

**MONGOLIAN STEPS SURVEY ON THE PREVALENCE
OF NONCOMMUNICABLE DISEASE AND INJURY RISK
FACTORS - 2009**

**MONGOLIAN STEPS SURVEY ON THE
PREVALENCE OF NONCOMMUNICABLE
DISEASE AND INJURY RISK FACTORS-2009**

1. Noncommunicable diseases
2. Poverty
3. Developing countries

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GLOSSARY

BMI	- Body Mass Index
BP	- Blood pressure
DM	- Diabetes Mellitus
DBP	- Diastolic Blood Pressure
Dept. PHCPIC	- Department of Public Health Care Policy Implementation and Coordination of MOH
Dept. SPP	- Department of Strategic Policy Planning of MOH
Dept. IME	- Department of Information, Monitoring and Evaluation of MOH
IFG	- Impaired fasting glucose
MNMRI	- Mongolian National Medical Research Institute
MOH	- Ministry of Health
NRC	- Nutrition Research Center of Public Health Institute
RPCMB	- Research and Production Center of Medical Biotechnology in Public Health Institute
MCA-M	- Millennium Challenge Account, Mongolia
MSc	- Master of Health Sciences
NCD	- Non-communicable diseases
PHI	- Public Health Institute
SBP	- Systolic Blood Pressure
PDA	- Personal Digital Assistant: a handheld PC
WPRO	- Western Pacific Regional Office of WHO
WC	- Waist Circumference
GPD	- General Police Department

FOREWORD

The National NCD Prevention and Control Programme was adopted in 2005 by the Government of Mongolia and it is being implemented in two phases toward 2013. With the technical assistance of the World Health Organization, the first NCD STEPS survey was conducted in 2005, aimed to establish baseline indicators of the National Programme and of the NCD surveillance system in Mongolia.

National Public Health Institute of the Ministry of Health has successfully carried out Mongolian STEPS Survey on the Prevalence of Noncommunicable Diseases and Injury Risk Factors for the second time.

The primary objective of the current survey was to provide up-to-date information for assessing the situation of NCD risk factors and injury among Mongolian population. It was also intended to furnish the necessary data for monitoring and evaluating the implementation status of the National Program and to determine the needs for MCA Mongolia Health Project and to contribute to the further planning of the next strategies of the World Health Organization programme.

We believe that the STEPS Mongolia 2009 survey results not only generate key information sources, but will also provide researchers and all users with comprehensive data and information on the current situation of NCD risk factors, breast and cervical cancer early detection status, and information of injury and violence among the population.

The significance of the survey is to extend NCD risk factor surveillance system in Mongolia and enable data to be incorporated with WHO NCD Global Info Base to obtain internationally comparable trends in NCD risk factors among Mongolian population. These valuable information and facts with evidence provide us to effectively implement public health policies, programmes, and projects.

We would like to emphasize that the survey was conducted in accordance with international standards by means of the technical assistance of the World Health Organization, with financial assistance from MCA Mongolia Health Project and effective collaboration of STEPS Coordinating Committee in MOH, the Technical Working Group members and experts of all other participating organizations.

MINISTER OF HEALTH



S. LAMBAA

PARTICIPATING ORGANIZATIONS:

Ministry of Health
 World Health Organization
 Millennium Challenge Account –Mongolia Health project
 Public Health Institute
 Health Sciences University
 National Medical Research Institute
 National Cancer Center
 Mongolian State Committee of Physical Culture and Sports
 National Traumatology and Orthopaedic Research Center
 Child Rights Protection Center
 City Health Authority
 Regional Diagnostic and Treatment Centers
 District and Aimag Health Agencies

International Consultants:

Leanne Margaret Riley, PhD
 Head, Surveillance Dept. of Chronic Diseases and Health Promotion, WHO
 Melanie Cowan, MPH
 Technical Officer, Surveillance Dept. of Chronic Diseases and Health Promotion, WHO

Principal Investigator, Project leader

J.Oyunbileg, ScD (Biol), Professor, Academician
 General Director, Public Health Institute

STEPS Coordinating Committee at MOH

S.Tugsdelger, MD, MPH, *Chairman*
 Director, Dept. Public Health Care Policy Implementation & Coordination, MOH
 J.Oyunbileg, ScD (Biol), Professor, Academician
Deputy Chairman
 General Director, Public Health Institute
 G.Tsetsegdary, MD, PhD, *Secretary*
 Senior officer, Dept. Public Health Care Policy Implementation & Coordination, MOH
 B.Burmaa, PhD
 Senior Officer, Dept. Strategic Policy Planning, MOH
 B.Khongolzul, MD
 Deputy-Director, Dept. Information Monitoring and Evaluation, MOH
 P.Enkhtuya, PhD
 Deputy Director, Public Health Institute
 I.Bolormaa, PhD
 Scientific Secretary, Public Health Institute
 J.Batjargal, MD, PhD
 Director, Nutrition Research Center, Public Health Institute

Ts.Enkhjargal, ScD (Biol), Academician
Director, Public Health Laboratories, Public Health Institute

D.Otgontuya, MD, MSc
Researcher, Nutrition Research Center, Public Health Institute

B.Munkhbat, PhD, ScD (Biol)
Deputy Director, MCA Mongolia Health Project

J.Enkhsaikhan, PhD
Specialist, MCA Mongolia Health Project

J.Tungalag
Chairman, Section of the Mongolian Physical Education and Sports Authority

D.Narantuya, MD, PhD
MD, PhD, Health Sciences University

Kh.Altaisaikhan, MD, PhD
Deputy President, Mongolian Health Sciences University

D.Oyunchimeg, MD
Head, Research and Training Unit, National Cancer Research Center

B.Bayarmaa, MD, MSc
Head, Research and Foreign relation department, National Mental Health Center

Kh.Nansalmaa, MD
Public Health Specialist, National Traumatology and Orthopaedic Research Center

S.Enkhtur
Head, Department of Public Relation, National Road Traffic Agency

S.Govind, MPH
Public Health Specialist, WHO Country Office

B.Tsogzolmaa, MSc
Programme officer, WHO Country Office

Sh.Enkhtsetseg, PhD
Programme officer, WHO Country Office

Project team

Project coordinator

D.Otgontuya, MD, MSc
Researcher, Nutrition Research Center, Public Health Institute

Survey Team Leaders

I.Bolormaa, PhD
Scientific Secretary, Public Health Institute

Ts. Enkhjargal, ScD (Biol), Academician
Director, Public Health Laboratories, Public Health Institut

Survey team members

J. Tungalag
Chairman, Section of the Mongolian Physical Education and Sports Authority

B. Sodgerel MD, PhD
Researcher, National Medical Research Institute

N. Bolormaa MD, MSc
Researcher, Nutrition Research Center, Public Health Institute

U. Tserendolgor MD, ScD,
Researcher, Nutrition Research Center, Public Health Institute

T. Erdenezul MD, PhD
Lecturer, Health Science University

B. Undarmaa, PhD
Professional officer, National Professional Inspection Agency

N. Narantuya, MD, MSc
Head of Public Health Management and Coordination Unit, Public Health Institute

S. Tsegmed, MSc
Researcher, Hygiene and Human Ecology Center, Public Health Institute

J. Demberelsuren, MSc
Researcher, Medical Research and Training Center, Public Health Institute

B. Soninkhuu, MD
Head, Public Health Department, City Health Authority

B. Davaakhuu
Officer, Public Health Department, City Health Authority

J. Tsogzolmaa, MD, MSc
Professional officer, National Statistical Office

D. Erveekhei, MD
NCD officer, Regional Diagnostic and Treatment Center, Khovd aimag

Ts Ganbat, MD
NCD officer, Regional Diagnostic and Treatment Center, Dornod aimag

Ts. Battuvshin, MD
Head, Central hospital, Orkhon aimag

Kh. Bakytjan
Senior Officer, Mongolian Physical Education and Sports Authority

Ts. Mart
Officer, Health Promotion Division, Government Implementation Agency

B. Davaadulam. MSc
Researcher, Nutrition Research Center, Public Health Institute

A. Erdenebat, MD
Researcher, Medical Research and Training Center, Public Health Institute

Kh. Tserensuren, MSc
Researcher, Biotechnology Research, Training and Production Center, Public Health Institute

Ts. Tseveensuren, MSc
Researcher, Biotechnological Research, Training and Production Center, Public Health Institute

N. Enkhchimeg
Officer, National Infectious Disease Research Center

J.Javzandolgor
Researcher, Medical Research and Training Center, Public Health Institute

D.Odjargal
Researcher, Researcher at the Toxicology Center, Public Health Institute

M.Oyunchimeg
Researcher, Ecology & Hygiene Center, Public Health Institute

B. Khishigjargal
Officer, Health Agency of Sukhbaatar District

Sh.Nansalmaa, MD
Professional Officer, National Traumatology and Orthopaedic Research Center

O.Altansukh
Programmist, Medical Research and Training Center, Public Health Institute

