

Current daily smokers among smokers											
Age Group  (years)		Men			Women				Both Sexes		
		n	% Daily smokers		95% CI	n	% Daily smokers		95% CI	n	% Daily smokers
25-34		134	98.4	96.7-100.0					141	98.5	96.9-100.0
35-44		217	98.5	96.7-100.0					229	98.6	96.9-100.0
45-54		207	98.6	96.5-100.0					222	98.7	96.7-100.0
55-64		136	98.9	97.4-100.0					147	98.9	97.6-100.0
25-64		694	98.6	97.6-99.5					739	98.7	97.8-99.6

**Manufactured cigarette**

Description: Percentage of smokers who use manufactured cigarettes among daily smokers.

Instrument question:

**smokers**

On average, how many of the following do you smoke each day?

Manufactured cigarette smokers among daily smokers											
Age Group  (years)	Men				Women				Both Sexes		
	n	%	95% CI		n	%	95% CI		n	%	95% CI
		Manu- factured cigarette smoker				Manu- factured cigarette smoker				Manu- factured cigarette smoker	
25-34	130	90.2	80.5-99.8					137	89.0	79.9-98.1	
35-44	213	90.4	86.6-94.3					225	90.0	86.1-93.9	
45-54	204	81.7	72.4-90.9					219	81.2	71.7-90.7	
55-64	134	78.6	67.8-89.4					145	78.9	68.3-89.5	
25-64	681	85.0	80.5-89.6					726	84.6	80.1-89.2	

**Amount  
of  
tobacco  
used**

Description: Mean amount of tobacco used by daily smokers per day, by type.

Instrument question:

On average, how many of the following do you smoke each day?

*among  
smokers  
by type*

Mean amount of tobacco used by daily smokers by type									
Men									
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
25-34	124	9.3	8.0-10.6	78	1.5	0.2-2.7	76	0.4	0.0-0.9
35-44	201	11.6	10.2-13.0	129	1.3	0.3-2.2	127	0.1	0.0-0.1
45-54	195	10.2	8.6-11.8	119	3.2	1.4-5.0	114	0.1	0.0-0.3
55-64	121	12.9	10.0-15.9	73	4.9	1.2-8.6	67	1.1	0.0-2.5
<b>25-64</b>	<b>641</b>	<b>11.0</b>	<b>10.0-11.9</b>	<b>399</b>	<b>2.6</b>	<b>1.6-3.6</b>	<b>384</b>	<b>0.3</b>	<b>0.0-0.6</b>

Mean amount of tobacco used by daily smokers by type									
Both Sexes									
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
25-34	129	9.0	7.7-10.4	82	1.5	0.3-2.7	80	0.4	0.0-0.8
35-44	212	11.1	9.7-12.6	135	1.3	0.3-2.2	133	0.1	0.0-0.1
45-54	210	9.7	8.1-11.3	131	3.1	1.5-4.8	126	0.1	0.0-0.2
55-64	131	12.6	9.8-15.4	78	4.8	1.2-8.4	72	1.3	0.0-2.7
<b>25-64</b>	<b>682</b>	<b>10.6</b>	<b>9.6-11.5</b>	<b>426</b>	<b>2.6</b>	<b>1.6-3.5</b>	<b>411</b>	<b>0.3</b>	<b>0.0-0.6</b>

**Initiation  
of  
smoking**

Description: Mean age of initiation and mean duration of smoking, in years, among daily smokers (no total age group for mean duration of smoking as age influences these values).

Instrument questions:



How old were you when you first started smoking daily?  
How long ago did you stop smoking daily?

Mean age started smoking										
Age Group  (years)		Men			Women			Both Sexes		
		n	Mean age		95% CI	n		Mean age	95% CI	n
25-34		129	18.9	18.0-19.8				135	18.8	18.0-19.7
35-44		207	18.7	17.9-19.6				218	19.1	18.3-20.0
45-54		198	19.9	18.9-20.9				212	19.9	18.8-20.9
55-64		131	21.3	19.4-23.1				139	21.1	19.3-23.0
25-64		665	19.7	19.0-20.3				704	19.7	19.1-20.4

Mean duration of smoking										
Age Group  (years)		Men			Women			Both Sexes		
		n	Mean duration		95% CI	n		Mean duration	95% CI	n
25-34		129	11.3	10.2-12.4				135	11.5	10.5-12.6
35-44		207	20.7	19.5-21.9				218	20.3	19.2-21.5
45-54		198	29.2	28.3-30.1				212	29.2	28.3-30.1
55-64		131	37.9	35.6-40.3				139	38.1	35.8-40.3
25-64		665	25.4	24.0-26.8				704	25.4	24.0-26.7

**Percentage  
of ex daily  
smokers in  
the  
population**

Description: Percentage of ex-daily smokers among all respondents and the mean duration, in years, since ex-daily smokers quit smoking daily.

Instrument question:

In the past did you ever smoke daily?

How old were you when you stopped smoking daily?

Ex-daily smokers among all respondents											
Age Group (years)	Men				Women				Both Sexes		
	n	% ex daily smokers	95% CI		n	% ex daily smokers	95% CI		n	% ex daily smokers	95% CI
25-34	209	15.9	0.0-41.7		237	0.0	0.0-0.0		446	6.8	0.0-16.6
35-44	302	2.4	0.7-4.1		274	0.0	0.0-0.0		576	1.2	0.3-2.1
45-54	283	2.6	0.4-4.8		201	0.0	0.0-0.0		484	1.5	0.2-2.8
55-64	176	4.0	1.0-6.9		129	0.0	0.0-0.0		305	2.3	0.6-3.9
25-64	970	5.9	0.0-12.5		841	0.0	0.0-0.0		1811	3.0	0.0-6.1

Mean years since cessation											
Age Group (years)	Men				Women				Both Sexes		
	n	Mean years	95% CI		n	Mean years	95% CI		n	Mean years	95% CI
25-34								3	10.4	--	
35-44								10	21.4	--	
45-54								8	33.3	--	
55-64								10	42.0	--	
25-64								31	18.5	--	

***Current  
Users of  
smokeless  
tobacco***

Description: Percentage of current users of smokeless tobacco among all respondents.

Instrument question:

Do you currently use any smokeless tobacco such as snuff, chewing tobacco, betel?

Current users of smokeless tobacco											
Age Group  (years)	Men				Women				Both Sexes		
	n	% Current users	95% CI		n	% Current users	95% CI		n	% Current users	95% CI
25-34	199	5.8	1.4-10.3		225	0.9	0.0-2.8		424	3.0	0.6-5.4
35-44	285	16.0	10.5-21.5		266	0.0	0.0-0.0		551	7.9	4.7-11.1
45-54	261	19.6	10.3-29.0		197	1.7	0.0-3.9		458	11.8	5.5-18.0
55-64	155	15.5	5.3-25.7		124	2.9	0.0-7.0		279	9.9	3.7-16.1
25-64	900	14.6	10.0-19.1		812	1.1	0.0-2.2		1712	7.9	4.7-11.0

**Smokeless  
tobacco  
use**

Description: Status of using smokeless tobacco among all respondents.

Instrument questions:

Do you currently use any smokeless tobacco such as snuff, chewing tobacco, betel?

Do you currently use smokeless tobacco products daily?

Smokeless tobacco use							
Men							
Age Group (years)	n	Current user				% Does not use smokeless tobacco	95% CI
		% Daily	95% CI	% Non- daily	95% CI		
25-34	199	5.0	1.1-8.8	0.9	0.0-2.1	94.2	89.7-98.6
35-44	285	12.6	8.0-17.2	3.4	0.5-6.2	84.0	78.5-89.5
45-54	261	15.9	6.6-25.1	3.8	0.2-7.4	80.4	71.0-89.7
55-64	155	10.5	2.1-19.0	5.0	0.0-11.8	84.5	74.3-94.7
<b>25-64</b>	<b>900</b>	<b>11.4</b>	<b>7.2-15.6</b>	<b>3.2</b>	<b>1.0-5.3</b>	<b>85.4</b>	<b>80.9-90.0</b>

Smokeless tobacco use							
Women							
Age Group (years)	n	Current user				% Does not use smokeless tobacco	95% CI
		% Daily	95% CI	% Non- daily	95% CI		
25-34	225	0.9	0.0-2.8	0.0	0.0-0.0	99.1	97.2-100.0
35-44	266	0.0	0.0-0.0	0.0	0.0-0.0	100.0	100.0-100.0
45-54	197	1.1	0.0-3.3	0.6	0.0-1.5	98.3	96.1-100.0
55-64	124	1.8	0.0-5.4	1.1	0.0-3.5	97.1	93.0-100.0
<b>25-64</b>	<b>812</b>	<b>0.8</b>	<b>0.0-1.8</b>	<b>0.3</b>	<b>0.0-0.7</b>	<b>98.9</b>	<b>97.8-100.0</b>

Smokeless tobacco use
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Both Sexes							
Age Group (years)	n	Current user				% Does not use smokeless tobacco	95% CI
		% Daily	95% CI	% Non- daily	95% CI		
25-34	424	2.6	0.4-4.8	0.4	0.0-0.9	97.0	94.6-99.4
35-44	551	6.2	3.5-9.0	1.7	0.2-3.1	92.1	88.9-95.3
45-54	458	9.4	3.1-15.7	2.4	0.4-4.3	88.2	82.0-94.5
55-64	279	6.6	1.3-12.0	3.3	0.0-7.1	90.1	83.9-96.3
<b>25-64</b>	<b>1712</b>	<b>6.1</b>	<b>3.3-9.0</b>	<b>1.7</b>	<b>0.6-2.9</b>	<b>92.1</b>	<b>89.0-95.3</b>

**Percentage  
of ex daily  
users of  
smokeless  
tobacco in  
the  
population**

Description: Percentage of ex-daily users of smokeless tobacco among all respondents.

Instrument question:

In the past, did you ever use smokeless tobacco such as snuff, chewing tobacco, betel daily?

Ex-daily smokeless tobacco users											
Age Group (years)	Men				Women				Both Sexes		
	N	% Ex daily users	95% CI		n	% Ex daily users	95% CI		n	% Ex daily users	95% CI
25-34	184	3.4	0.0-8.0		218	0.0	0.0-0.0		402	1.5	0.0-3.5
35-44	265	4.3	1.2-7.4		250	0.6	0.0-1.8		515	2.4	0.6-4.3
45-54	242	3.7	1.1-6.2		190	0.8	0.0-1.8		432	2.4	0.9-3.8
55-64	129	4.7	0.0-11.7		119	1.2	0.0-3.5		248	3.0	0.0-6.8
25-64	820	4.0	1.6-6.3		777	0.5	0.0-1.1		1597	2.2	0.9-3.5

**Current tobacco users**

Description: Percentage of daily and current (daily plus non-daily) tobacco users, includes smoking and smokeless, among all respondents.

Instrument questions:

Do you currently smoke tobacco products daily?

Do you currently use smokeless tobacco products daily?

Current tobacco users											
Age Group (years)	Men				Women				Both Sexes		
	n	% Current users	95% CI		n	% Current users	95% CI		n	% Current users	95% CI
25-34	198	49.7	33.2-66.2		221	2.5	0.0-5.2		419	22.5	10.4-34.7
35-44	284	68.5	56.5-80.4		259	5.5	0.7-10.3		543	37.2	28.7-45.7
45-54	261	73.9	64.4-83.4		193	6.9	2.6-11.1		454	44.6	37.4-51.9
55-64	155	78.4	68.4-88.4		123	7.1	1.0-13.1		278	46.7	33.0-60.4
25-64	898	67.3	58.2-76.5		796	5.1	2.1-8.1		1694	36.5	27.2-45.8

Daily tobacco users											
Age Group (years)	Men				Women				Both Sexes		
	n	% Daily users	95% CI		n	% Daily users	95% CI		n	% Daily users	95% CI
25-34	198	48.9	32.6-65.2		221	2.5	0.0-5.2		419	22.1	10.2-34.1
35-44	284	67.8	55.9-79.7		259	5.5	0.7-10.3		543	36.9	28.4-45.3
45-54	261	72.8	63.3-82.2		193	6.5	2.1-10.8		454	43.8	36.5-51.1
55-64	155	77.3	66.9-87.8		123	7.1	1.0-13.1		278	46.1	32.4-59.8
25-64	898	66.4	57.3-75.5		796	5.0	2.0-7.9		1694	36.0	26.8-45.2

## Alcohol Consumption

### ***Alcohol consumption status***

Description: Alcohol consumption status of all respondents. Abstainers have not consumed alcohol in the last 12 months.