B. Dulamsuren
Researcher, Public Health Laboratory, Public Health Institute

Kh.Mandakhtsetsen
Researcher, Biotechnological Research, Training and Production Center, Public Health Institute

L.Lkhagva
Officer,, Biotechnological Research, Training and Production Center, PHI

B.Nyamtssetseg
Officer, Health Agency of Bayanzurkh district

D.Khishigbuyan, MSc
Researcher, Public Health Laboratory, Public Health Institute

Ch.Batkhuu, MD
Physician, State Clinical Hospital II

B.Sodnomtseren
MSc, Public Health Laboratories, Public Health Institute

D.Otgonbayar
Researcher, Ecology & Hygiene Center, Public Health Institute

L.Altantuya
Officer, Biotechnological Research, Training and Production Center, PHI

D.Oyunjargal
Officer, Public health worker, Bayanzurkh District Health Center

A.Ariunzul
Professional officer, National Cancer Center

Statistical analysis team

Melanie Cowan, MPH
Technical Officer, Surveillance Dept. of Chronic Diseases and Health Promotion, WHO

D.Otgontuya, MD, MSc
Researcher, Nutrition Research Center, Public Health Institute

O.Altansukh
Programmist, Research, Training and Information Center, PHI
S.Tsegmed, MSc
Researcher, Hygiene and Human Ecology Center, Public Health Institute

Report compiled by:

D.Otgontuya, MD, MSc
Researcher, Nutrition Research Center, Public Health Institute
I. Bolormaa, PhD
Scientific Secretary, Public Health Institute
P.Enkhtuya, PhD
Deputy Director, Public Health Institute
U.Tserendolgor, MD, ScD
Researcher, Nutrition Research Center, Public Health Institute
J.Tungalag
Chairman, Section of the Mongolian Physical Education and Sports Authority
Kh. Bakytjan
Senior officer, Mongolian Physical Education and Sports Authority
Ts. Enkhjargal, ScD (Biol), Academician
Director of Public Health Laboratory, Public Health Institute
D. Narantuya, MD, PhD
Head, Cardiology Department, Medical School, Mongolian Health Sciences University
N.Bolormaa, MD, MSc
Researcher, Nutrition Research Center, Public Health Institute
D.Oyunchimeg, MD, MSc
Head, Research and Training Unit, National Cancer Research Center
Kh.Altaisaikhan, MD, PhD, Professor
Deputy President, Mongolian Health Sciences University
J.Erdenezul, MD, PhD
Lecturer, Mongolian Health Sciences University
Sh. Nansalmaa, MD
Professional officer, Injury Rehabilitation Clinical Center
B.Badamtsestseg
Director, Child Rights Protection Center
B.Sukh-Ochir
Executive director, Association of Professional Social Workers
N. Narantuya, MD, MSc
Head, Management and Coordination Unit, Public Health Institute
F Maximillian de Courten, Professor
Copenhagen School of Global Health, University of Copenhagen, Denmark
Cherian Varghese, PhD
Technical Officer, Noncommunicable diseases, WPRO, WHO

Translated by:

S.Tugsdelger, MD, MPH
Director, Public Health Care Policy Implementation and Coordination Department, MOH

Editors:

L.Lkhagva, MD, PhD, DSc, Academician, Professor
Director, Drug Research Institute

G. Tsetsegdary, MD, PhD
Senior Officer, Public Health Care Policy Implementation and Coordination Department, MOH

P. Enkhtuya, PhD
Deputy Director, Public Health Institute

Note: Any comments/suggestion related to this survey will be invaluable in our work and be appreciated to be considered in the future surveys. Therefore, please feel free to send your comments/suggestions to the following address.

Address:

Public Health Institute of the Ministry of Health,
Peace Avenue-17, Ulaanbaatar-210349

E-mail: , pubhealth@magicnet.mn
jobileg@magicnet.mn

EXECUTIVE SUMMARY

The current Survey on the Prevalence of Noncommunicable Diseases (NCD) and Injury Risk Factors was conducted to establish the midterm evaluation of the National Program on NCD Prevention and Control, and to establish baseline data for a health project funded by the Millennium Challenge Account (MCA).

The cross-sectional survey used WHO STEPS survey methodology adapted to the country's specifics. The goal of the survey was to determine the prevalence of risk factors for NCD and injuries using WHO-approved methods, and to inform on NCD and injury control activities. The survey had the following objectives:

- To determine the prevalence of common modifiable risk factors for NCDs and major causes of injuries
- To determine the prevalence of hypertension, overweight, obesity, hypercholesterolemia and hyperglycemia
- To compare the current prevalence of NCD risk factors to that identified in the previous STEPS survey

A total of 5,638 randomly selected 15-64 year-old Mongolian residents of both sexes from 36 soums of 20 aimags and 6 districts of Ulaanbaatar city participated in the survey. The survey data was collected between October 8th and November 2nd 2009 in selected aimags, and between 10th and 25th of December, 2009 in Ulaanbaatar city.

The survey data was fully collected using small handheld computers (PDAs). Because the data was comprised of only a sample of the target population, it was necessary to weight the data. Thus, sample weighting and adjustments to correct the differences in the age-sex distribution of the sample compared to the target population were performed. Data analysis was conducted using EPI INFO version 3.5.1 using appropriate methods for the complex sample design of the survey. The **prevalence and measures of central tendency** of NCD risk factors were estimated. Outcome measures (prevalence and mean variance) and differences between groups (age, gender and urban/rural groups) were calculated with **95% confidence intervals (95% CI)**.

The survey results showed that in Mongolia 27.6% of the population smoke whereas 48.0% of men and 6.9% of women were current smokers. The vast majority of smokers (87.9%) smoke daily. Nearly one in two persons (42.9%) was exposed to second-hand smoking at home and over a third (35.6%) of the target population was exposed at work on at least one day in the past 7 days, respectively.

Current drinking or consumption of alcohol in the past 30 days was reported by 38.6% of all respondents or 49.8% of men and 27.2% of women. On a drinking occasion, the current drinkers consumed 7.7 standard drinks where on average it was 9.2 for men and 5.1 for women. The prevalence of binge drinking (more than 5 drinks on one occasion for men, or more than 4 drinks for women) was 39.7% in men and 15.1% in women, and was thus more than twice as common in males than females.

Average daily servings of fruits and vegetables were 1.8, which was 3.2 servings less than the WHO recommendation. 92.3% of the population consumed less than 5 servings of fruits and vegetables daily. Fruit and vegetable consumption in rural areas was significantly lower than in the urban areas. Daily salt intake was 7.3 grams per person with rural residents using on average 1.6 more grams of salt compared to their urban counterparts.

7.5% of the population were not meeting the minimum recommendation for physical activity, which

meant nearly 1 in 10 persons was at increased risk for physical inactivity. Urban men were 4 times more likely to fall into the category of low physical activity than rural men, and urban women were twice as likely compared to their rural counterparts. Median duration of time spent in high or moderate levels of physical activity at work was 214.2 minutes, during transport 30.0 minutes and in recreational settings 51.4 minutes, respectively.

The mean BMI of study population was 24.6 kg/m² and it was 24.3 kg/m² in men and 24.9 kg/m² in women, respectively. According to BMI risk assessment, 39.8% of the population was overweight and 12.5% was obese. Prevalence of overweight and obesity tended to increase with age, and the proportion of overweight or obese women in all age groups was higher compared to their male counterparts. Prevalence of central obesity (Men: WC≥90cm and Women: WC≥80cm) was 29.1% in men and 55.7% in women.

Prevalence of high risk cholesterol category or hypercholesterolemia in the population was 25.0 % and prevalence of hypercholesterolemia was 8.5%. Prevalence of high risk triglyceride category or hypertriglyceridemia in the population was 22.4% with significantly higher prevalence in men (29.5%) compared to women (15.4%). The proportion of the population at risk and with increased blood LDL was 42.4% and 20.2%, respectively. The proportion of women at risk or with decreased blood HDL was 2.7 times higher compared to men.

Mean systolic blood pressure (SBP) was 129.8 mmHg in men and 121.4 mmHg in their female counterparts, and it was significantly higher in men than in women. Prevalence of hypertension was 27.3%. Men had significantly higher prevalence of hypertension compared to women. There was no significant difference in the prevalence of hypertension between urban and rural populations.

Mean fasting blood glucose in the study population was 4.7 mmol/L and there was no difference between men and women. However, the urban population was more likely to have higher mean fasting glucose than the rural population. Prevalence of impaired fasting glycaemia (IFG) was 9.4% in the study population and 11.5% in males, 7.5% in females. Prevalence of diabetes was 6.5% in the study population, 8.9% in males, 4.1% in females.

Cervical cancer screening coverage was very low with only 5.2% of female survey respondents reporting VIA and 11.4% - Pap smear testing. Women aged 35-54 had the highest cervical cancer screening coverage, which was consistent with the fact that cervical cancer incidence is highest in this age group. Breast cancer screening was also insufficient with 1 in 3 surveyed women reporting breast self-examination, and only 3.2 and 1.7% undergoing clinical breast examination and mammography, respectively. Cervical and breast cancer screening coverage was similar in urban and rural settings.

Prevalence of road traffic injury in the study population was 4.0%. One in four (22.7%) traffic injuries was due to speeding, and nearly 1 in 10 (9.1%) due to drunk driving. Roughly eight in ten drivers and passengers (83.6%) did not use a seatbelt regularly. Prevalence of violent injury was 3.5% in the study population and 4.4% in men and 2.5% in women. Men more likely to fell victim to interpersonal violence, which is mainly because men tended to use physical force in resolving conflicts. On the other hand, among those females involved in violence incidence, 30.4% reported being abused by family or intimate partners and 24.2% were abused by friends. Of the survey respondents, 62.3% were abused as a child.

Results of the comparative study (STEPS 2005 vs. 2009) indicated that the prevalence of smoking in the adult population has stayed about the same. Furthermore, women start smoking on average at a younger age. With regards to alcohol consumption, although the percentage drinking alcohol in the past 12 months has decreased, the frequency of drinking shows a slight, but not statistically significant, increasing trend.

The comparative analysis revealed that over the past 4 years the average daily servings of fruit (0.8 vs. 0.4) and vegetables (1.6 vs. 1.3) consumed has decreased significantly. At the same time, average daily salt intake decreased. Although there was an increase in the median time spent in physical activity on average per day (181.4 mins vs. 347.1 mins) and in the percentage with high level of physical activity (70.4% vs. 81.8%), no changes were observed in the percentage of the population who were not fulfilling the minimum recommendation for physical activity.

The mean body mass index of the adult population increased as well as the prevalence of obesity (by 2.7%), and overweight and obesity (by 8.3%). Mean blood cholesterol and the percentage with or at risk of increased total cholesterol were remained stable.

Although the prevalence of hypertension remained unchanged, use of medication for treatment of hypertension and its responsiveness to anti-hypertensive drugs worsened. Mean fasting blood glucose in the adult population and percentage of people with raised blood glucose or on medication for diabetes remained stable.

According to the WHO STEPS methodology, combined exposure of 5 common risk factors such as current daily smokers, less than 5 servings of fruits & vegetables per day, low level of activity, overweight (BMI ≥ 25 kg/m²), raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication) was used to determine population risk for NCDs.

In conclusion, the summary of combined NCD risk factors demonstrates that **1 in 5** (26.4%) Mongolian adults and **1 in 2** (53.8%) **adults of 45-64 years of age have three or more common** modifiable NCD risk factors. **Twice as many young men** (aged 15-44 years) than women (26.0% vs. 12.4%) have 3 or more risk factors.

Mongolian STEPS Survey On The Prevalence Of Noncommunicable Disease And Injury Risk Factors-2009

Fact Sheet

The STEPS survey of chronic disease risk factors in Mongolia carried out from October to December 2009. Mongolia carried out Step 1, Step 2 and Step 3. Socio demographic and behavioural information was collected in Step 1. Physical measurements such as height, weight and blood pressure were collected in Step 2. Biochemical measurements were collected to assess blood glucose and cholesterol levels in Step 3. The STEPS survey in Mongolia was a population-based survey of adults aged 15-64. A multi-stage cluster sample design was used to produce representative data for that age range in Mongolia. A total of 5438 adults participated in the Mongolia STEPS survey. The overall response rate was 95%. A repeat survey is planned to be conducted in 2013.

Results for adults aged 15-64 years (incl. 95% CI)	Both Sexes	Males	Females
Step 1 Tobacco Use			
Percentage who currently smoke tobacco	27.6% (26.0 – 29.4)	48.0% (44.5 – 51.5)	6.9% (5.2 – 8.5)
Percentage who currently smoke tobacco daily	24.3% (22.9 – 25.7)	43.0% (39.9 – 46.0)	5.2% (3.8 – 6.7)
<i>For those who smoke tobacco daily</i>			
Average age started smoking (years)	19.2 (18.7-19.6)	18.7 (18.2-19.2)	23.2 (21.3-25.1)
Percentage of daily smokers smoking manufactured cigarettes	84.6% (78.8-90.3)	84.3% (78.3-90.2)	86.9% (72.7-100.0)
Mean number of manufactured cigarettes smoked per day (by smokers of manufactured cigarettes)	8.7 (7.8-9.6)	8.9 (7.9-9.8)	7.0 (5.6-8.4)
Step 1 Alcohol Consumption			
Percentage who are lifetime abstainers	34.2% (28.7 – 39.6)	24.0% (19.3 – 28.8)	44.5% (38.1 – 51.0)
Percentage who are past 12 month abstainers	7.4% (5.7 – 9.1)	6.0% (4.4 – 7.7)	8.8% (6.6 – 11.0)
Percentage who currently drink (drank alcohol in the past 30 days)	38.6% (34.6 – 42.7)	49.8% (44.7 – 54.8)	27.2% (23.0 – 31.3)
Percentage who engage in heavy episodic drinking (men who had 5 or more / women who had 4 or more drinks on any day in the past 30 days)	--	39.7% (35.0 – 44.4)	15.1% (12.4 – 17.7)
Step 1 Fruit and Vegetable Consumption (in a typical week)			
Mean number of days fruit consumed	1.2 (1.0-1.3)	1.0 (0.7-1.2)	1.4 (1.2-1.6)
Mean number of servings of fruit consumed on average per day	0.4 (0.3-0.5)	0.3 (0.2-0.5)	0.5 (0.4-0.6)
Mean number of days vegetables consumed	4.8 (4.3-5.3)	4.6 (4.1-5.2)	4.9 (4.5-5.4)
Mean number of servings of vegetables consumed on average per day	1.4 (1.2-1.7)	1.4 (1.1-1.6)	1.5 (1.3-1.8)
Percentage who ate less than 5 servings of fruit and/or vegetables on average per day	92.3% (88.7-95.8)	93.4% (89.9-96.9)	91.1% (87.4-94.8)
Step 1 Physical Activity			
Percentage with low levels of activity (defined as < 600 MET-minutes per week)*	7.5% (5.2-9.9)	7.4% (4.7-10.1)	7.7% (5.3-10.1)
Percentage with high levels of activity (defined as ≥ 3000 MET-minutes per week)*	80.8% (75.7-85.8)	82.5% (77.7-87.4)	78.9% (72.9-85.0)
Median time spent in physical activity on average per day (minutes) (presented with inter-quartile range)	342.9 (158.6-510.0)	347.1 (171.4-501.4)	337.1 (141.4-518.6)
Percentage not engaging in vigorous activity	48.5% (43.3-53.6)	42.9% (37.3-48.4)	54.2% (48.5-59.8)

Results for adults aged 15-64 years (incl. 95% CI)	Both Sexes	Males	Females
Step 2 Physical Measurements			
Mean body mass index - BMI (kg/m ²)	24.6 (24.3-24.9)	24.3 (24.0-24.7)	24.9 (24.6-25.2)
Percentage who are overweight (BMI ≥ 25 kg/m ²)	39.8% (37.1-42.5)	37.0% (33.0-41.0)	42.7% (39.9-45.5)
Percentage who are obese (BMI ≥ 30 kg/m ²)	12.5% (10.8-14.3)	11.1% (8.7-13.4)	14.1% (12.1-16.0)
Average waist circumference (cm)	--	83.2 (82.2-84.3)	82.6 (81.7-83.5)
Mean systolic blood pressure - SBP (mmHg), including those currently on medication for raised BP	125.6 (124.3-126.9)	129.8 (128.4-131.1)	121.4 (120.0-122.8)
Mean diastolic blood pressure - DBP (mmHg) , including those currently on medication for raised BP	78.9 (78.1-79.6)	79.6 (78.7-80.5)	78.1 (77.3-78.9)
Percentage with raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP)	27.3% (24.9-29.8)	31.4% (28.2-34.6)	23.2% (20.7-25.7)
Percentage with raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg) who are not currently on medication for raised BP	61.1% (56.4-65.8)	71.9% (66.6-77.2)	46.0% (40.8-51.1)
Step 3 Biochemical Measurement			
Mean fasting blood glucose, including those currently on medication for raised blood glucose (mmol/L)	4.7 (4.6-4.9)	4.8 (4.6-5.0)	4.7 (4.5-4.8)
Percentage with impaired fasting glycaemia as defined below: (capillary whole blood value ≥5.6 mmol/L (100 mg/dl) and <6.1 mmol/L (110 mg/dl))	9.4% (7.4-11.5)	11.5% (8.5-14.5)	7.5% (4.5-10.4)
Percentage with raised fasting blood glucose as defined below or currently on medication for raised blood glucose (capillary whole blood value ≥ 6.1 mmol/L (110 mg/dl))	6.5% (4.5-8.4)	8.9% (5.0-12.7)	4.1% (2.1-6.2)
Mean total blood cholesterol, including those currently on medication for raised cholesterol (mmol/L)	4.4 (4.1-4.6)	4.5 (4.2-4.7)	4.2 (4.0-4.4)
Percentage with raised total cholesterol (≥ 5.0 mmol/L or ≥ 190 mg/dl or currently on medication for raised cholesterol)	25.0% (19.4-30.5)	27.4% (20.9-33.9)	22.5% (16.8-28.2)
Summary of combined risk factors			
<ul style="list-style-type: none"> · current daily smokers · less than 5 servings of fruits & vegetables per day · low level of activity 		<ul style="list-style-type: none"> · overweight (BMI ≥ 25 kg/m²) · raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP) 	
Percentage with <i>none</i> of the above risk factors	3.0% (1.7-4.2)	1.9% (0.8-3.1)	4.0% (2.4-5.6)
Percentage with <i>three or more</i> of the above risk factors, aged 15 to 44 years	19.4% (17.3-21.5)	26.0% (23.1-28.8)	12.4% (9.9-14.8)
Percentage with <i>three or more</i> of the above risk factors, aged 45 to 64 years	53.8% (49.4-58.1)	61.4% (55.4-67.3)	46.1% (41.7-50.5)
Percentage with <i>three or more</i> of the above risk factors, aged 15 to 64 years	26.4% (24.1-28.7)	33.1% (30.3-35.9)	19.4% (16.9-21.9)