Instrument questions:

Have you consumed alcohol (such as beer, wine, spirits, fermented cider, or (add other local examples) within the past 12 months?

Have you consumed alcohol (such as beer, wine, spirits, fermented cider, or (add other local examples) within the past 30 days?

Alcohol consumption status							
Men							
Age Group (years)	n	% Current drinker (last 30 days)	95% CI	% Drank in last 12 months, not current	95% CI	% Abstainer	95% CI
25-34	357	80.6	73.3-87.9	5.0	2.3-7.6	14.5	9.0-19.9
35-44	467	78.4	72.0-84.7	4.5	1.8-7.2	17.2	11.9-22.5
45-54	412	68.1	61.5-74.6	9.0	4.0-14.0	22.9	17.8-28.1
55-64	303	58.1	47.2-69.0	9.0	2.5-15.5	33.0	23.6-42.3
<b>25-64</b>	<b>1539</b>	<b>72.0</b>	<b>66.9-77.1</b>	<b>6.7</b>	<b>4.6-8.8</b>	<b>21.3</b>	<b>17.1-25.5</b>

Alcohol consumption status							
Women							
Age Group (years)	n	% Current drinker (last 30 days)	95% CI	% Drank in last 12 months, not current	95% CI	% Abstainer	95% CI
25-34	681	39.6	34.1-45.2	6.9	3.3-10.5	53.5	45.8-61.2
35-44	773	45.7	39.0-52.4	6.0	3.1-9.0	48.3	42.6-54.0
45-54	569	29.3	22.8-35.9	4.5	2.3-6.6	66.2	58.7-73.6
55-64	331	14.9	7.3-22.6	3.1	0.2-6.0	82.0	73.8-90.2
<b>25-64</b>	<b>2354</b>	<b>35.6</b>	<b>31.9-39.3</b>	<b>5.5</b>	<b>3.6-7.4</b>	<b>58.9</b>	<b>54.3-63.5</b>

Alcohol consumption status							
Both Sexes							
Age Group (years)	n	% Current drinker (last 30 days)	95% CI	% Drank in last 12 months, not current	95% CI	% Abstainer	95% CI
25-34	1038	54.1	49.2-58.9	6.2	3.6-8.8	39.7	34.2-45.3
35-44	1240	57.9	52.2-63.6	5.4	3.0-7.9	36.7	31.8-41.5
45-54	981	44.6	38.8-50.3	6.3	3.3-9.2	49.2	42.6-55.7
55-64	634	36.8	30.3-43.3	6.1	2.2-9.9	57.1	51.0-63.2
<b>25-64</b>	<b>3893</b>	<b>50.0</b>	<b>46.5-53.4</b>	<b>6.0</b>	<b>4.2-7.7</b>	<b>44.0</b>	<b>40.3-47.8</b>



***Frequency  
of alcohol  
consumption***

Description: Frequency of alcohol consumption in the last year among those respondents who have drank in the last 12 months.

Instrument question:

In the past 12 months, how frequently have you had at least one drink?

Frequency of alcohol consumption in the last 12 months											
Men											
Age Group (years)	n	% Daily	95% CI	% 5-6 days p. week	95% CI	% 1-4 days p. week	95% CI	% 1-3 days p. month	95% CI	% < once a month	95% CI
25-34	313	2.8	1.0-4.6	20.5	3.8-37.3	6.9	3.3-10.4	27.1	18.9-35.2	42.7	31.9-53.5
35-44	398	4.6	2.7-6.5	8.9	4.9-13.0	7.4	4.0-10.7	28.3	21.5-35.1	50.8	41.1-60.4
45-54	343	8.5	4.1-13.0	10.2	6.0-14.5	5.6	2.1-9.1	23.6	17.9-29.3	52.0	44.5-59.5
55-64	186	9.5	4.4-14.6	3.9	0.1-7.8	7.7	1.9-13.5	14.3	7.7-20.9	64.6	51.8-77.3
<b>25-64</b>	<b>1240</b>	<b>6.0</b>	<b>4.3-7.8</b>	<b>11.4</b>	<b>7.1-15.8</b>	<b>6.8</b>	<b>4.3-9.4</b>	<b>24.2</b>	<b>19.1-29.4</b>	<b>51.4</b>	<b>46.2-56.6</b>

**Frequency of alcohol consumption in the last 12 months**

Age Group (years)	Women										
	n	% Daily	95% CI	% 5-6 days p. week	95% CI	% 1-4 days p. week	95% CI	% 1-3 days p. month	95% CI	% < once a month	95% CI
25-34	316	4.5	1.2-7.9	1.3	0.1-2.5	3.9	1.5-6.3	9.7	5.5-13.9	80.6	73.4-87.8
35-44	371	3.2	1.2-5.2	5.0	1.7-8.3	4.3	1.7-7.0	15.9	10.8-21.0	71.6	63.5-79.7
45-54	183	6.9	0.0-14.8	5.6	0.1-11.2	4.2	1.4-7.1	8.0	3.7-12.3	75.3	66.6-83.9
55-64	62	4.9	0.0-10.7	12.4	0.0-34.8	6.2	0.0-15.9	11.9	4.2-19.5	64.7	43.1-86.2
<b>25-64</b>	<b>932</b>	<b>4.5</b>	<b>2.4-6.6</b>	<b>4.3</b>	<b>2.0-6.6</b>	<b>4.3</b>	<b>2.7-5.9</b>	<b>11.9</b>	<b>8.8-15.0</b>	<b>75.0</b>	<b>70.4-79.7</b>

Frequency of alcohol consumption in the last 12 months											
Age Group (years)	Both Sexes										
	n	% Daily	95% CI	% 5-6 days p. week	95% CI	% 1-4 days p. week	95% CI	% 1-3 days p. month	95% CI	% < once a month	95% CI
25-34	629	3.7	1.8-5.6	10.9	2.5-19.3	5.4	3.0-7.7	18.4	13.2-23.5	61.7	56.3-67.1
35-44	769	3.9	2.6-5.2	7.0	4.0-9.9	5.8	3.6-8.1	22.0	17.5-26.6	61.3	53.6-69.0
45-54	526	7.9	4.2-11.6	8.5	4.9-12.2	5.1	2.5-7.7	17.8	14.1-21.4	60.7	54.8-66.6
55-64	248	8.5	4.3-12.8	5.7	0.0-11.5	7.4	1.4-13.4	13.8	8.4-19.2	64.6	54.0-75.2
<b>25-64</b>	<b>2172</b>	<b>5.4</b>	<b>4.0-6.7</b>	<b>8.3</b>	<b>5.8-10.9</b>	<b>5.7</b>	<b>3.9-7.6</b>	<b>18.9</b>	<b>15.6-22.2</b>	<b>61.7</b>	<b>57.9-65.5</b>

**Standard drinks** Description: Number of standard drinks consumed on a drinking day among those respondents who have drank in the last 12 months.

*per  
drinking  
day*

Instrument question:

When you drink alcohol, on average, how many drinks do you have during one day?

Number of standard drinks consumed on a drinking day											
Age Group (years)	Men										
	n	% 1 drink	95% CI	% 2-3 drinks	95% CI	% 4-5 drinks	95% CI	% 6+ drinks	95% CI	Mean # of standard drinks	95% CI
25-34	287	4.0	1.3-6.7	6.1	3.2-9.0	2.7	0.5-4.8	87.2	81.8-92.6	10.7	9.1-12.3
35-44	363	9.4	0.0-19.2	10.9	7.0-14.9	7.3	3.8-10.9	72.3	63.1-81.5	9.0	7.6-10.3
45-54	292	6.6	3.4-9.8	13.3	8.9-17.6	6.4	3.0-9.8	73.7	67.2-80.2	9.6	8.3-10.9
55-64	160	7.3	2.2-12.5	12.2	3.5-20.8	26.4	0.2-52.6	54.1	34.2-73.9	8.3	6.4-10.2
<b>25-64</b>	<b>1102</b>	<b>6.9</b>	<b>4.0-9.7</b>	<b>10.4</b>	<b>7.5-13.3</b>	<b>9.2</b>	<b>4.3-14.0</b>	<b>73.5</b>	<b>67.5-79.5</b>	<b>9.5</b>	<b>8.5-10.4</b>

Number of standard drinks consumed on a drinking day											
Age Group (years)	Women										
	n	% 1 drink	95% CI	% 2-3 drinks	95% CI	% 4-5 drinks	95% CI	% 6+ drinks	95% CI	Mean # of standard drinks	95% CI
25-34	284	8.7	3.5-13.8	11.7	6.8-16.7	6.7	3.3-10.1	72.8	64.8-80.8	9.8	7.5-12.2
35-44	333	5.3	1.7-8.8	12.7	8.1-17.3	8.0	3.6-12.4	73.9	66.9-81.0	8.9	7.4-10.3
45-54	159	15.4	6.5-24.3	12.0	3.9-20.2	6.8	0.4-13.2	65.8	54.7-76.8	8.9	6.5-11.3
55-64	51	5.5	0.0-12.9	3.4	0.0-8.2	9.4	0.5-18.2	81.7	68.1-95.3	10.7	8.4-13.0
<b>25-64</b>	<b>827</b>	<b>8.6</b>	<b>5.2-12.1</b>	<b>11.7</b>	<b>7.9-15.5</b>	<b>7.4</b>	<b>5.0-9.8</b>	<b>72.3</b>	<b>67.0-77.5</b>	<b>9.3</b>	<b>7.9-10.7</b>

Number of standard drinks consumed on a drinking day

Age Group (years)	Both Sexes										
	n	% 1 drink	95% CI	% 2-3 drinks	95% CI	% 4-5 drinks	95% CI	% 6+ drinks	95% CI	Mean # of standard drinks	95% CI
25-34	571	6.2	2.6-9.8	8.8	6.0-11.6	4.6	2.6-6.6	80.4	74.5-86.3	10.3	8.7-11.9
35-44	696	7.4	1.8-13.1	11.8	8.6-15.0	7.7	5.1-10.2	73.1	66.5-79.7	8.9	7.9-9.9
45-54	451	10.0	5.8-14.1	12.8	8.1-17.5	6.6	3.2-10.0	70.7	64.8-76.5	9.3	7.8-10.8
55-64	211	7.0	2.6-11.3	10.5	3.4-17.5	23.1	1.2-45.1	59.4	41.5-77.2	8.8	7.1-10.5
<b>25-64</b>	<b>1929</b>	<b>7.6</b>	<b>5.2-10.0</b>	<b>11.0</b>	<b>8.5-13.4</b>	<b>8.4</b>	<b>5.4-11.5</b>	<b>73.0</b>	<b>68.4-77.5</b>	<b>9.4</b>	<b>8.5-10.3</b>

### ***Heavy drinking***

Description: Frequency and quantity of drinks consumed in the last 7 days by current (last 30 days) drinker, grouped into three categories.

Instrument question:

During each of the past 7 days, how many standard drinks of any alcoholic drink did you have each day?

Frequency and quantity of drinks consumed in the last 7 days							
Age Group (years)	Men						
	n	% Drank on 4+ days	95% CI	% 5+ drinks on any day	95% CI	% 20+ drinks in 7 days	95% CI
25-34	187	7.6	3.2-12.0	64.9	56.0-73.7	35.2	25.5-44.8
35-44	244	7.2	3.5-10.8	56.3	45.8-66.7	18.0	11.8-24.2
45-54	189	20.4	11.5-29.2	61.7	52.4-70.9	25.2	16.1-34.4
55-64	100	18.5	10.0-26.9	52.9	42.7-63.2	22.5	13.9-31.2
<b>25-64</b>	<b>720</b>	<b>12.4</b>	<b>9.3-15.5</b>	<b>59.3</b>	<b>53.1-65.4</b>	<b>24.8</b>	<b>20.2-29.4</b>

### Frequency and quantity of drinks consumed in the last 7 days

Age Group		Women						
		(years)	n	% Drank on 4+ days	95% CI	% 4+ drinks on any day	95% CI	% 15+ drinks in 7 days
25-34		172	4.0	0.0-8.3	66.9	51.4-82.3	32.4	7.9-56.9
35-44		208	4.4	1.3-7.6	67.8	54.5-81.0	31.9	14.1-49.7
45-54		99	17.8	0.1-35.6	54.1	39.1-69.0	15.9	3.9-27.8
55-64		29	33.0	0.0-71.8	70.1	46.0-94.2	34.3	0.0-72.0
25-64		508	8.3	3.1-13.4	65.2	54.2-76.1	29.4	13.6-45.2

Frequency and quantity of drinks consumed in the last 7 days			
Age Group  (years)	Both Sexes		
	n	% Drank on 4+ days	95% CI
25-34	359	5.7	2.6-8.8
35-44	452	5.8	3.4-8.2
45-54	288	19.5	10.8-28.1
55-64	129	21.8	10.5-33.1
25-64	1228	10.5	7.6-13.5

***Hazardous  
and  
harmful  
drinking***

Description: Percentage of current (last 30 days) drinker engaging in hazardous and harmful drinking in the last 7 days.