CHAPTER I
RATIONALE

Noncommunicable diseases worldwide

According to the World Health Organization (WHO) noncommunicable diseases (NCDs) such as cardiovascular diseases (CVDs), diabetes, chronic pulmonary diseases and cancers accounted for 60 percent of population mortality globally and 80 percent of mortality in low and middle income countries in 2008 [3].

The WHO estimates that mortality due to smoking could increase twice in low and middle income countries by 2030, reaching 6.8 million deaths, if no effective preventive measures are taken. Similarly, cancer mortality could increase from 7.4 million deaths in 2004 to 11.8 in 2030.

However, the experience of a number of countries demonstrates that NCDs can be prevented effectively. There is a growing scientific evidence that if we succeed in controlling common modifiable risk factors leading to NCDs, we can prevent some 80% of cardiovascular disease, 90% of type II diabetes as well as 1/3 of cancers [9].

Noncommunicable diseases in Mongolia

Mongolia has been undergoing an epidemiological transition since 1990s. As a result, diseases related to lifestyle and health behavior, such as cardiovascular diseases, diabetes, cancer and injuries are growing steadily and have become the leading causes of population mortality.

In 2008 the following diseases were the leading causes of death in Mongolia:

- Diseases of circulatory system - 20.54 per 10,000 population
- Neoplasms - 11.80 per 10,000 population
- Injury, poisoning and certain other consequences of external causes - 9.33 per 10,000 population
- Diseases of digestive system - 5.27 per 10,000 population
- Perinatal conditions - 2.42 per 10,000 population.

Diseases of circulatory system are the leading cause of population morbidity and mortality, and were accounted for every third death in 2008. According to official health statistics, mortality due to the diseases of circulatory system is 22.02 and 18.76 per 10,000 males and females, respectively [1].

Cervical cancer is the second most common cancer diagnosed in women in Mongolia. Between 2000 and 2008 the prevalence of cervical cancer increased from 38.8 to 68.4, the incidence from 6.6 to 15.5, and mortality from 3.4 to 4.0 per 100,000. Until recently, breast cancer was rare in Mongolia. However, its incidence is growing steadily, and currently it is the sixth most common cancer. Between 2000 and 2008 the prevalence of breast cancer rose from 12.5 to 20.6, the incidence from 2.5 to 3.6, and mortality from 0.8 to 1.3 per 100,000.

Injury

More than 5 million people annually or 16,000 people daily lose their lives due to injuries worldwide. Thousands more are disabled. Injury mortality has increased dramatically in recent years in Mongolia. It was the fifth leading cause of population mortality in 1990, and has risen to the third position since 2000. The main causes of injury mortality are traffic injuries, suicide, homicide and other injuries, which account for 19.7, 16.3, 10.4 and 46.9 percent of mortality, respectively[13].

Violence

Studies have been conducted that looked into the forms, prevalence and consequences of gender-

based violence, child abuse and violence against the elderly in Mongolia. These studies demonstrate that 1 in every 3 women experience some form of violence, 1 in every 10 women is battered, 1 in every 5 families has abusive relations, half of all children are abused, and 1 in every 4 elderly is a victim of family violence. A number of victims of family violence with moderate to severe injuries registered with a forensic medicine unit has increased 2.5 times over the last few years [12].

Prevalence of common modifiable risk factors for NCDs

According to the Mongolian STEPS Survey on the Prevalence of NCD Risk Factors (2005) 24.2 percent of the population were daily smokers, and almost three quarters (72.5%) of the respondents consumed less than 5 servings of fruits and vegetables daily. The prevalence of people who engaged in low levels of physical activity was 23.1 percent or one in five. The survey indicated that 31.6% of the population were overweight or obese (21.8% overweight and 9.8 % obese). The prevalence of high blood pressure was 28.1 percent and the prevalence of diabetes was 8.2%.

The current survey was undertaken to identify the prevalence of risk factors for NCDs and injuries, to inform the evaluation of the National Program on NCD Prevention and Control, and to establish baseline data for a health project funded by the Millennium Challenge Account (MCA).

SURVEY GOAL

The goal of the survey was to determine the prevalence of risk factors for NCDs and injuries using WHO-approved methods, and to inform on NCD and injury control activities.

SURVEY OBJECTIVES

- To determine the prevalence of common modifiable risk factors for NCDs and major causes of injuries;
- To determine the prevalence of hypertension, overweight, obesity, hypercholesterolemia and hyperglycemia, and
- To compare the current prevalence of NCD risk factors to that identified in the previous STEPS survey.

SCIENTIFIC NOVELTY AND IMPORTANCE OF THE SURVEY

- The survey will inform the evaluation of the National Program on NCD Prevention and Control, and will establish baseline data for a health project funded by the Millennium Challenge Account (MCA).
- The use of internationally validated survey methods adapted to the country specifics will contribute to the development of health research and will enable international comparisons.
- The survey uses WHO STEPS survey methodology, and advanced software, laboratory tests and statistical analysis methods, which will generate reliable information for policy-making and program planning.

CHAPTER II
SURVEY METHODOLOGY

1. Survey scope

The current Survey on the Prevalence of NCD and Injury Risk Factors is conducted to inform the mid-term evaluation of the National Program on NCD Prevention and Control, and to establish baseline data for a health project funded by the Millennium Challenge Account.

The survey used WHO STEPS survey methodology adapted to the country specifics, and was conducted in the following three steps.

1. STEP 1: Questionnaire survey – information on smoking, alcohol consumption, fruit and vegetable consumption, physical activity, and history of hypertension, diabetes, screening for cervical and breast cancer, injuries and violence, and their causes was collected by using a questionnaire.

2. STEP 2: Physiological measurements – overweight and obesity (body weight and height, waist and hip circumference, and body fat), blood pressure, and physical fitness were measured using specific tests and devices.

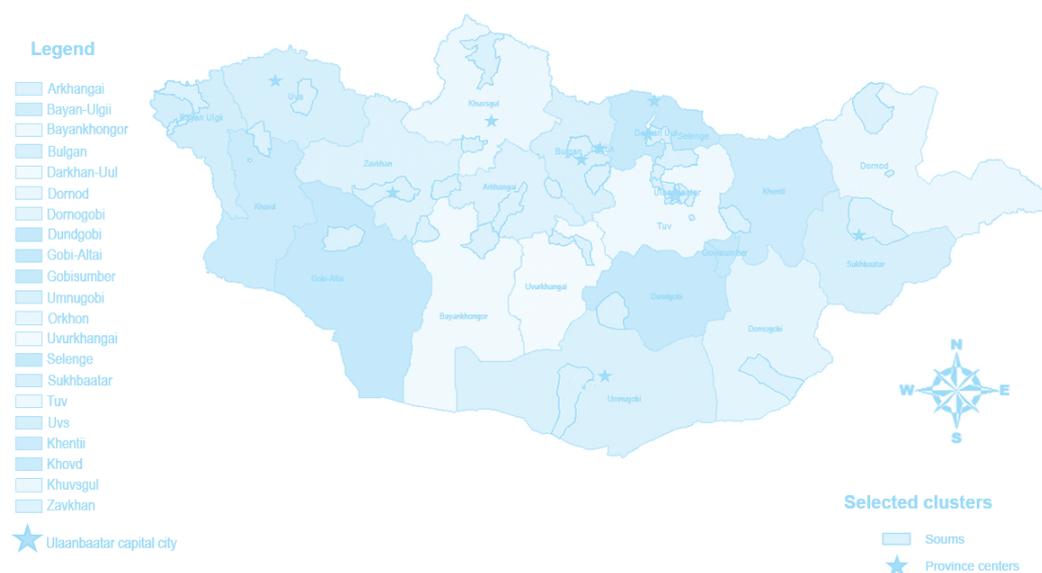
3. STEP 3: Laboratory analysis – blood glucose, cholesterol and triglycerides were measured in peripheral (capillary) blood at data collection sites using dry chemical methods, while LDL and HDL were measured in blood serum using wet chemical methods.