Harmful drinking is defined as  $\geq 60$ g of pure alcohol on average per day for men and  $\geq 40$  g for women.

Hazardous drinking is defined as 40-59.9g of pure alcohol on average per day for men and 20-39.9g for women.

A standard drink contains approximately 10g of pure alcohol.

Instrument question:

During each of the past 7 days, how many standard drinks of any alcoholic drink did you have each day?

Hazardous and harmful drinking in the last 7 days							
Men							
Age Group (years)	n	% harmful drinking	95% CI	% hazardous drinking	95% CI	% <40g pure alcohol per day	95% CI
25-34	187	13.2	8.6-17.9	19.2	11.1-27.2	67.6	58.4-76.8
35-44	244	7.1	3.6-10.6	6.3	2.9-9.6	86.6	81.7-91.6
45-54	189	15.2	5.5-24.8	6.7	2.3-11.0	78.2	69.0-87.4
55-64	100	8.8	3.8-13.9	6.4	1.9-10.9	84.8	77.2-92.5
<b>25-64</b>	<b>720</b>	<b>11.0</b>	<b>8.1-13.9</b>	<b>9.6</b>	<b>6.7-12.4</b>	<b>79.5</b>	<b>75.6-83.3</b>

**Hazardous and harmful drinking in the last 7 days**

Age Group (years)	Women						
	n	% harmful drinking	95% CI	% hazardous drinking	95% CI	% <20g pure alcohol per day	95% CI
25-34	172	27.7	2.8-52.6	7.2	3.6-10.9	65.0	41.4-88.7
35-44	208	9.7	5.1-14.3	26.9	7.6-46.3	63.4	46.2-80.6
45-54	99	9.0	1.2-16.8	18.6	5.3-32.0	72.3	58.4-86.3
55-64	29	31.0	0.0-69.8	11.3	0.0-25.5	57.7	22.5-92.8
<b>25-64</b>	<b>508</b>	<b>16.8</b>	<b>8.1-25.5</b>	<b>18.0</b>	<b>9.7-26.3</b>	<b>65.2</b>	<b>50.3-80.1</b>

***Largest  
number  
of  
drinks***

Description: Largest number of drinks consumed during a single occasion in the last 12 months among last 12 month drinker.

Instrument question:

In the past 12 months what was the largest number of drinks you had on a single

*in last 12 months* occasion, counting all types of standard drinks together?

Mean maximum number of drinks consumed on one occasion in the last 12 months											
Age Group  (years)	Men				Women				Both Sexes		
	n	Mean maximum number	95% CI		Mean			n	Mean maximum number	95% CI	
				n	maximum number	95% CI					
25-34	195	16.7	13.6-19.7		207	14.2	11.2-17.3		402	15.5	<b>13.4-17.6</b>
35-44	227	15.1	13.2-17.0		241	13.4	10.7-16.2		468	14.2	<b>12.7-15.7</b>
45-54	175	17.4	13.3-21.6		117	11.9	9.6-14.2		292	15.1	<b>12.4-17.8</b>
55-64	102	9.9	7.2-12.7		37	12.8	8.2-17.3		139	10.5	<b>7.6-13.3</b>
<b>25-64</b>	<b>699</b>	<b>15.1</b>	<b>13.2-17.1</b>		<b>602</b>	<b>13.3</b>	<b>11.5-15.2</b>		<b>1301</b>	<b>14.3</b>	<b>12.9-15.8</b>



***Five or more drinks on a single occasion***

Description: Mean number of days in the past 12 months on which consumer drank five or more drinks during a single occasion.

Instrument question:

In the past 12 months, on how many days did you have five or more standard drinks in a single day?

Five or more drinks on a single occasion			
Age Group (years)	Men		
	n	Mean number of days	95% CI
25-34	306	53.6	41.2-65.9
35-44	387	64.8	56.5-73.2
45-54	320	64.3	56.4-72.2
55-64	176	58.5	44.8-72.2
<b>25-64</b>	<b>1189</b>	<b>60.5</b>	<b>54.7-66.4</b>

***Four or more drinks on a***

Description: Mean number of days in the past 12 months on which consumer drank four or more drinks during a single occasion.

Instrument question:

In the past 12 months, on how many days did you have four or more standard

*single  
occasion*

drinks in a single day?

Four or more drinks on a single occasion			
Age Group (years)	Women		
	n	Mean number of days	95% CI
25-34	296	49.8	<b>40.5-59.2</b>
35-44	350	52.8	<b>43.7-62.0</b>
45-54	160	53.5	<b>45.4-61.5</b>
55-64	54	59.0	<b>43.3-74.6</b>
<b>25-64</b>	<b>860</b>	<b>52.2</b>	<b>45.4-59.1</b>

## Fruit and Vegetable Consumption

### *Mean number of days of fruit and vegetable consumption*

Description: mean number of days fruit and vegetables consumed.

Instrument questions:

In a typical week, on how many days do you eat fruit?

In a typical week, on how many days do you eat vegetables?

Mean number of days fruit consumed in a typical week											
Age Group (years)	Men				Women				Both Sexes		
	n	Mean number of days	95% CI		n	Mean number of days	95% CI		n	Mean number of days	95% CI
25-34	287	5.1	4.5-5.6		587	5.3	5.0-5.7		874	5.2	4.9-5.6
35-44	371	4.7	4.4-5.1		643	5.2	4.9-5.5		1014	5.0	4.8-5.2
45-54	294	4.8	4.3-5.2		444	5.7	5.3-6.0		738	5.3	5.1-5.6
55-64	215	5.0	4.7-5.4		253	4.9	4.4-5.5		468	5.0	4.6-5.3
25-64	1167	4.9	4.6-5.1		1927	5.3	5.1-5.5		3094	5.2	5.0-5.3

Mean number of days vegetables consumed in a typical week											
Age Group (years)	Men				Women				Both Sexes		
	n	Mean number of days	95% CI		n	Mean number of days	95% CI		n	Mean number of days	95% CI
25-34	284	6.3	6.1-6.6		580	6.4	6.2-6.7		864	6.4	6.2-6.6
35-44	366	6.2	6.0-6.4		638	6.5	6.3-6.6		1004	6.4	6.2-6.5
45-54	282	6.6	6.4-6.7		430	6.6	6.5-6.8		712	6.6	6.5-6.7
55-64	210	6.5	6.3-6.7		252	6.6	6.4-6.8		462	6.6	6.4-6.7
25-64	1142	6.4	6.2-6.5		1900	6.5	6.4-6.7		3042	6.5	6.3-6.6

**Mean  
number of  
servings of  
fruit and  
vegetable  
consumption**

Description: mean number of fruit, vegetable, and combined fruit and vegetable servings on average per day.

Instrument questions:

In a typical week, on how many days do you eat fruit?

How many servings of fruit do you eat on one of those days?

In a typical week, on how many days do you eat vegetables?

How many servings of vegetables do you eat on one of those days?

Mean number of servings of fruit on average per day											
Age Group (years)	Men				Women				Both Sexes		
	n	Mean number of servings	95% CI		n	number of servings	95% CI		n	Mean number of servings	95% CI
25-34	287	3.7	2.9-4.4		587	3.8	3.3-4.3		874	3.8	3.3-4.2
35-44	371	3.4	2.9-3.8		643	3.3	2.8-3.8		1014	3.3	2.9-3.7
45-54	294	3.5	2.9-4.1		444	3.9	3.3-4.4		738	3.7	3.3-4.1
55-64	215	3.1	2.7-3.5		253	3.0	2.4-3.7		468	3.1	2.7-3.4
25-64	1167	3.4	3.1-3.8		1927	3.6	3.3-3.8		3094	3.5	3.3-3.7

**Mean number of servings of vegetables on average per day**

Age Group (years)	Men			Women			Both Sexes		
	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI
25-34	284	5.1	4.3-5.9	580	4.7	4.2-5.3	864	4.9	4.3-5.4
35-44	366	4.7	3.9-5.5	638	4.2	3.8-4.7	1004	4.4	4.0-4.8
45-54	282	4.6	3.9-5.2	430	4.9	3.9-6.0	712	4.8	4.0-5.6
55-64	210	4.6	3.6-5.6	252	4.8	3.9-5.8	462	4.7	4.0-5.5
<b>25-64</b>	<b>1142</b>	<b>4.7</b>	<b>4.2-5.3</b>	<b>1900</b>	<b>4.6</b>	<b>4.2-5.0</b>	<b>3042</b>	<b>4.7</b>	<b>4.3-5.1</b>

Mean number of servings of fruit and/or vegetables on average per day									
Age Group (years)	Men			Women			Both Sexes		
	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI	n	Mean number of servings	95% CI
25-34	294	8.5	7.1-10.0	592	8.4	7.5-9.3	886	8.4	7.5-9.3
35-44	380	7.8	6.8-8.7	651	7.4	6.7-8.0	1031	7.5	7.0-8.0
45-54	296	7.8	6.8-8.9	447	8.4	6.9-9.9	743	8.2	7.2-9.2
55-64	218	7.3	6.2-8.5	254	7.8	6.5-9.1	472	7.6	6.6-8.5
<b>25-64</b>	<b>1188</b>	<b>7.9</b>	<b>7.1-8.6</b>	<b>1944</b>	<b>8.0</b>	<b>7.4-8.6</b>	<b>3132</b>	<b>8.0</b>	<b>7.4-8.5</b>

***Fruit and vegetable consumption per day***

Description: Frequency of fruit and/or vegetable consumption.

Instrument questions:

In a typical week, on how many days do you eat fruit?

How many servings of fruit do you eat on one of those days?

In a typical week, on how many days do you eat vegetables?

How many servings of vegetables do you eat on one of those days?

Number of servings of fruit and/or vegetables on average per day									
Age Group (years)	Men								
	n	% no fruit and/or vegetables	95% CI	% 1-2 servings	95% CI	% 3-4 servings	95% CI	% ≥5 servings	95% CI
25-34	294	1.1	0.0-2.3	18.4	12.2-24.5	17.4	11.3-23.6	63.1	53.1-73.1
35-44	380	3.1	1.2-5.0	18.7	13.5-23.8	20.7	14.2-27.2	57.6	49.7-65.5
45-54	296	1.8	0.0-4.2	21.8	15.3-28.3	21.3	14.7-27.9	55.1	49.2-60.9
55-64	218	1.0	0.0-2.6	23.3	13.3-33.3	12.1	6.8-17.3	63.6	51.1-76.2
<b>25-64</b>	<b>1188</b>	<b>1.8</b>	<b>0.9-2.8</b>	<b>20.3</b>	<b>16.5-24.1</b>	<b>18.1</b>	<b>14.2-21.9</b>	<b>59.8</b>	<b>53.4-66.2</b>

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

Age Group (years)	Women								
	n	% no fruit and/or vegetables	95% CI	% 1-2 servings	95% CI	% 3-4 servings	95% CI	% ≥5 servings	95% CI
25-34	592	1.2	0.0-2.7	11.5	6.3-16.7	19.6	12.6-26.7	67.7	56.4-79.0
35-44	651	0.4	0.0-0.9	17.3	12.5-22.1	16.9	13.2-20.5	65.4	59.3-71.4
45-54	447	0.7	0.0-1.4	10.8	7.1-14.5	25.6	19.0-32.2	62.9	54.7-71.1
55-64	254	1.6	0.0-3.6	11.8	5.9-17.7	21.1	10.6-31.5	65.6	54.3-76.9
<b>25-64</b>	<b>1944</b>	<b>0.9</b>	<b>0.3-1.5</b>	<b>13.2</b>	<b>9.7-16.7</b>	<b>20.3</b>	<b>16.0-24.7</b>	<b>65.5</b>	<b>58.3-72.8</b>

Number of servings of fruit and/or vegetables on average per day									
Age Group (years)	Both Sexes								
	n	% no fruit and/or vegetables	95% CI	% 1-2 servings	95% CI	% 3-4 servings	95% CI	% ≥5 servings	95% CI
25-34	886	1.2	0.0-2.3	13.8	8.7-18.9	18.9	12.9-24.9	66.2	55.9-76.4
35-44	1031	1.4	0.6-2.1	17.8	13.9-21.7	18.2	14.8-21.6	62.6	57.3-68.0
45-54	743	1.1	0.1-2.1	14.8	11.2-18.4	24.0	19.2-28.9	60.1	54.3-65.9
55-64	472	1.3	0.0-2.9	17.6	10.6-24.5	16.5	10.0-23.0	64.6	54.4-74.8
<b>25-64</b>	<b>3132</b>	<b>1.2</b>	<b>0.6-1.8</b>	<b>15.9</b>	<b>12.5-19.2</b>	<b>19.5</b>	<b>15.8-23.2</b>	<b>63.4</b>	<b>56.7-70.1</b>



***Fruit and vegetable consumption per day***

Description: Percentage of those eating less than five servings of fruit and/or vegetables on average per day.

Instrument questions:

In a typical week, on how many days do you eat fruit?

How many servings of fruit do you eat on one of those days?

In a typical week, on how many days do you eat vegetables?

How many servings of vegetables do you eat on one of those days?

Less than five servings of fruit and/or vegetables on average per day									
Age Group (years)	Men			Women			Both Sexes		
	n	% < five servings per day	95% CI	n	% < five servings per day	95% CI	n	% < five servings per day	95% CI
25-34	294	36.9	26.9-46.9	592	32.3	21.0-43.6	886	33.8	23.6-44.1
35-44	380	42.4	34.5-50.3	651	34.6	28.6-40.7	1031	37.4	32.0-42.7
45-54	296	44.9	39.1-50.8	447	37.1	28.9-45.3	743	39.9	34.1-45.7
55-64	218	36.4	23.8-48.9	254	34.4	23.1-45.7	472	35.4	25.2-45.6
<b>25-64</b>	<b>1188</b>	<b>40.2</b>	<b>33.8-46.6</b>	<b>1944</b>	<b>34.5</b>	<b>27.2-41.7</b>	<b>3132</b>	<b>36.6</b>	<b>29.9-43.3</b>

***Type of oil used most***

Description: type of oil or fat most often used for meal preparation in households (presented only for both sexes because results are for the household not individuals).

*frequently* Instrument question:  
What type of oil or fat is most often used for meal preparation in your household?

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	% Marga- rine	95% CI	% None used	95% CI	% Other	95% CI
4126	93.0	90.8- 95.3	5.7	3.4- 8.0	0.1	0.0- 0.1	0.0	0.0- 0.0	1.0	0.4- 1.5	0.3	0.4- 1.5

## Physical Activity

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### **Introduction**

Analysis physical activity data can be very complicated and the result confusing. The following guidelines will help clarify the results of the physical activity data and will also provide valuable information on the classifications. Make sure you use some of these guidelines when you report physical activity data.

MET values are applied to vigorous and moderate intensity variables in the work, transport and recreation domains. These have been calculated using an average of the typical types of activity undertaken. Different types of activities have been grouped together and given a MET value based on the intensity of the activity. Applying MET values to types of activities allows us to calculate total physical activity. For more information regarding MET values go the STEPS website at [www.who.int/chp/steps](http://www.who.int/chp/steps).

The calculations below use multiple questions in the physical activity section. To simplify this a bit the questions have been clustered into four groups (as they appear in the Instrument). In the Instrument questions section of the table, only the group label appears. The specific questions for each group are presented below.

#### Activity at work:

Does your work involve vigorous-intensity activity that causes large increases in breathing or heart rate like [examples] for at least 10 minutes continuously?

In a typical week, on how many days do you do vigorous-intensity activities as part of your work?

How much time do you spend doing vigorous-intensity activities at work on a typical day?

Does your work involve moderate-intensity activity, that causes small increases in breathing or heart rate such as brisk walking for at least 10 minutes continuously?

In a typical week, on how many days do you do moderate-intensity activities as part of your work?

How much time do you spend doing moderate-intensity activities at work on a typical day?

#### Travel to and from places:

Do you walk or use a bicycle for at least 10 minutes continuously to get to and from places?

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?

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*Continued on next page*

## , Continued

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### **Introduction** (continued)

How much time do you spend walking or bicycling for travel on a typical day?

#### Recreational activities:

Do you do any involve vigorous-intensity sports, fitness or recreational activities that cause large increases in breathing or heart rate like [examples] for at least 10 minutes continuously?

In a typical week, on how many days do you do vigorous-intensity sports, fitness or recreational activities?

How much time do you spend doing vigorous-intensity sports, fitness or recreational activities on a typical day?

Do you do any involve moderate-intensity sports, fitness or recreational activities that cause large increases in breathing or heart rate like [examples] for at least 10 minutes continuously?

In a typical week, on how many days do you do moderate--intensity sports, fitness or recreational activities?

How much time do you spend doing moderate--intensity sports, fitness or recreational activities on a typical day?

#### Sedentary behaviour :

How much time do you usually spend sitting or reclining on a typical day?

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**Levels  
of total  
physical  
activity**

Description: Percentage of respondents classified into three categories of total physical activity.

Instrument questions:  
activity at work  
travel to and from places  
recreational activities

Level of total physical activity							
Age Group		Men					
(years)	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
25-34	308	9.8	5.4-14.2	7.7	4.6-10.8	82.5	77.0-88.0
35-44	420	8.2	5.4-11.0	12.2	8.1-16.4	79.6	74.8-84.3
45-54	371	9.4	5.6-13.1	15.9	11.5-20.3	74.7	69.1-80.3
55-64	274	15.2	6.3-24.0	38.4	20.8-56.1	46.4	32.7-60.2
<b>25-64</b>	<b>1373</b>	<b>10.4</b>	<b>7.7-13.1</b>	<b>17.5</b>	<b>13.2-21.9</b>	<b>72.1</b>	<b>68.2-76.0</b>

Level of total physical activity							
Age Group		Women					
(years)	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
25-34	605	16.4	10.2-22.6	21.4	16.4-26.4	62.2	55.8-68.7
35-44	705	15.2	11.3-19.0	20.8	16.9-24.6	64.1	58.4-69.7
45-54	521	13.4	9.1-17.8	30.1	23.8-36.4	56.4	49.4-63.5
55-64	308	26.5	17.9-35.2	28.2	18.3-38.1	45.3	32.0-58.5
<b>25-64</b>	<b>2139</b>	<b>16.7</b>	<b>13.0-20.3</b>	<b>24.3</b>	<b>21.2-27.4</b>	<b>59.1</b>	<b>54.0-64.2</b>

Level of total physical activity							
Age Group (years)	Both Sexes						
	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
25-34	913	14.1	9.4-18.8	16.7	12.9-20.6	69.1	63.9-74.4
35-44	1125	12.7	10.0-15.4	17.7	15.1-20.3	69.6	65.3-73.8
45-54	892	11.8	8.6-15.0	24.4	20.5-28.3	63.8	59.2-68.4
55-64	582	20.9	13.2-28.6	33.2	25.9-40.6	45.8	40.0-51.7
<b>25-64</b>	<b>3512</b>	<b>14.2</b>	<b>11.3-17.1</b>	<b>21.7</b>	<b>19.5-23.9</b>	<b>64.1</b>	<b>61.1-67.1</b>

Description: Mean minutes of total physical activity on average per day.

**Total**

***physical  
activity-  
mean*** Instrument questions  
activity at work  
travel to and from places  
recreational activities

Mean minutes of total physical activity on average per day											
Age Group  (years)	Men				Women				Both Sexes		
	n	Mean minutes	95% CI		n	Mean minutes	95% CI		n	Mean minutes	95% CI
25-34	308	392.8	328.5-457.2		605	263.4	204.5-322.3		913	307.5	255.7-359.4
35-44	420	354.6	312.6-396.5		705	243.8	202.0-285.5		1125	283.1	247.4-318.9
45-54	371	305.4	269.3-341.6		521	205.4	164.3-246.6		892	245.7	217.1-274.3
55-64	274	190.0	134.4-245.5		308	162.1	68.9-255.4		582	175.8	133.4-218.2
25-64	1373	316.9	291.4-342.4		2139	229.3	179.4-279.2		3512	263.1	229.1-297.1

***Total  
physical  
activity-  
median*** Description: Median minutes of total physical activity on average per day.  
Instrument questions  
activity at work  
travel to and from places  
recreational activities

#### Median minutes of total physical activity on average per day

Age Group (years)	Men				Women				Both Sexes		
	n	Median minutes	Inter-quartile range (P25-P75)		n	Median minutes	Inter-quartile range (P25-P75)		n	Median minutes	Inter-quartile range (P25-P75)
25-34	308	411.4	150.0-578.6		605	188.6	60.0-450.0		913	268.6	60.0-490.7
35-44	420	342.9	115.7-488.6		705	150.0	50.0-420.0		1125	194.3	60.0-471.4
45-54	371	270.0	81.4-480.0		521	111.4	50.0-365.7		892	167.1	60.0-441.4
55-64	274	80.0	45.0-80.0		308	70.0	20.0-240.0		582	71.4	30.0-231.4
<b>25-64</b>	<b>1373</b>	<b>268.6</b>	<b>70.0-480.0</b>		<b>2139</b>	<b>132.9</b>	<b>42.9-377.1</b>		<b>3512</b>	<b>180.0</b>	<b>60.0-450.0</b>

**Domain-  
specific  
physical  
activity-  
mean**

Description: Mean minutes spent in work-, transport- and recreation-related physical activity on average per day.

Instrument questions:  
activity at work  
travel to and from places  
recreational activities

Mean minutes of work-related physical activity on average per day											
Age Group  (years)	Men				Women				Both Sexes		
	n	Mean minutes	95% CI		n	Mean minutes	95% CI		n	Mean minutes	95% CI
25-34	308	331.6	263.4-399.8		605	211.4	166.2-256.5		913	252.4	208.7-296.1
35-44	420	302.6	266.2-339.0		705	194.2	157.5-230.9		1125	232.7	202.0-263.5
45-54	371	252.7	219.2-286.3		521	160.4	116.9-204.0		892	197.6	168.5-226.7
55-64	274	152.1	105.1-199.2		308	96.9	70.9-122.8		582	124.1	98.9-149.2
25-64	1373	265.3	239.6-291.1		2139	178.0	141.4-214.6		3512	211.7	184.1-239.2

**Mean minutes of transport-related physical activity on average per day**



Age Group (years)	Men			n	Women			n	Both Sexes		
	n	Mean minutes	95% CI		n	Mean minutes	95% CI		n	Mean minutes	95% CI
25-34	308	37.1	14.8-59.3		605	42.7	17.3-68.1		913	40.8	23.9-57.6
35-44	420	32.6	23.8-41.4		705	34.0	26.0-42.0		1125	33.5	26.5-40.5
45-54	371	35.4	28.1-42.7		521	32.3	26.1-38.4		892	33.5	28.3-38.7
55-64	274	26.4	14.7-38.1		308	57.9	0.0-136.3		582	42.4	6.1-78.7
<b>25-64</b>	<b>1373</b>	<b>33.2</b>	<b>25.3-41.0</b>		<b>2139</b>	<b>39.5</b>	<b>22.6-56.4</b>		<b>3512</b>	<b>37.0</b>	<b>27.4-46.7</b>

Mean minutes of recreation-related physical activity on average per day											
Age Group (years)	Men			n	Women			n	Both Sexes		
	n	Mean minutes	95% CI		n	Mean minutes	95% CI		n	Mean minutes	95% CI
25-34	308	24.1	17.1-31.2		605	9.3	5.5-13.1		913	14.4	9.7-19.0
35-44	420	19.4	12.3-26.5		705	15.6	9.5-21.6		1125	16.9	12.3-21.5
45-54	371	17.3	9.4-25.3		521	12.7	9.1-16.4		892	14.6	10.7-18.4
55-64	274	11.4	7.5-15.3		308	7.4	4.7-10.1		582	9.4	6.7-12.0
<b>25-64</b>	<b>1373</b>	<b>18.4</b>	<b>14.3-22.5</b>		<b>2139</b>	<b>11.8</b>	<b>9.2-14.5</b>		<b>3512</b>	<b>14.4</b>	<b>11.7-17.0</b>

**Domain-** Description: Median minutes spent on average per day in work-, transport- and recreation-related physical activity.