2. Survey population and sampling

A total of 5,438 randomly selected 15-64 year-old Mongolian residents of both sexes from 36 soums of 20 aimags and 24 khoroods of 6 districts of Ulaanbaatar city participated in the survey (Figure 1).

All participants completed STEPS 1 and 2 of the survey except pregnant women, persons with disabilities and bedridden patients, for whom physiological measurements were not performed. Every third person aged 25-64 randomly selected into the study completed STEP 3 or biochemical testing. Response rate of the survey was 95% in both STEP1, 2 and STEP3.

Figure 1. Survey frame, selected cluster



For calculating the survey sample size, the prevalence of overweight and obesity (P=32.6%) identified during the previous (2005) round of STEP survey was used, assuming 95% confidence interval (Z=1.96), 5% acceptable margin of error, complex sampling design effect coefficient of 1.5, and equal representation of genders in each age group (5 age groups for each gender or a total of 10 groups). This gave a sample size of 4,840 persons, which was further increased by 15% (5,694) to account for contingencies such as non-response or recording error (Formula 1).

Sample size calculation formula:

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

$$n = 1.96^2 \frac{0.3(1-0.3)}{0.0025} = 322.69$$

$$2. n \times \text{design effect} \times \text{age-gender factor} = 322.7 \times 1.5 \times 10 = 4840$$

$$3. n / \text{probability of non-response} = 4840 / 0.85 = 5694$$

The survey was designed to cover all geographical areas of Mongolia, and a four-stage cluster sampling process was carried out to randomly select participants from the target population. Given the urban vs. rural differences in lifestyle and disease status, the target population was stratified into urban and rural areas and the sample was drawn proportionally from each based on the target population in each area. Thus, out of the 60 total clusters selected, 28 were urban and 32 were rural. Ulaanbaatar city, Darkhan-Uul and Orkhon aimags represented urban areas, while the rest of aimags and soums represented rural areas (Table 1).

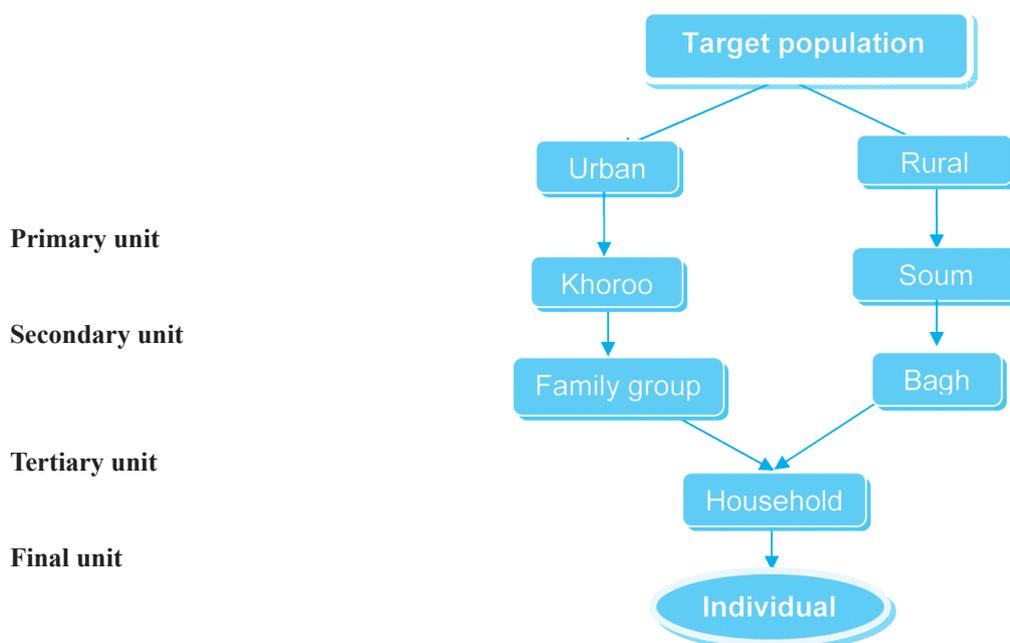
Table 1. Number of urban and rural clusters

Setting	Target population	As % of total population	Survey population	Number of clusters
Urban	831802	0.48	2733	28
Rural	919417	0.52	2961	32
Total	1751219	1.00	5694	60

Ninety-five participants were selected from each cluster. In the urban areas, khoros were selected, then family groups, then households. In rural areas, soums were selected, then baghs then households. How this selection was proceeded is explained in the following paragraph (Figure 2).

A total of 28 khoros were selected from a list of all khoros (n=173) in the urban area using probability proportional to size sampling, where the size was 25.5% of the total target population of 851,062 persons aged 15-64 years old. From each selected khoroo, three of the family groups were selected using probability proportional to its total number of households. Within each of the three family groups, 95 households were selected using simple random sampling from updated household registries.

Figure 2. Multi-stage cluster sampling units



For the rural area, 32 of the soums were selected from a list of all soums ($n=324$) using probability proportional to size sampling, where the size was 23.1% of the total target population of 919,417 persons aged 15-64 years old. From each selected soum, 2 baghs were selected using probability proportional to its total number of households. Within each selected baghs, 95 of the households were selected using simple random sampling from updated household registries (Table 2).

From each selected household in urban and rural areas, only one person aged 15-64 years was selected using Kish Method as the last step.

Data collection period. The survey data was collected between October 8th and November 2nd in aimags, and between 10th and 25th of December, 2009 in Ulaanbaatar city.

Training of field researchers in survey methodology. A seminar on the STEPS Survey on the Prevalence of NCD and Injury Risk Factors was conducted by the Public Health Institute in collaboration with the Ministry of Health, WHO and MCA-supported Health Project on 15th September, 2009. The seminar was attended by more than 50 stakeholders including Ms. Leanne Riley, STEPS Team Leader, WHO HQ, members of the survey coordinating committee, representatives from health research, training, service and sports organizations, international donors and civil society.

Table 2. Selected clusters and survey population

	Cities/Aimags	Number of Clusters	Proportion of participants aged 15-64 years (N, %)
Urban	Ulaanbaatar	24	2176 (40.0)
	Darkhan	2	180 (3.3)
	Erdenet	2	190 (3.5)
	Total	28	2546 (46.8)
Rural	Arkhangai	3	285 (5.2)
	Bayan-Ulgii	1	95 (1.7)
	Bayankhongor	2	190 (3.5)
	Bulgan	2	180 (3.3)
	Dornogobi	1	77 (1.4)
	Dornod	2	184 (3.4)
	Dundgobi	1	82 (1.5)
	Zavkhan	2	188 (3.5)
	Uvurkhangai	2	180 (3.3)
	Umnugobi	2	151 (2.8)
	Sukhbaatar	1	91 (1.7)
	Selenge	2	177 (3.3)
	Tuv	2	178 (3.3)
	Uvs	2	183 (3.4)
	Khovd	2	184 (3.4)
	Khuvsgul	3	277 (5.1)
	Khentii	1	95 (1.7)
	Gobi-Altai	1	95 (1.7)
Total	32	2892 (53.2)	

A training of 50 national researchers was conducted by the survey technical working group in collaboration with the WHO experts on September 16-21, 2009. On the first two days the trainees were exposed to the methods of sampling and obtaining informed consent from selected survey respondents. The core of the training was focused on a survey questionnaire and skills to use Personal Digital Assistants (PDAs) for data entry. The last two days of the training consisted of interactive sessions to introduce data collection methods for Steps 1, 2 and 3 of the survey.

Pilot test. The trained field researchers carried out a pre-testing comprised of all three steps of the survey in two districts of Ulaanbaatar city. Over 80 people participated in the pre-testing. The pre-testing started with the data collection team leaders selecting family groups, households and individuals according to the sampling methodology, and disseminating information about the survey to selected individuals in collaboration with family practitioners and nurses. There were eight data collection teams with 5 researchers each. Each team collected questionnaire data from and performed physiological measurements on 9-10 individuals, and performed laboratory analysis on 3-4 individuals. The pre-testing was aimed at validating the field researchers'

skills in using survey questionnaires, performing physiological measurements and laboratory tests, and using PDAs. Based on the findings of the pre-testing, hands-on training on physiological measurements was repeated. After re-training, all researchers underwent testing in practical skills.

Data collection process

Validated questionnaires of WHO "STEPS Survey on the Prevalence of NCD Risk Factors" and "Community Survey on Injuries and Violence" were translated into Mongolian, adapted to country specifics, back translated into English, reviewed and approved by international and national consultants, and used for the survey data collection.

STEP 1: Questionnaire survey

The questionnaire was used to collect data on respondent's socio-economic status, tobacco use, alcohol consumption, fruit and vegetable consumption, physical activity, and history of hypertension, diabetes, screening for cervical and breast cancer, and injuries and violence, and their causes.

Assessing alcohol consumption: Alcohol consumption was assessed using the concept of "standard drinks". A standard drink is any drink containing 10 grams of pure alcohol (Table 3).

Researchers used a poster and a guide showing a table with standard drinks depicting 5 types of commonly consumed alcoholic beverages.

Table 3. Standard drinks guide

Alcoholic beverages	Amount	Pure alcohol content	Pure alcohol amount	Standard drinks
Vodka	1 glass / 50 ml /	40% Alc/Vol	20 g	2
Wine	1 glass / 100 ml /	12.5% Alc/Vol	12.5 g	1.3
Beer	1 bottle / can 330 ml /	4-5% Alc/Vol	15 g	1.5
Home brewed alcohol	1 cup / 100 ml /	15% Alc/Vol	15 g	1.5
Mare's milk	1 cup / 250 ml /	5% Alc/Vol	12.5 g	1.3

In the current survey respondents reporting alcohol use within the past 1 month were classified as “**current drinkers**”. Three risk categories were used to classify respondents who consumed alcohol depending on the average amount of alcohol consumed **per day**. These categories are defined in the table below (Table 4).

Table 4. Level of risk associated with alcohol consumption, by gender

<i>Units are in amount of alcohol consumed on average per day</i>			
Gender, content of pure alcohol	Category I	Category II	Category III
Male	<40 g	40-59.9 g	>60 g
Female	<20 g	20-39.9 g	>40 g

Binge drinking was defined as consuming on one occasion 5 or more standard drinks for males and 4 or more standard drinks for females.

Assessing fruit and vegetable consumption: In order to assess the diet pattern of the surveyed population, the respondents were asked about frequency of fruit and vegetable consumption, type of oil used in food, and amount of salt consumed daily. Consumption of fruits and vegetables was assessed in terms of “number of servings”, and a serving was equal to 80 g. In order to facilitate data collection, showcards were produced containing 52 photo images of servings of 21 different names of fruits belonging to 14 fruit groups, 19 different names of vegetables belonging to 11 vegetable groups (excluding potato), 11 different names of oil and fats belonging to 6 groups, and 2 types of salt. The showcards were used to collect data on fruit and vegetable consumption on a typical day. In addition, a poster with fruit and vegetable serving guide was used.

Salt consumption was assessed by asking for how many days a pack of 500 grams of salt is used in a household, and estimating average daily salt intake by dividing 500 g by a number of days and a number of members in a household. *Fat and oil intake* was assessed by asking about a type of oil most frequently used for cooking.

Assessing physical activity: Physical activity was assessed based on intensity, duration and frequency of physical activity at work, in recreational settings and during transportation using a complex set of 16 questions. Data on the number of days, hours and minutes of physical activity performed at work, transport and recreational settings for at least 10 minutes per day were collected. The complex questionnaire has an advantage of assessing not only the duration, but also the intensity of physical activity.

The median time of total physical activity per day spent for work, transport and recreational activities was measured by using the standard metabolic equivalent time, or MET. This unit is used to estimate

the amount of oxygen used by a body for a specific type of physical activity. 1 MET unit is the energy (oxygen) used by a body when one sits quietly. The levels of physical activity were classified into high, medium and low as defined below.

- High levels of physical activity
 - Vigorous-intensity activity on at least 3 days achieving a minimum of at least 1,500 MET-minutes/week OR
 - 7 or more days of any combination of walking, moderate or vigorous intensity activities achieving a minimum of at least 3,000 MET-minutes per week
- Medium levels of physical activity
 - 3 or more days of vigorous-intensity activity of at least 20 minutes per day OR
 - 5 or more days of moderate-intensity activity or walking of at least 30 minutes per day OR
 - 5 or more days of any combination of walking, moderate or vigorous intensity activities achieving a minimum of at least 600 MET-minutes per week
- Low levels of physical activity - A person not meeting any of the above mentioned criteria falls into this category. Those individuals who do not meet criteria for moderate or high and achieving at least 600 MET – minutes/week are considered to be “physically inactive”

Assessment of cervical and breast cancer screening status

Cervical cancer screening status was assessed by asking about undergoing Visual Inspection with Acetic Acid (VIA) and/or Pap smear.

- VIA is a simple test for the early detection of cervical precancerous lesions and early invasive cancer, which involves naked-eye visual inspection of the uterine cervix, after application of 5% acetic acid and/or of Lugol’s iodine.
- Pap smear or cytological examination is a medical procedure in which a sample of cells from a woman’s cervix is collected and spread on a microscope slide. The cells are examined under a microscope after staining with Papanicolaou dye. This method is important in differential diagnosis of malignant, non-malignant, precancerous and inflammatory lesions.
- Breast cancer screening status was assessed by asking about breast self-examination. Breast self-examination is a method whereby women examine their breasts monthly one week after their periods.

Assessment of violence

Interviews with questions on violence including domestic abuse were ensured with confidentiality and an environment conducive to obtain accurate data. Individuals were interviewed in the absence of a potential marital partner and other people around.

STEP 2: Physiological measurements

Body weight, height, waist circumference, body fat, blood pressure, physical fitness and body development were measured in all survey participants.

Body weight was measured with electronic scales “GIMA” produced in Italy. “GIMA” is a bioimpedance device highly suitable for research purposes, which measures body weight, body fat %, and water, muscle and bone mass with 0.1 % precision.

Body height was measured using “Somatometre-Stanley 04-116” device suitable for research

purposes, which has the capacity to measure height up to 2 meters with a precision of a millimeter difference, reading height values in centimeters.

Body mass index (BMI) was calculated as a ratio of body weight in kilograms to the square of body height in centimeters.

$$\text{BMI} = \text{Body weight (kg)} : \text{Body height (cm}^2\text{)}$$

Waist circumference was measured with “GIMA waist meter”, a non-stretch tape with mm precision. Waist circumference was measured by placing a tape measure around bare abdomen just above upper hip bone. The central obesity was defined as men with waist circumference ≥ 90 cm, and the women with ≥ 80 cm according to the suggested interim lower values for Asians by the WHO [5].

Body fat was measured with “GIMA body fat scale”. The device measures body fat % relative to the person’s age, gender, weight and height. Body fat percent was measured in all subjects. Obesity is usually defined as total body fat percentage over 25 in men and about 35 and over in women (Table 5).

Table 5. Reference values for body fat percent

Gender	Body fat percent			
	Low	Normal	High	Very high
Male	<10.0	10.0 -19.9	20.0- 24.9	25<=
Female	<20.0	20.0-29.9	30.0 – 34.9	35<=

Reference: Wardlaw,G.M., Kessel, M. (2000). Perspectives in Nutrition

Blood pressure measurement: Blood pressure was measured three times on the right arm of the survey participants in a sitting position using OMRON Model M5 automatic blood pressure monitor. Mean of three measurements was taken for analysis of blood pressure. The measurements were taken after the participant had rested for 5 minutes. Each measurement was done with 3 minutes resting between the measurements.

Percentage of raised blood pressure was defined as follows;

- SBP ≥ 140 and /or DBP ≥ 90 mmHg, or currently on medication for raised blood pressure

Percentage of respondents with treated and/or controlled of raised blood pressure among those with raised blood pressure (SBP ≥ 140 and/or DBP ≥ 90 mmHg) or currently on medication for raised blood pressure was categorized as follows;

- % On medication and SBP<140 and DBP<90
- % On medication and SBP ≥ 140 and/orDBP ≥ 90
- % Not on medication and SBP ≥ 140 and/orDBP ≥ 90

Assessment of physical fitness and body development: One in every three survey participants aged 25-64 years were selected to undergo fitness test, which assessed physical fitness by using 5 quality indicators such as strength, speed, flexibility, endurance and balance. The performance criteria in each indicator are different for men and women.

- Strength was measured as a number of push-ups per minute.
- Speed was measured using 10 sec sprint test.
- Flexibility was measured using sit and reach test.
- Balance was measured as a duration, for which a person maintained balance standing on a left leg with a right knee raised, arms sideward, and eyes shut
- Endurance was measured as the duration of exhalation after deep inhalation.

Participants were scored in each test and sum of the scores was categorized according to the table below for a final assessment .

Table 6. Category for fitness test assessment

Age group	A	B	C	D	F
15-24	>25	21-24	17-20	13-16	<12
25-34	>24	20-23	16-19	12-15	<11
35-44	>21	17-20	13-16	9-12	<8
45-54	>17	12-16	8-11	4-7	<3
55-64	>15	11-14	6-13	2-5	<1

STEP 3: Laboratory analysis

Laboratory analysis included testing for *blood glucose, cholesterol, triglycerides, LDL and HDL*. Concentrations of glucose, cholesterol and triglycerides were measured in peripheral (capillary) blood at the data collection site with dry chemical reagent strips using Accutrend GCT (Glucose, Cholesterol, Triglycerides) equipment. Data collection in late autumn resulted in overcooling of the equipment, which jeopardized the sensitivity of the test and required re-validation of the measurements. Re-validation of cholesterol and triglyceride measurements was done with semi-automatic analyzer “Humalyzer 2000” using colorimeter. Validated results were used in the final report.