***specific  
physical  
activity -  
median***      Instrument questions:  
activity at work  
travel to and from places  
recreational activities

Median minutes of work-related physical activity on average per day									
Age Group (years)	Men				Women			Both Sexes	
	n	Median minutes	Inter-quartile range (P25- P75)		n	Median minutes	Inter-quartile range (P25- P75)	n	Median minutes
25-34	308	360.0	77.1-510.0		605	128.6	25.7-382.9	913	205.7
35-44	420	300.0	60.0-445.7		705	107.1	20.0-360.0	1125	137.1
45-54	371	205.7	45.0-424.3		521	60.0	20.0-300.0	892	102.9
55-64	274	60.0	20.0-180.0		308	32.1	8.6-180.0	582	51.4
<b>25-64</b>	<b>1373</b>	<b>205.7</b>	<b>42.9-437.1</b>		<b>2139</b>	<b>81.4</b>	<b>20.0-308.6</b>	<b>3512</b>	<b>120.0</b>

#### Median minutes of transport-related physical activity on average per day

Age Group (years)	Men			n	Women			n	Both Sexes		
	n	Median minutes	Inter-quartile range (P25- P75)		n	Median minutes	Inter-quartile range (P25- P75)		n	Median minutes	Inter- quartile range (P25- P75)
25-34	308	15.0	0.0-30.0		605	12.9	0.0-60.0		913	14.3	0.0-45.0
35-44	420	12.9	0.0-30.0		705	10.0	0.0-30.0		1125	10.0	0.0-30.0
45-54	371	17.1	0.0-40.0		521	14.3	0.0-30.0		892	17.1	0.0-30.0
55-64	274	10.0	0.0-30.0		308	4.3	0.0-30.0		582	7.1	0.0-30.0
<b>25-64</b>	<b>1373</b>	<b>14.3</b>	<b>0.0-30.0</b>		<b>2139</b>	<b>10.0</b>	<b>0.0-34.3</b>		<b>3512</b>	<b>10.0</b>	<b>0.0-30.0</b>

Median minutes of recreation-related physical activity on average per day											
Age Group (years)	Men			n	Women			n	Both Sexes		
	n	Median minutes	Inter-quartile range (P25- P75)		n	Median minutes	Inter-quartile range (P25- P75)		n	Median minutes	Inter- quartile range (P25- P75)
25-34	308	0.0	0.0-30.0		605	0.0	0.0-0.0		913	0.0	0.0-8.6
35-44	420	0.0	0.0-25.7		705	0.0	0.0-8.6		1125	0.0	0.0-15.0
45-54	371	0.0	0.0-15.0		521	0.0	0.0-15.0		892	0.0	0.0-15.0
55-64	274	0.0	0.0-8.6		308	0.0	0.0-0.0		582	0.0	0.0-8.6
<b>25-64</b>	<b>1373</b>	<b>0.0</b>	<b>0.0-17.1</b>		<b>2139</b>	<b>0.0</b>	<b>0.0-5.7</b>		<b>3512</b>	<b>0.0</b>	<b>0.0-11.4</b>

**No  
physical  
activity**

Description: Percentage of respondents classified as doing no work-, transport- or recreational-related physical activity.

Instrument questions:

Part 6: Templates and Forms  
6-3D-155  
Section 3D: Data Book Template  
Surveillance

WHO STEPS

*by* activity at work  
*domain* travel to and from places  
recreational activities

No work-related physical activity											
Age Group (years)	Men				Women				Both Sexes		
	n	% no activity at work	95% CI		n	% no activity at work	95% CI		n	% no activity at work	95% CI
25-34	308	7.6	3.9-11.4		605	19.6	14.4-24.7		913	15.5	11.8-19.2
35-44	420	6.9	4.0-9.9		705	16.3	11.9-20.7		1125	13.0	9.7-16.3
45-54	371	10.2	6.4-14.0		521	14.6	9.0-20.2		892	12.8	9.0-16.6
55-64	274	11.8	5.8-17.8		308	22.6	14.5-30.7		582	17.3	11.4-23.2
25-64	1373	9.0	6.4-11.5		2139	17.7	14.4-21.1		3512	14.4	11.7-17.1

No transport-related physical activity											
Age Group (years)	Men				Women				Both Sexes		
	n	% no activity for transport	95% CI		n	% no activity for transport	95% CI		n	% no activity for transport	95% CI
25-34	308	34.2	25.7-42.7		605	34.2	23.3-45.1		913	34.2	25.0-43.4
35-44	420	39.6	33.2-46.1		705	36.9	30.1-43.7		1125	37.9	32.5-43.3
45-54	371	30.2	23.5-36.9		521	35.7	29.4-42.0		892	33.5	28.7-38.3
55-64	274	41.0	23.4-58.7		308	47.3	35.9-58.6		582	44.2	36.7-51.7
25-64	1373	36.1	31.8-40.4		2139	37.2	30.1-44.2		3512	36.8	32.3-41.2

No recreation-related physical activity
-----------------------------------------

Age Group (years)	Men			Women			Both Sexes		
	n	% no activity at recreation	95% CI	n	% no activity at recreation	95% CI	n	% no activity at recreation	95% CI
25-34	308	52.1	38.2-65.9	605	80.4	73.4-87.4	913	70.7	61.4-80.1
35-44	420	58.4	50.0-66.7	705	69.5	64.1-74.8	1125	65.5	61.0-70.0
45-54	371	62.8	56.0-69.6	521	66.5	59.0-74.0	892	65.0	59.6-70.4
55-64	274	70.7	62.2-79.1	308	76.5	68.2-84.8	582	73.6	66.8-80.5
<b>25-64</b>	<b>1373</b>	<b>60.5</b>	<b>53.9-67.1</b>	<b>2139</b>	<b>73.0</b>	<b>68.9-77.2</b>	<b>3512</b>	<b>68.2</b>	<b>63.5-72.9</b>

***Composition  
of total  
physical  
activity***

Description: Percentage of work, transport and recreational activity contributing to total activity.

Instrument questions:  
activity at work  
travel to and from places  
recreational activities

Composition of total physical activity							
Age Group (years)	Men						
	n	% Activity from work	95% CI	% Activity for transport	95% CI	% Activity during leisure time	95% CI
25-34	291	78.4	73.0-83.8	8.9	5.4-12.4	12.7	9.0-16.4
35-44	402	77.1	73.4-80.9	12.4	9.6-15.2	10.5	7.7-13.3
45-54	348	72.9	68.4-77.5	14.8	11.3-18.2	12.3	9.4-15.2
55-64	246	69.0	59.0-79.0	20.6	12.7-28.5	10.4	6.6-14.2
<b>25-64</b>	<b>1287</b>	<b>74.7</b>	<b>71.0-78.4</b>	<b>13.8</b>	<b>11.1-16.5</b>	<b>11.5</b>	<b>9.5-13.5</b>

Composition of total physical activity							
Women							
Age Group (years)	n	% Activity from work	95% CI	% Activity for transport	95% CI	% Activity during leisure time	95% CI
25-34	528	70.0	63.8-76.2	22.0	14.1-30.0	8.0	4.4-11.6
35-44	637	68.8	65.3-72.3	18.8	15.1-22.4	12.4	9.7-15.2
45-54	472	65.0	58.4-71.7	20.3	15.7-24.9	14.7	9.9-19.5
55-64	252	64.3	53.2-75.4	24.3	12.9-35.7	11.4	6.4-16.4
<b>25-64</b>	<b>1889</b>	<b>67.6</b>	<b>64.8-70.5</b>	<b>20.8</b>	<b>17.7-23.9</b>	<b>11.5</b>	<b>9.2-13.8</b>

Composition of total physical activity							
Both Sexes							
Age Group (years)	n	% Activity from work	95% CI	% Activity for transport	95% CI	% Activity during leisure time	95% CI
25-34	819	73.0	69.3-76.6	17.4	12.2-22.6	9.6	6.4-12.9
35-44	1039	71.9	68.8-74.9	16.4	13.6-19.3	11.7	9.4-14.0
45-54	820	68.3	63.9-72.6	18.0	15.0-21.0	13.7	10.6-16.8
55-64	498	66.7	62.6-70.9	22.4	19.1-25.7	10.9	7.2-14.5
<b>25-64</b>	<b>3176</b>	<b>70.5</b>	<b>68.3-72.6</b>	<b>18.0</b>	<b>16.2-19.9</b>	<b>11.5</b>	<b>9.5-13.5</b>

**No  
vigorous  
physical  
activity**

Description: Percentage of respondents not engaging in vigorous physical activity.

Instrument questions:  
activity at work  
recreational activities

No vigorous physical activity											
Age Group (years)	Men				Women				Both Sexes		
	n	% no vigorous activity	95% CI		n	% no vigorous activity	95% CI		n	% no vigorous activity	95% CI
25-34	308	17.8	12.1-23.5		605	65.4	59.0-71.9		913	49.2	44.0-54.3
35-44	420	28.3	21.1-35.4		705	59.6	52.5-66.7		1125	48.5	42.7-54.2
45-54	371	32.9	26.8-39.0		521	61.4	50.9-71.9		892	49.9	43.2-56.7
55-64	274	65.5	53.8-77.2		308	77.6	69.6-85.6		582	71.6	63.1-80.2
25-64	1373	34.6	30.4-38.8		2139	64.3	60.7-67.8		3512	52.8	49.7-56.0

**Sedentary**

Description: Minutes spent in sedentary activities on a typical day.

Instrument question:  
sedentary behaviour

Minutes spent in sedentary activities on average per day					
Men					
Age Group (years)	n	Mean minutes	95% CI	Median minutes	Inter-quartile range (P25-P75)
25-34	380	83.3	69.0-97.6	60.0	30.0-120.0
35-44	510	64.2	55.1-73.3	60.0	30.0-60.0
45-54	459	69.8	58.1-81.5	45.0	20.0-80.0
55-64	328	65.1	54.3-75.9	30.0	20.0-60.0
<b>25-64</b>	<b>1677</b>	<b>70.4</b>	<b>64.2-76.6</b>	<b>60.0</b>	<b>30.0-90.0</b>

Minutes spent in sedentary activities on average per day					
Women					
Age Group (years)	n	Mean minutes	95% CI	Median minutes	Inter-quartile range (P25-P75)
25-34	714	83.7	68.9-98.5	60.0	30.0-120.0
35-44	809	72.2	64.1-80.4	60.0	30.0-90.0
45-54	594	70.5	59.9-81.1	60.0	20.0-60.0
55-64	361	91.9	73.1-110.7	60.0	30.0-120.0
<b>25-64</b>	<b>2478</b>	<b>78.0</b>	<b>69.7-86.3</b>	<b>60.0</b>	<b>30.0-120.0</b>

Minutes spent in sedentary activities on average per day
----------------------------------------------------------



<b>Both Sexes</b>					
Age Group (years)	n	Mean minutes	95% CI	Median minutes	Inter-quartile range (P25-P75)
25-34	1094	83.6	72.1-95.0	60.0	30.0-120.0
35-44	1319	69.1	63.2-75.1	60.0	30.0-90.0
45-54	1053	70.2	62.4-78.0	60.0	20.0-80.0
55-64	689	78.3	66.9-89.6	60.0	30.0-120.0
<b>25-64</b>	<b>4155</b>	<b>74.9</b>	<b>69.3-80.6</b>	<b>60.0</b>	<b>30.0-120.0</b>

## Blood Pressure and Diabetes History

### ***Blood pressure diagnosis and treatment***

Description: Raised blood pressure diagnosis and treatment results among all respondents.

Instrument questions:

Have you ever been told by a doctor or other health worker that you have elevated blood pressure or hypertension?

If yes, was in the past 12 months?

Are you currently receiving any of the following treatments/advice for high blood pressure prescribed by a doctor or other health worker:

Drugs (medication) that you have taken in the last 2 weeks?