Low density lipoprotein (LDL) and high density lipoprotein (HDL) content was measured in serum with semi-automatic analyzer “Humalyzer 2000” using colorimeter. For testing purposes 7 ml of fasting blood was collected, centrifuged to separate serum, and the tubes with serum were labeled and transported in frozen condition. Laboratory analysis results were assessed according to the category in table 7 [10].

Table 7. Biochemical indicators (WHO, 2005)

Biochemical indicators	Normal	At risk	Increased
Glucose	<5.6 mmol/L	≥5.6 mmol/L & <6.1 mmol/L	≥6.1 mmol/L or using glucose-lowering drugs
Cholesterol	<5.0 mmol/L	≥ 5.0 mmol/L & <6.2 mmol/L	≥ 6.2 mmol/L or using cholesterol-lowering drugs
Triglycerides	<1.7 mmol/L	≥ 1.7 mmol/L & < 2 mmol/L	≥2.0 mmol/L
LDL	<3 mmol/L	≥ 3 mmol/L & <4.15 mmol/L	≥4.15 mmol/L
HDL	HDL levels decreased M: >1.03 mmol/L; F: >1.29 mmol/L		

Survey data collection in Ulaanbaatar and aimags was done by 7 teams with 5 researchers in each team. Survey teams consisted of a team leader, two interviewers, one person to obtain physical measurements, one laboratory technician and two local assistants. Thus, teams often consisted of 7-8 people each. About 2-3 days prior to the interview process, an information leaflet on the survey goal and objectives, and consent forms were distributed to the members of randomly selected households. Survey participants were invited to selected FGPs in urban areas and soum/bagh hospitals in rural areas for data collection. Those unable to visit selected sites were reached at home for data collection purposes especially in remote rural areas.

Monitoring of data collection. Three monitoring teams comprised of two representatives from MOH and PHI had been assigned a task of monitoring the survey data collection in accordance with the Monitoring Guidelines approved by State Secretary of the MOH. The teams monitored the survey data collection process in the field, and provided technical and logistics support to data collection teams. Data collection process in Ulaanbaatar city was monitored by two teams comprised of representatives from the City Health Authority, Deputy Directors of District Health Units and the survey coordinators in accordance with the Monitoring Guidelines approved by Director of the Public Health Institute.

Data entry and cleaning: The survey data was fully collected using PDAs. Therefore, data from 35 PDAs used by data collection teams was downloaded directly into a database using the eSTEPS data management software; thus, completing the data entry process. The data copied into eSTEPS questionnaire designer software was converted into EpiData software; thus, allowing an easy conversion of data into other statistical analysis software including SPSS. Each survey respondent had a unique identifier comprised of cluster, family group, bagh and individual ID numbers. The accuracy of coding was established within a week by elucidating any overlaps, omissions and/or wrong coding. Next, the survey data was compiled into a single file, and the accuracy of recording respondents' age and gender, and other variables was established within a week using range and logical checking. Finally, data checking was also performed by using the analysis code provided by WHO HQ, which includes code to check the data prior to every analysis performed.

Weighting of data: Because the data is comprised of only a sample of the target population, it was necessary to weight the data. Thus, sample weighting and adjustments to correct differences in the age-sex distribution of the sample versus the target population were performed. The sample weight for each case in the survey sample accounts for the number of cases it represents in the sampling frame, based on the sample selection procedure. The product of the sample weight and the population adjustment weight was used in all weighted analyses.

Data analysis

Statistical analysis of the survey data was performed by statistical analysis team of PHI under the guidance of Ms. Melanie Cowan, Technical Officer, Surveillance and Population-Based Prevention Department of Chronic Diseases and Health Promotion, WHO. Data analysis was performed using Epi Info version 3.5.1 using appropriate methods for the complex sample design of the survey.

The **prevalence** and **measures of central tendency** of NCD risk factors were estimated. Outcome measures (prevalence and mean variance) and differences between groups (age, gender and urban/rural groups) were calculated with **95% confidence intervals (95% CI)**. Sampling error, which could potentially affect the accuracy of the results of the current survey, was measured by the **standard error** of variables. Margins of error in a prevalence and measures of central tendency are represented by numeric values of lower and upper limits of 95% confidence interval.

Results of the survey on the prevalence of NCD and injury risk factors such as prevalence and measures of central tendency could be considered representative of the survey population since they were adjusted using population and sample weights.

Analysis of comparative study

The first Mongolian STEPS Survey on the Prevalence of NCD Risk Factors was conducted in 2005, and established baseline of NCD risk factors using only an adjustment to the 2005 population. The current survey employed both a population adjustment and sample weighting; thus, improving accuracy and representativeness of the survey. However, this difference in data analysis between the two surveys compromises their direct comparability. Therefore, primary data for 2005 and 2009 surveys were adjusted for age group and gender to the 2008 population to allow direct comparison.

CHAPTER III
SURVEY RESULTS

3.1 DEMOGRAPHIC INDICATORS

The survey collected information on demographic indicators such as age, gender, education, ethnicity, occupation, household income and marital status of respondents.

The survey participants included 5438 respondents aged 15-64 years from 20 aimags and Ulaanbaatar city. Of which, 2217 were males and 3221 were females (Table 8).

Table 8. Age group and sex of respondents

Age Group (years)	Men		Women		Both Sexes	
	n	%	n	%	n	%
15-24	403	44.8	496	55.2	899	16.5
25-34	603	39.5	922	60.5	1525	28.0
35-44	568	39.3	876	60.7	1444	26.6
45-54	420	40.2	626	59.8	1046	19.2
55-64	223	42.6	301	57.4	524	9.6
15-64	2217	40.8	3221	59.2	5438	100

Of a total of 5438 survey respondents, representatives of khalkha and kazak ethnic groups accounted for 82.1 and 2.0%, respectively. In terms of age groups there were 899 person aged 15-24, 1525 persons aged 25-34, 1444 persons aged 35-44, 1046 persons aged 45-54, and 524 persons aged 55-64. In terms of locality, 2546 persons were from urban and 2892 persons from rural areas.

Table 9. Survey sample (ethnicity, settings)

Demographics	Survey sample		
	n	%	
Ethnicity	Khalkha	4460	82.1
	Kazak	107	2.0
	Other	866	15.9
Setting	Urban	2546	46.8
	Rural	2892	53.2
	Total	5438	

The distribution of the survey respondents in different age, gender and urban/rural groups was comparable to that of the general population, which facilitated stratification by age, gender and locality.

Marital status

The majority (74.0%) of the survey respondents were married, 17.3% were single, 4.3% were widowed, 2.6% were divorced, 1.2% had a girlfriend/boyfriend, and 0.6% were separated. Four in five respondents had a sexual partner and the proportion of widowed women was greater by 3.2% compared to men (Annex I. I-3).

Education level

The average number of years spent in school for the survey respondents was 10.4 years with males spending 9.9 years and females 10.8 years in school (Table 10). Among the younger age groups, females tended to have slightly more years of schooling, on average.

Table 10. Mean number of years of education

Age Group (years)	Men		Women		Both Sexes	
	n	Mean	n	Mean	n	Mean
15-24	403	9.6	496	10.6	899	10.1
25-34	603	9.8	922	10.7	1525	10.3
35-44	568	10.3	876	11.3	1444	10.9
45-54	419	9.6	626	11.0	1045	10.4
55-64	223	10.3	301	9.6	524	9.9
15-64	2216	9.9	3221	10.8	5437	10.4

According to the survey, 1.4% of the population had no formal schooling, 1.8% had incomplete primary schooling (completed the first three grades or were just literate), 9.7% completed primary education, 22.6% had incomplete secondary education, 25.9% completed secondary education, 37.3% completed college/university and 1.3% had postgraduate degree training (Annex I.5).

Comparison of education levels by gender demonstrated that males were more likely to have only attained some secondary schooling or less while women were more likely to have completed their secondary education, universities, or postgraduate studies.

Comparison of levels of education by age group revealed that 15-24 year-old males (33.3%) were more likely to have incomplete secondary education compared to their female counterparts (27.6%), while the proportion of women with completed college/university training was 2.2-20.7% higher compared to men in all age groups. The above data demonstrates higher rates of discontinuation of formal training by males after graduation from 8th grade, which results in their lower educational attainments compared to women.

Household income and employment

The household income of the surveyed population was assessed based upon average earnings over the past year. 5298 out of 5438 surveyed participants answered the question “What was your average household income in the last year?” Mean reported household income per year was 3’138’196 tugriqs.

Considering that household income consists of joint earnings of working age adults (aged 18 years and above), an average income earned by an adult person per year was 1’281’624.25 tugriqs (Table 11).