Raised blood pressure ever diagnosed by doctor or health worker									
Age Group (years)	Men			Women			Both Sexes		
	n	% diagnosed	95% CI	n	% diagnosed	95% CI	n	% diagnosed	95% CI
25-34	338	2.8	0.3-5.3	647	4.0	1.0-7.0	985	3.6	1.2-5.9
35-44	439	5.5	1.4-9.6	715	10.8	6.5-15.2	1154	8.9	5.3-12.5
45-54	378	8.7	5.3-12.1	524	14.2	9.7-18.7	902	12.0	9.0-15.0
55-64	273	13.0	7.3-18.8	288	20.0	12.7-27.3	561	16.4	11.3-21.5
<b>25-64</b>	<b>1428</b>	<b>7.2</b>	<b>5.4-9.1</b>	<b>2174</b>	<b>10.7</b>	<b>8.8-12.6</b>	<b>3602</b>	<b>9.3</b>	<b>7.8-10.9</b>

Raised blood pressure diagnosed by doctor or health worker in last 12 months									
Age Group (years)	Men			Women			Both Sexes		
	n	% diagnosed	95% CI	n	% diagnosed	95% CI	n	% diagnosed	95% CI
25-34	338	2.8	0.3-5.3	647	3.8	0.8-6.8	985	3.4	1.1-5.8
35-44	439	5.5	1.4-9.6	715	10.4	6.1-14.7	1154	8.6	5.0-12.1
45-54	378	8.1	4.9-11.4	524	13.9	9.4-18.4	902	11.6	8.6-14.6
55-64	273	10.5	5.1-15.8	288	16.1	10.0-22.1	561	13.2	8.8-17.5
<b>25-64</b>	<b>1428</b>	<b>6.5</b>	<b>4.7-8.4</b>	<b>2174</b>	<b>9.9</b>	<b>8.0-11.8</b>	<b>3602</b>	<b>8.6</b>	<b>7.0-10.2</b>

Currently taking blood pressure drugs prescribed by doctor or health worker									
Age Group (years)	Men			Women			Both Sexes		
	n	% taking meds	95% CI	n	% taking meds	95% CI	n	% taking meds	95% CI
25-34	370	1.3	0.0-2.8	690	2.0	0.2-3.7	1060	1.7	0.5-2.9
35-44	481	4.3	0.9-7.6	785	6.7	3.6-9.7	1266	5.8	3.1-8.4
45-54	442	6.3	3.5-9.2	577	12.7	7.4-18.0	1019	10.1	6.6-13.6
55-64	317	7.9	3.4-12.3	352	11.9	6.3-17.5	669	9.9	5.7-14.1
<b>25-64</b>	<b>1610</b>	<b>4.8</b>	<b>3.1-6.6</b>	<b>2404</b>	<b>7.4</b>	<b>5.0-9.9</b>	<b>4014</b>	<b>6.4</b>	<b>4.5-8.3</b>

**Blood  
pressure  
lifestyle  
advice**

Description: Percentage of respondents who received lifestyle advice from a doctor or health worker to treat raised blood pressure.

Instrument question:

Are you currently receiving any of the following treatments/advice for high blood pressure prescribed by a doctor or other health worker?

Advised by doctor or health worker to have special prescribed diet									
Age Group	Men			Women			Both Sexes		
(years)	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	371	1.9	0.1-3.7	687	0.6	0.1-1.1	1058	1.0	0.3-1.8
35-44	481	4.6	1.2-8.0	782	6.1	2.7-9.4	1263	5.5	3.1-7.9
45-54	444	6.5	3.3-9.7	582	12.0	8.0-16.1	1026	9.8	7.0-12.5
55-64	318	7.4	3.3-11.6	351	11.8	7.5-16.2	669	9.6	6.2-13.0
<b>25-64</b>	<b>1614</b>	<b>5.0</b>	<b>3.2-6.8</b>	<b>2402</b>	<b>6.7</b>	<b>5.3-8.1</b>	<b>4016</b>	<b>6.0</b>	<b>4.8-7.3</b>

Advised by doctor or health worker to lose weight									
Age Group	Men			Women			Both Sexes		
(years)	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	369	1.6	0.0-3.3	688	1.1	0.0-2.2	1057	1.3	0.2-2.3
35-44	479	2.4	0.6-4.2	785	6.6	3.2-10.0	1264	5.1	2.9-7.2
45-54	445	4.9	2.4-7.4	579	7.6	4.1-11.2	1024	6.5	4.3-8.7
55-64	316	6.0	1.9-10.0	351	8.5	4.9-12.2	667	7.3	4.2-10.3
<b>25-64</b>	<b>1609</b>	<b>3.6</b>	<b>2.0-5.2</b>	<b>2403</b>	<b>5.5</b>	<b>4.1-6.8</b>	<b>4012</b>	<b>4.7</b>	<b>3.6-5.8</b>

Advised by doctor or health worker to stop smoking									
Age Group	Men			Women			Both Sexes		
(years)	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	364	3.3	0.9-5.7	670	0.1	0.0-0.2	1034	1.2	0.4-2.1
35-44	473	2.9	1.2-4.7	748	0.5	0.0-1.3	1221	1.4	0.7-2.2
45-54	429	4.4	2.0-6.7	542	1.0	0.2-1.8	971	2.4	1.2-3.7
55-64	301	5.4	2.0-8.8	335	3.4	1.3-5.4	636	4.4	2.4-6.4
<b>25-64</b>	<b>1567</b>	<b>3.9</b>	<b>2.5-5.3</b>	<b>2295</b>	<b>0.9</b>	<b>0.5-1.3</b>	<b>3862</b>	<b>2.1</b>	<b>1.4-2.8</b>

Advised by doctor or health worker to start or do more exercise									
Age Group	Men			Women			Both Sexes		
(years)	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	367	6.1	2.7-9.5	680	3.4	1.4-5.4	1047	4.4	2.4-6.3
35-44	477	7.9	3.7-12.0	778	9.1	5.9-12.4	1255	8.7	6.2-11.1
45-54	438	13.3	9.1-17.4	575	8.3	4.8-11.7	1013	10.3	7.9-12.7
55-64	315	11.6	6.8-16.4	346	9.3	4.8-13.7	661	10.5	7.0-13.9
<b>25-64</b>	<b>1597</b>	<b>9.6</b>	<b>7.3-11.9</b>	<b>2379</b>	<b>7.2</b>	<b>5.5-8.9</b>	<b>3976</b>	<b>8.2</b>	<b>6.6-9.7</b>

### **Blood pressure**

Description: Percentage of respondents who have sought advice or received treatment from traditional healers for raised blood pressure.

**advice by  
a  
traditional  
healer**

Instrument questions:

During the past 12 months have you seen a traditional healer for raised blood pressure?

Are you currently taking any herbal or traditional remedy for your high blood pressure?

Seen a traditional healer in the last 12 months											
Age Group		Men			Women			Both Sexes			
(years)	n	%	95% CI		n	%	95% CI		n	%	95% CI
25-34	368	1.4	0.0-3.1		681	0.2	0.0-0.4		1049	0.6	0.0-1.2
35-44	476	2.2	0.0-5.1		780	3.7	0.8-6.7		1256	3.1	1.0-5.3
45-54	434	3.2	1.2-5.3		573	4.8	1.9-7.7		1007	4.2	2.3-6.1
55-64	316	4.0	1.5-6.6		347	5.1	2.0-8.1		663	4.5	2.7-6.4
25-64	1594	2.7	1.3-4.0		2381	3.1	2.0-4.2		3975	2.9	2.0-3.8

Currently taking herbal or traditional remedy for high blood pressure											
Age Group		Men			Women			Both Sexes			
(years)	n	%	95% CI		n	%	95% CI		n	%	95% CI
25-34	369	0.7	0.0-1.6		679	0.1	0.0-0.2		1048	0.3	0.0-0.6
35-44	475	1.8	0.0-4.7		775	1.6	0.0-3.3		1250	1.7	0.2-3.2
45-54	433	3.0	0.3-5.6		569	2.7	0.9-4.5		1002	2.8	1.1-4.5
55-64	316	1.9	0.1-3.6		348	4.2	1.3-7.1		664	3.0	1.4-4.6
25-64	1593	1.8	0.6-3.1		2371	1.8	1.0-2.6		3964	1.8	1.0-2.6

**Diabetes  
diagnosis  
and  
treatment**

Description: Diabetes diagnosis and treatment results among all respondents.

Instrument questions:

Have you ever been told by a doctor or other health worker that you have diabetes?

Was it during the past 12 months?

Are you currently taking any of the following treatments/advice for diabetes prescribed by a doctor or other health worker: insulin? oral drugs?

Diabetes ever diagnosed by doctor or health									
Age Group (years)	Men			Women			Both Sexes		
	n	% diagnosed	95% CI	n	% diagnosed	95% CI	n	% diagnosed	95% CI
25-34	364	0.0	0.0-0.0	685	0.1	0.0-0.4	1049	0.1	0.0-0.2
35-44	474	0.5	0.0-1.0	781	2.2	0.0-4.7	1255	1.5	0.0-3.1
45-54	442	2.7	1.0-4.5	572	4.5	0.1-9.0	1014	3.8	1.2-6.4
55-64	311	3.3	1.4-5.2	348	8.8	4.2-13.3	659	6.1	3.6-8.5
<b>25-64</b>	<b>1591</b>	<b>1.6</b>	<b>1.0-2.1</b>	<b>2386</b>	<b>3.1</b>	<b>1.7-4.5</b>	<b>3977</b>	<b>2.5</b>	<b>1.6-3.3</b>

Diabetes diagnosed by doctor or health worker in last 12 months									
Age Group (years)	Men			Women			Both Sexes		
	n	% diagnosed	95% CI	n	% diagnosed	95% CI	n	% diagnosed	95% CI
25-34	364	0.0	0.0-0.0	685	0.1	0.0-0.2	1049	0.0	0.0-0.1
35-44	474	0.4	0.0-0.9	781	2.1	0.0-4.6	1255	1.5	0.0-3.1
45-54	442	2.5	0.8-4.2	572	3.1	1.0-5.3	1014	2.9	1.5-4.3
55-64	311	2.8	1.1-4.5	348	8.5	4.0-13.0	659	5.7	3.2-8.1
<b>25-64</b>	<b>1591</b>	<b>1.4</b>	<b>0.9-1.9</b>	<b>2386</b>	<b>2.7</b>	<b>1.6-3.7</b>	<b>3977</b>	<b>2.1</b>	<b>1.5-2.8</b>

#### Currently taking insulin prescribed for diabetes by doctor or health worker

Age Group (years)	Men				Women				Both Sexes		
	n	% taking insulin	95% CI		n	% taking insulin	95% CI		n	% taking insulin	95% CI
25-34	363	0.0	0.0-0.1		681	0.1	0.0-0.3		1044	0.1	0.0-0.2
35-44	475	0.1	0.0-0.4		771	0.8	0.0-1.8		1246	0.6	0.0-1.2
45-54	442	1.4	0.1-2.8		571	2.7	0.5-4.9		1013	2.2	0.7-3.6
55-64	316	2.0	0.3-3.6		351	3.3	0.0-6.7		667	2.6	0.6-4.6
<b>25-64</b>	<b>1596</b>	<b>0.8</b>	<b>0.4-1.3</b>		<b>2374</b>	<b>1.4</b>	<b>0.6-2.2</b>		<b>3970</b>	<b>1.2</b>	<b>0.6-1.7</b>

Currently taking oral drugs prescribed for diabetes by doctor or health worker											
Age Group	Men				Women				Both Sexes		
(years)	n	% taking meds	95% CI		n	% taking meds	95% CI		n	% taking meds	95% CI
25-34	364	0.0	0.0-0.1		682	0.1	0.0-0.3		1046	0.1	0.0-0.2
35-44	476	0.4	0.0-1.0		774	0.9	0.0-1.9		1250	0.7	0.1-1.3
45-54	442	3.1	1.2-5.1		571	3.5	1.3-5.6		1013	3.3	1.9-4.8
55-64	318	3.9	1.6-6.1		351	7.0	2.9-11.0		669	5.4	3.0-7.8
25-64	1600	1.8	1.1-2.5		2378	2.2	1.3-3.1		3978	2.0	1.4-2.6

### ***Diabetes lifestyle***

Description: Percentage of respondents who received lifestyle advice from a doctor or health worker to diabetes.

### ***advice***

Instrument question:

Are you currently taking any of the following treatments/advice for diabetes prescribed by a doctor or other health worker?



Advised by doctor or health worker to have special prescribed diet											
Age Group		Men			Women			Both Sexes			
(years)	n	%	95% CI		n	%	95% CI		n	%	95% CI
25-34	366	0.0	0.0-0.1		686	0.2	0.0-0.4		1052	0.1	0.0-0.3
35-44	477	0.6	0.0-1.4		778	2.0	0.0-4.4		1255	1.5	0.0-3.0
45-54	445	4.5	2.0-6.9		577	3.4	1.2-5.7		1022	3.9	1.8-5.9
55-64	318	5.4	2.6-8.3		354	9.1	4.6-13.5		672	7.2	4.6-9.8
25-64	1606	2.5	1.7-3.4		2395	2.8	1.8-3.7		4001	2.7	2.0-3.4

Advised by doctor or health worker to lose weight											
Age Group		Men			Women			Both Sexes			
(years)	n	%	95% CI		n	%	95% CI		n	%	95% CI
25-34	365	1.4	0.0-3.1		685	1.0	0.3-1.7		1050	1.1	0.2-2.0
35-44	478	2.0	0.2-3.9		778	4.1	1.3-6.9		1256	3.3	1.3-5.2
45-54	442	4.2	2.2-6.2		578	4.4	1.9-6.8		1020	4.3	2.9-5.6
55-64	316	5.0	1.8-8.2		353	7.3	3.6-11.0		669	6.2	3.7-8.6
25-64	1601	3.1	1.7-4.4		2394	3.7	2.7-4.7		3995	3.4	2.5-4.3

Advised by doctor or health worker to stop smoking
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Age Group (years)	Men				Women				Both Sexes		
	n	%	95% CI		n	%	95% CI		n	%	95% CI
25-34	357	2.1	0.5-3.7		678	0.0	0.0-0.0		1035	0.7	0.2-1.3
35-44	469	2.8	1.2-4.4		769	0.1	0.0-0.2		1238	1.1	0.5-1.7
45-54	433	6.1	3.8-8.5		567	0.6	0.0-1.3		1000	2.9	1.8-4.0
55-64	304	5.2	2.3-8.0		341	1.5	0.0-3.2		645	3.4	1.8-5.0
<b>25-64</b>	<b>1563</b>	<b>4.0</b>	<b>2.8-5.2</b>		<b>2355</b>	<b>0.4</b>	<b>0.1-0.7</b>		<b>3918</b>	<b>1.8</b>	<b>1.3-2.4</b>

Advised doctor or health worker to start or do more exercise											
Age Group (years)	Men				Women				Both Sexes		
	n	%	95% CI		n	%	95% CI		n	%	95% CI
25-34	365	4.8	2.1-7.5		684	1.9	0.5-3.2		1049	2.9	1.4-4.5
35-44	476	5.2	2.8-7.7		778	4.6	2.0-7.3		1254	4.8	2.8-6.9
45-54	442	8.3	5.8-10.8		579	5.1	2.4-7.8		1021	6.4	4.5-8.3
55-64	316	8.0	4.1-11.9		351	8.3	3.8-12.8		667	8.2	4.9-11.4
<b>25-64</b>	<b>1599</b>	<b>6.5</b>	<b>4.8-8.3</b>		<b>2392</b>	<b>4.4</b>	<b>3.2-5.7</b>		<b>3991</b>	<b>5.3</b>	<b>4.1-6.4</b>

***Diabetes  
advice by  
traditional  
healer***

Description: Percentage of respondents who are have sought advice or treatment from traditional healers for diabetes.

Instrument questions:

During the past 12 months have you seen a traditional healer for diabetes?

Are you currently taking any herbal or traditional remedy for your diabetes?

Seen a traditional healer for diabetes in the last 12 months									
Age Group	Men			Women			Both Sexes		
(years)	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	365	0.0	0.0-0.1	687	0.8	0.0-1.8	1052	0.6	0.0-1.2
35-44	481	0.5	0.0-1.2	779	1.8	0.6-3.1	1260	1.3	0.5-2.1
45-54	445	3.4	0.8-5.9	579	3.9	1.4-6.4	1024	3.7	1.9-5.5
55-64	319	5.9	2.8-8.9	354	6.8	2.9-10.7	673	6.3	4.0-8.7
<b>25-64</b>	<b>1610</b>	<b>2.3</b>	<b>1.3-3.3</b>	<b>2399</b>	<b>2.8</b>	<b>1.8-3.8</b>	<b>4009</b>	<b>2.6</b>	<b>1.9-3.2</b>

Currently taking herbal or traditional treatment for diabetes									
Age Group	Men			Women			Both Sexes		
(years)	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	365	0.0	0.0-0.0	684	0.4	0.0-0.8	1049	0.2	0.0-0.5
35-44	478	0.0	0.0-0.0	778	0.5	0.0-1.2	1256	0.3	0.0-0.7
45-54	442	2.7	0.2-5.3	578	1.7	0.3-3.1	1020	2.1	0.7-3.6
55-64	314	3.3	1.0-5.7	353	4.5	1.7-7.2	667	3.9	2.1-5.7
<b>25-64</b>	<b>1599</b>	<b>1.4</b>	<b>0.6-2.2</b>	<b>2393</b>	<b>1.3</b>	<b>0.6-2.0</b>	<b>3992</b>	<b>1.4</b>	<b>0.8-1.9</b>

## Physical Measurements

### *Height, weight and BMI*

Description: Mean height, weight, and body mass index among all respondent (excluding pregnant women for weight and BMI).

Instrument questions:

Height

Weight

Mean height (cm)							
Age Group (years)	Men				Women		
	n	Mean	95% CI		n	Mean	95% CI
25-34	370	163.6	160.3-166.9		698	154.4	153.9-154.9
35-44	490	162.6	160.9-164.3		791	153.5	152.9-154.0
45-54	453	162.1	161.2-163.1		586	152.9	152.1-153.7
55-64	322	160.2	158.8-161.6		355	151.7	150.6-152.8
<b>25-64</b>	<b>1635</b>	<b>162.2</b>	<b>161.5-162.9</b>		<b>2430</b>	<b>153.4</b>	<b>153.0-153.7</b>

Mean weight (kg)							
Age Group (years)	Men				Women		
	n	Mean	95% CI		n	Mean	95% CI
25-34	359	58.8	56.9-60.6		669	53.8	51.7-55.8
35-44	470	62.1	60.5-63.6		769	57.1	55.9-58.3
45-54	428	60.4	59.0-61.7		575	56.8	55.1-58.5
55-64	318	61.5	59.2-63.8		346	55.1	52.7-57.4
<b>25-64</b>	<b>1575</b>	<b>60.7</b>	<b>59.5-61.9</b>		<b>2359</b>	<b>55.8</b>	<b>54.9-56.6</b>

### Mean BMI (kg/m<sup>2</sup>)

Age Group (years)	Men				Women				Both Sexes		
	n	Mean	95% CI		n	Mean	95% CI		n	Mean	95% CI
25-34	356	21.9	21.6-22.3		662	22.5	21.7-23.3		1018	22.3	21.9-22.7
35-44	466	23.5	22.5-24.5		764	24.2	23.7-24.8		1230	24.0	23.4-24.5
45-54	426	23.0	22.6-23.4		565	24.3	23.7-25.0		991	23.8	23.3-24.2
55-64	312	24.0	22.7-25.2		342	24.0	22.9-25.2		654	24.0	22.9-25.1
<b>25-64</b>	<b>1560</b>	<b>23.1</b>	<b>22.6-23.5</b>		<b>2333</b>	<b>23.7</b>	<b>23.3-24.1</b>		<b>3893</b>	<b>23.5</b>	<b>23.1-23.9</b>

### ***BMI categories***

Description: Percentage of respondents (excluding pregnant women) in each BMI category.

Instrument questions:

Height

Weight

BMI classifications									
Age Group (years)	Men								
	n	% Under-weight <18.5	95% CI	% Normal weight 18.5-24.9	95% CI	% BMI 25.0-29.9	95% CI	% Obese ≥30.0	95% CI
25-34	356	4.9	1.6-8.1	85.3	80.7-89.9	9.3	5.9-12.7	0.6	0.0-1.2
35-44	466	4.4	1.4-7.4	69.2	60.2-78.2	20.2	14.6-25.8	6.2	0.0-14.3
45-54	426	8.2	5.4-11.1	66.5	60.3-72.8	21.2	16.4-26.1	4.0	1.7-6.3
55-64	312	7.0	2.0-12.1	57.9	44.8-70.9	27.8	11.2-44.4	7.3	0.6-14.0
<b>25-64</b>	<b>1560</b>	<b>6.1</b>	<b>4.0-8.1</b>	<b>70.1</b>	<b>65.5-74.7</b>	<b>19.4</b>	<b>15.4-23.3</b>	<b>4.5</b>	<b>2.4-6.6</b>

### **BMI classifications**

Women									
Age Group (years)	n	% Under-weight <18.5	95% CI	% Normal weight 18.5-24.9	95% CI	% BMI 25.0-29.9	95% CI	% Obese ≥30.0	95% CI
25-34	662	7.0	3.8-10.2	75.3	70.4-80.2	13.5	8.2-18.8	4.2	0.0-8.8
35-44	764	2.3	1.2-3.5	65.1	59.2-71.0	24.8	19.7-29.9	7.8	4.9-10.7
45-54	565	3.8	0.6-7.0	59.4	51.5-67.3	28.3	22.5-34.0	8.6	4.1-13.0
55-64	342	5.5	0.8-10.2	57.9	45.6-70.3	31.1	17.6-44.6	5.5	2.4-8.5
<b>25-64</b>	<b>2333</b>	<b>4.5</b>	<b>3.1-5.9</b>	<b>65.6</b>	<b>62.4-68.8</b>	<b>23.3</b>	<b>20.5-26.1</b>	<b>6.6</b>	<b>4.9-8.3</b>

BMI classifications									
Both Sexes									
Age Group (years)	n	% Under-weight <18.5	95% CI	% Normal weight 18.5-24.9	95% CI	% BMI 25.0-29.9	95% CI	% Obese ≥30.0	95% CI
25-34	1018	6.2	3.8-8.7	78.9	75.3-82.5	11.9	8.2-15.7	2.9	0.0-5.9
35-44	1230	3.1	1.6-4.6	66.6	62.0-71.2	23.1	18.5-27.6	7.2	3.8-10.6
45-54	991	5.6	3.2-8.0	62.3	57.4-67.2	25.4	21.3-29.5	6.7	3.9-9.5
55-64	654	6.3	2.6-9.9	57.9	46.3-69.5	29.4	15.0-43.8	6.4	2.6-10.1
<b>25-64</b>	<b>3893</b>	<b>5.1</b>	<b>3.8-6.4</b>	<b>67.4</b>	<b>65.1-69.8</b>	<b>21.7</b>	<b>19.5-23.9</b>	<b>5.8</b>	<b>4.1-7.4</b>

***Waist  
circumference***

Description: Mean waist circumference among all respondents (excluding pregnant women).

Instrument question:  
Waist circumference measurement

Waist circumference (cm)							
Age Group (years)	Men				Women		
	n	Mean	95% CI		n	Mean	95% CI
25-34	206	72.8	69.2-76.5		331	73.4	70.2-76.5
35-44	272	73.9	69.4-78.3		421	73.4	70.6-76.3
45-54	225	78.1	73.2-82.9		312	77.9	74.9-80.9
55-64	172	82.4	78.4-86.5		193	77.8	70.7-84.8
<b>25-64</b>	<b>875</b>	<b>76.5</b>	<b>73.8-79.3</b>		<b>1257</b>	<b>75.2</b>	<b>73.2-77.2</b>

***Hip  
circumference***

Description: Mean hip circumference among all respondents (excluding pregnant women).

Instrument question:  
Hip circumference measurement

Hip circumference (cm)							
Age Group (years)	Men				Women		
	n	Mean	95% CI		n	Mean	95% CI
25-34	234	90.2	88.3-92.0		422	90.6	89.1-92.1
35-44	306	93.4	90.8-95.9		549	92.5	91.4-93.5
45-54	322	90.8	88.9-92.7		400	95.6	94.1-97.1
55-64	252	93.6	91.5-95.8		274	92.4	88.9-96.0
<b>25-64</b>	<b>1114</b>	<b>92.0</b>	<b>90.4-93.5</b>		<b>1645</b>	<b>92.7</b>	<b>91.9-93.6</b>

***Waist /  
hip  
ratio***

Description: Mean waist-to-hip ratio among all respondents (excluding pregnant women).

Instrument question:  
Waist and hip circumference measurement



Mean waist / hip ratio							
Age Group	Men				Women		
(years)	n	Mean	95% CI		n	Mean	95% CI
25-34	157	0.9	0.8-0.9		302	0.8	0.8-0.9
35-44	211	0.9	0.9-0.9		372	0.8	0.8-0.9
45-54	193	0.9	0.9-0.9		266	0.9	0.9-0.9
55-64	151	0.9	0.9-0.9		171	0.9	0.9-0.9
25-64	712	0.9	0.9-0.9		1111	0.9	0.8-0.9

### ***Blood pressure***

Description: Mean blood pressure among all respondents, including those currently on medication for raised blood pressure.

Instrument question:

Reading 1-3 systolic and diastolic blood pressure

### **Mean systolic blood pressure (mmHg)**

Age Group (years)	Men				Women				Both Sexes		
	n	Mean	95% CI		n	Mean	95% CI		n	Mean	95% CI
25-34	372	122.2	120.3-124.0		698	116.1	114.0-118.3		1070	118.3	116.6-120.0
35-44	497	125.3	122.8-127.9		801	120.3	118.3-122.2		1298	122.2	120.4-124.0
45-54	451	128.6	126.2-131.1		589	126.0	123.2-128.8		1040	127.1	124.9-129.3
55-64	324	138.0	133.2-142.8		358	133.2	127.1-139.4		682	135.7	130.9-140.4
<b>25-64</b>	<b>1644</b>	<b>128.1</b>	<b>126.3-129.9</b>		<b>2446</b>	<b>122.2</b>	<b>120.4-124.1</b>		<b>4090</b>	<b>124.6</b>	<b>123.0-126.3</b>

Mean diastolic blood pressure (mmHg)											
Age Group		Men			Women			Both Sexes			
(years)	n	Mean	95% CI		n	Mean	95% CI		n	Mean	95% CI
25-34	372	74.2	72.8-75.5		698	74.0	72.3-75.8		1070	74.1	73.1-75.1
35-44	497	77.7	75.6-79.7		801	75.9	74.6-77.2		1298	76.6	75.4-77.8
45-54	451	78.6	77.0-80.2		589	77.3	75.6-79.0		1040	77.8	76.5-79.2
55-64	324	81.4	79.0-83.8		358	78.5	75.8-81.2		682	80.0	77.7-82.3
25-64	1644	77.8	76.8-78.9		2446	76.1	75.0-77.1		4090	76.8	75.9-77.7

***Raised  
blood  
pressure***

Description: Percentage of respondents with raised blood pressure and percentage on medication for raised blood pressure.

Instrument question:

During the past two weeks, have you been treated for raised blood pressure with drugs (medication) prescribed by a doctor or other health worker?

Reading 1-3 systolic and diastolic blood pressure

SBP ≥140 and/or DBP ≥ 90 mmHg											
Age Group		Men			Women			Both Sexes			
(years)	n	%	95% CI		n	%	95% CI		n	%	95% CI
25-34	371	8.6	4.9-12.3		693	9.1	5.0-13.2		1064	8.9	5.9-11.9
35-44	494	17.3	9.1-25.4		784	12.4	8.7-16.1		1278	14.3	10.5-18.0
45-54	434	28.0	22.3-33.8		564	19.5	14.5-24.5		998	23.0	18.9-27.2
55-64	310	43.4	29.2-57.7		336	38.3	25.1-51.6		646	40.9	28.1-53.8
25-64	1609	23.4	18.4-28.3		2377	16.8	13.7-19.8		3986	19.5	16.0-23.0

SBP ≥140 and/or DBP ≥ 90 mmHg or currently on medication for raised blood pressure											
Age Group		Men			Women			Both Sexes			
(years)	n	%	95% CI		n	%	95% CI		n	%	95% CI
25-34	372	8.9	5.2-12.7		698	12.9	4.3-21.5		1070	11.5	5.9-17.1
35-44	497	17.8	9.7-25.9		801	17.1	12.8-21.3		1298	17.3	12.7-22.0
45-54	452	30.8	25.1-36.5		590	22.4	17.6-27.1		1042	25.9	22.0-29.7
55-64	324	45.3	31.5-59.2		358	41.5	29.4-53.5		682	43.4	31.5-55.4
25-64	1645	24.9	20.1-29.7		2447	20.5	16.2-24.8		4092	22.3	18.1-26.5

Currently on medication for raised blood pressure
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Age Group (years)	Men				Women				Both Sexes		
	n	%	95% CI		n	%	95% CI		n	%	95% CI
25-34	372	0.3	0.0-1.0		698	4.2	0.0-10.4		1070	2.8	0.0-6.9
35-44	497	0.7	0.0-1.6		801	5.3	1.8-8.9		1298	3.6	1.4-5.7
45-54	451	3.8	1.3-6.4		589	3.5	1.6-5.3		1040	3.6	1.8-5.5
55-64	324	3.4	0.9-5.9		358	5.1	2.5-7.6		682	4.2	2.5-6.0
<b>25-64</b>	<b>1644</b>	<b>2.0</b>	<b>1.2-2.8</b>		<b>2446</b>	<b>4.5</b>	<b>1.9-7.1</b>		<b>4090</b>	<b>3.5</b>	<b>1.9-5.0</b>

***Raised  
blood  
pressure***

Description: Percentage of respondents with raised blood pressure and percentage on medication for raised blood pressure.

Instrument question:

During the past two weeks, have you been treated for raised blood pressure with drugs (medication) prescribed by a doctor or other health worker?

Reading 1-3 systolic and diastolic blood pressure

SBP ≥160 and/or DBP ≥ 100 mmHg											
Age Group (years)	Men				Women				Both Sexes		
	n	%	95% CI		n	%	95% CI		n	%	95% CI
25-34	371	1.6	0.1-3.0		693	3.5	0.0-7.9		1064	2.8	0.0-5.6
35-44	494	2.6	0.9-4.3		784	2.6	1.3-3.9		1278	2.6	1.6-3.6
45-54	434	7.1	3.3-10.9		564	6.2	2.9-9.5		998	6.6	3.7-9.5
55-64	310	11.6	7.3-15.8		336	17.4	2.8-32.0		646	14.4	7.9-20.9
<b>25-64</b>	<b>1609</b>	<b>5.4</b>	<b>3.6-7.1</b>		<b>2377</b>	<b>5.8</b>	<b>2.4-9.3</b>		<b>3986</b>	<b>5.6</b>	<b>3.5-7.8</b>

SBP ≥160 and/or DBP ≥ 100 mmHg or currently on medication for raised blood pressure											
Age Group		Men			Women			Both Sexes			
(years)	n	%	95% CI		n	%	95% CI		n	%	95% CI
25-34	372	1.9	0.3-3.5		698	7.5	0.0-17.7		1070	5.5	0.0-12.2
35-44	497	3.2	1.3-5.2		801	7.8	4.2-11.5		1298	6.1	3.9-8.3
45-54	452	10.7	7.0-14.4		590	9.6	6.1-13.0		1042	10.0	7.1-12.9
55-64	324	14.6	9.5-19.6		358	21.6	8.2-35.0		682	18.0	12.3-23.7
25-64	1645	7.3	5.4-9.1		2447	10.1	4.6-15.6		4092	8.9	5.8-12.1

***Treatment  
and control***

Description: Percentage of respondents with treated and/or controlled of raised blood pressure among those with raised blood pressure (SBP  $\geq$ 140 and/or DBP  $\geq$  90 mmHg) or currently on medication for raised blood pressure.

***of raised  
blood  
pressure***

Instrument questions:

During the past two weeks, have you been treated for raised blood pressure with drugs (medication) prescribed by a doctor or other health worker?

Reading 1-3 systolic and diastolic blood pressure

Respondents with treated and/or controlled raised blood pressure							
Men							
Age Group (years)	n	% On medication and SBP<140 and DBP<90	95% CI	% On medication and SBP≥140 and/orDBP≥90	95% CI	% Not on medication and SBP≥140 and/orDBP≥90	95% CI
25-34	34	4.7	0.0-13.6	0.0	0.0-0.0	95.3	86.4-100.0
35-44	67	3.8	0.0-9.7	0.0	0.0-0.0	96.2	90.3-100.0
45-54	127	9.2	1.1-17.2	3.6	0.6-6.7	87.2	79.0-95.4
55-64	138	0.9	0.0-2.4	6.6	1.1-12.1	92.4	86.6-98.2
<b>25-64</b>	<b>366</b>	<b>4.5</b>	<b>1.2-7.7</b>	<b>3.8</b>	<b>1.5-6.1</b>	<b>91.7</b>	<b>87.8-95.6</b>

Respondents with treated and/or controlled raised blood pressure

<b>Women</b>							
Age Group (years)	n	% On medication and SBP<140 and DBP<90	95% CI	% On medication and SBP≥140 and/orDBP≥90	95% CI	% Not on medication and SBP≥140 and/orDBP≥90	95% CI
25-34	48	31.3	1.4-61.2	1.2	0.0-3.7	67.5	38.8-96.1
35-44	107	13.9	3.4-24.4	18.7	3.1-34.4	67.4	49.8-84.9
45-54	141	9.7	2.8-16.7	6.8	0.8-12.8	83.5	74.7-92.2
55-64	125	5.2	0.7-9.7	7.2	1.5-13.0	87.6	79.5-95.6
<b>25-64</b>	<b>421</b>	<b>13.7</b>	<b>6.0-21.4</b>	<b>8.9</b>	<b>5.3-12.5</b>	<b>77.4</b>	<b>67.8-86.9</b>

<b>Respondents with treated and/or controlled raised blood pressure</b>							
<b>Both Sexes</b>							
Age Group (years)	n	% On medication and SBP<140 and DBP<90	95% CI	% On medication and SBP≥140 and/orDBP≥90	95% CI	% Not on medication and SBP≥140 and/orDBP≥90	95% CI
25-34	82	24.9	0.0-51.6	0.9	0.0-2.8	74.2	48.1-100.0
35-44	174	10.0	3.2-16.7	11.4	2.6-20.2	78.7	69.0-88.3
45-54	268	9.4	2.5-16.3	5.2	1.8-8.6	85.3	78.0-92.7
55-64	263	2.9	0.4-5.4	6.9	2.5-11.4	90.2	84.6-95.7
<b>25-64</b>	<b>787</b>	<b>9.6</b>	<b>5.0-14.1</b>	<b>6.6</b>	<b>4.5-8.8</b>	<b>83.8</b>	<b>78.6-89.1</b>

**Heart rate**

Description: Mean heart rate among all respondents and percentage with a raised heart rate.

Instrument question:

Heart Rate measurement

Mean beats per minute											
Age Group		Men			Women			Both Sexes			
(years)	n	Mean	95% CI		n	Mean	95% CI		n	Mean	95% CI
25-34	367	77.7	76.1-79.2		694	80.9	79.1-82.7		1061	79.8	78.4-81.1
35-44	495	77.6	76.3-78.9		794	80.2	78.5-81.9		1289	79.2	78.2-80.3
45-54	445	79.3	78.1-80.5		584	78.4	75.9-80.8		1029	78.7	77.1-80.4
55-64	319	79.2	76.9-81.4		353	78.8	77.0-80.7		672	79.0	77.9-80.1
25-64	1626	78.4	77.6-79.2		2425	79.8	78.8-80.7		4051	79.2	78.6-79.9

Percentage with beats per minute over 100											
Age Group		Men			Women			Both Sexes			
(years)	n	%	95% CI		n	%	95% CI		n	%	95% CI
25-34	367	1.8	0.3-3.3		694	3.5	0.6-6.4		1061	2.9	1.0-4.9
35-44	495	2.4	0.8-3.9		794	2.9	1.0-4.9		1289	2.7	1.3-4.1
45-54	445	4.5	1.3-7.8		584	2.3	0.9-3.7		1029	3.2	1.6-4.8
55-64	319	3.6	1.4-5.9		353	2.8	0.7-4.8		672	3.2	1.6-4.8
25-64	1626	3.1	1.9-4.2		2425	2.9	1.8-4.1		4051	3.0	2.1-3.8



## Raised Risk

### ***Raised risk***

Description: Percentage of respondents with 0, 1-2, or 3-5 of the following risk factors:

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

Instrument question: combined from Step 1 and Step 2

Summary of Combined Risk Factors							
Age Group (years)	Men						
	n	% with 0 risk factors	95% CI	% with 1-2 risk factors	95% CI	% with 3-5 risk factors	95% CI
25-44	510	30.7	21.0-40.3	59.9	51.2-68.6	9.4	6.1-12.7
45-64	408	9.4	5.8-12.9	73.2	65.8-80.5	17.5	11.1-23.8
<b>25-64</b>	<b>918</b>	<b>21.0</b>	<b>15.8-26.2</b>	<b>65.9</b>	<b>60.3-71.6</b>	<b>13.1</b>	<b>9.2-17.0</b>

Summary of Combined Risk Factors							
Age Group (years)	Women						
	n	% with 0 risk factors	95% CI	% with 1-2 risk factors	95% CI	% with 3-5 risk factors	95% CI
25-44	985	41.4	33.2-49.7	53.6	46.4-60.9	4.9	2.7-7.2
45-64	590	28.6	21.0-36.2	60.9	55.5-66.4	10.4	6.2-14.6
<b>25-64</b>	<b>1575</b>	<b>36.6</b>	<b>29.2-44.0</b>	<b>56.4</b>	<b>50.4-62.4</b>	<b>7.0</b>	<b>4.4-9.6</b>

Summary of Combined Risk Factors							
Age Group (years)	Both Sexes						
	n	% with 0 risk factors	95% CI	% with 1-2 risk factors	95% CI	% with 3-5 risk factors	95% CI
25-44	1495	37.9	29.9-45.9	55.7	48.7-62.7	6.4	4.4-8.4
45-64	998	20.8	16.3-25.4	65.9	62.6-69.2	13.3	9.1-17.4
<b>25-64</b>	<b>2493</b>	<b>31.0</b>	<b>24.9-37.0</b>	<b>59.8</b>	<b>55.2-64.5</b>	<b>9.2</b>	<b>6.6-11.8</b>