Table 11. Average annual income per adult person (by age)

Age group	n	Per adult person (MNT)	95% CI
15-24	840	1’127’826.8	1’064’210.1 – 1’191’443.6
25-34	1495	1’421’754.0	1’363’689.4 – 1’479’818.7
35-44	1419	1’434’386.2	1’373’701.3 – 1’495’071.0
45-54	1026	1’094’237.1	1’033’084.0 – 1’155’390.3
55-64	518	1’094’709.2	1’014’456.4 – 1’174’962.0
Total	5298	1’283’132.8	1’253’928.6 – 1’312’337.0

Of the survey respondents, 57.4% were employed, of whom 44% were males and 55.1% were females.

According to the survey results, 21.5% of the population was employed in governmental organizations, 10.6% – in nongovernmental organizations, 20.4% – self-employed, and 47.5% engaged in occasional work. Women were predominantly employed in governmental organizations (22.7%) and men – in private sector (24.9%).

Table 12. Employment status

	Age Group (years)	n	Both		
			% Government employee	% Non-government employee	% Self-employed
men	15-24	402	7	4.5	14.7
	25-34	603	21.2	15.8	29.4
	35-44	568	24.5	13.9	32.9
	45-54	420	23.1	11.9	25.2
	55-64	223	20.2	5.8	10.3
	15-64	2216	19.7	11.5	24.9
womwn	15-24	496	8.1	7.7	6.7
	25-34	922	21.4	13.2	18.4
	35-44	876	32.1	10.6	24.1
	45-54	626	31	8.5	19.6
	55-64	301	7.3	4.3	7
	15-64	3221	22.8	9.9	17.3
Total		5437	21.5	10.6	20.4

The unemployment rate in the survey population was 30.5%, of whom 39.1% were males and 25.3% females. Of the survey respondents, students, homemakers, the retired, the disabled and the able-bodied unemployed accounted for 18.6%, 24.4%, 16.5% and 24.1%, respectively. Gender breakdown of the able-bodied unemployed demonstrated that there were slightly (9.9%) more males than females in this group, while there were more (20%) female homemakers (housewives) than male (Table 13).

Table 13. Unpaid work and unemployed (by age and gender)

	Age group	n	Student %	Homemaker %	Retired %	Unemployed	
						Able to work %	Not able to work %
Male	15-24	297	61.3	8.8	0	19.5	2
	25-34	203	6.4	16.3	0.5	42.9	7.4
	35-44	163	0.6	17.2	4.3	40.5	11.7
	45-54	167	0	12.6	15	39.5	16.2
	55-64	142	0	3.5	65.5	14.1	11.3
	15-64	972	20.2	11.6	13	30.6	8.5
Female	15-24	385	67.8	15.6	0.5	12.5	0.5
	25-34	433	3.9	53.1	0.2	28.9	3
	35-44	291	1.7	47.8	3.1	30.9	5.8
	45-54	256	0	26.2	29.3	23.8	2.9
	55-64	245	0	4.9	87.3	3.7	2.9
	15-64	1610	17.6	31.6	18.7	20.7	4.6
Total		2582	18.6	24.1	16.5	24.4	6.1

3.2 PREVALENCE OF COMMON MODIFIABLE RISK FACTORS FOR NCDs

Tobacco use

The survey participants were asked questions about current smoking, previous smoking, the age of initiation of smoking, duration of smoking, the quantity of tobacco smoked daily, use of smokeless tobacco, types of tobacco products used, and duration of exposure to second-hand smoke at work and home.

The prevalence of smoking in the survey population was 27.7% (95%CI 26.0-29.4) with statistically significantly more males (48.0%) currently smoking as compared to females (6.9%). Among those all, as well as male smokers, the percentage of 15-24 years old smokers was lower compared to other age groups. For female smokers, there was no statistically significant difference in terms of age group (Table 14).

Table 14. Percentage of current smokers (by age and gender)

Age Group (years)	Men			Women			Both Sexes		
	n	% Current smoker	95% CI	n	% Current smoker	95% CI	n	% Current smoker	95% CI
15-24	403	35.0	27.3-42.8	496	4.0	1.9-6.0	899	19.9	15.5-24.2
25-34	603	55.5	50.6-60.4	922	9.1	5.8-12.4	1525	32.5	29.9-35.2
35-44	568	60.4	54.3-66.4	876	7.1	4.5-9.8	1444	33.6	30.5-36.7
45-54	420	52.4	46.0-58.7	626	10.9	7.3-14.4	1046	32.3	28.9-35.8
55-64	223	47.5	39.4-55.6	301	5.4	1.9-8.9	524	25.6	21.3-29.9
15-64	2217	48.0	44.5-51.5	3221	6.9	5.2-8.5	5438	27.7	26.0-29.4

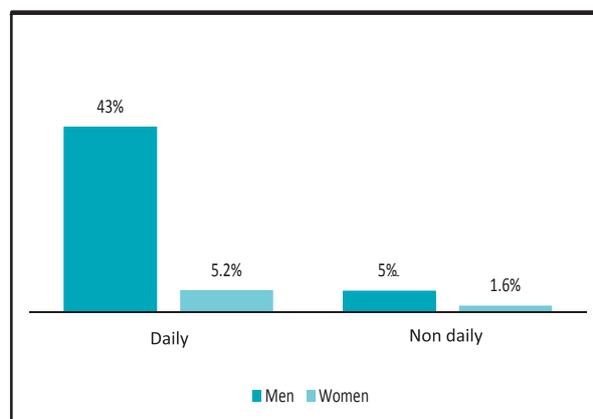
In terms of locality, 27.6% of urban (95% CI 24.8-30.3) and 27.8% (95%CI 25.7-29.8) of rural population smoked indicating no statistically significant difference in terms of stratum.

With respect to frequency of smoking, 24.3% (95%CI 22.9-25.7) of the respondents were daily smokers, 3.4% (95%CI 2.7-4.0) were non-daily smokers and 72.3% (95%CI 70.6-74.0) responded to never smoke (Table 15).

Table 15. Smoking status

Age Group (years)	n	Both Sexes					
		Current smoker		% Does not smoke		95% CI	
		% Daily	95% CI	% Non-daily	95% CI	% Does not smoke	95% CI
15-24	899	16.4	13.0-19.9	3.4	1.7-5.1	80.1	75.8-84.5
25-34	1525	29.1	26.7-31.5	3.4	2.3-4.5	67.5	64.8-70.1
35-44	1444	29.2	26.7-31.8	4.4	2.8-6.0	66.4	63.3-69.5
45-54	1046	30.0	26.4-33.7	2.3	1.2-3.4	67.7	64.2-71.1
55-64	524	23.6	19.7-27.5	2.0	0.7-3.3	74.4	70.1-78.7
15-64	5438	24.3	22.9-25.7	3.4	2.7-4.0	72.3	70.6-74.0

There were significant differences in frequency of smoking between genders with 43.0% (95% CI 39.9-46.0) of males and 5.2% (95% CI 3.8-6.7) of females smoking daily, and 5.0% (95% CI 4.0-6.1) of males and 1.6% (95% CI 0.9-2.4) of females smoking non-daily (Figure 3)

Figure 3. Frequency of smoking

Among current smokers, it was found that 87.9% (95% CI 85.8-90.0) reported to smoke daily. In regard to gender there was no difference in the daily smokers that is, 89.5% (95% CI 87.5-91.4) of men and 76.3% (95% CI 66.5-86.0) of women smoked daily (Annex I.7).

Among smokers, mean age of initiation to smoking was 19.2 years (95% CI 18.7-19.6) and this was differed by sex whereas males started smoking at the age of 18.7 years (95% CI 18.2-19.2) and females started smoking at the age of 23.2 (95% CI 21.3-25.1) years (Table 16).

Table 16. Mean age started smoking

Age Group (years)	Men			Women			Both Sexes		
	n	Mean age	95% CI	n	Mean age	95% CI	n	Mean age	95% CI
15-24	126	16.6	16.0-17.1	12	17.5	15.9-19.1	138	16.6	16.1-17.2
25-34	298	18.3	17.8-18.9	55	20.6	18.4-22.8	353	18.6	18.1-19.1
35-44	305	19.4	18.3-20.5	55	25.6	21.6-29.6	360	20.0	18.9-21.0
45-54	210	19.9	19.0-20.9	51	25.9	22.8-29.1	261	20.8	19.8-21.8
55-64	99	23.3	21.5-25.0	21	32.4	21.5-43.3	120	24.3	22.2-26.4
15-64	1038	18.7	18.2-19.2	194	23.2	21.3-25.1	1232	19.2	18.7-19.6

The duration of smoking has implications for health risks associated with tobacco use. The average duration of smoking among smokers was 15.8 years (95% CI 14.9-16.6) with no significant difference between males (16.1 years; 95% CI 15.1-17.0) and females (13.1 years; 95% CI 11.0-15.2) (Annex I.8).

Out of current daily smokers, 84.6% (95% CI 78.8-90.3) used manufactured cigarettes. There was a statistically significant difference in proportion of urban (99.6%; 95% CI 99.1-100.0) and rural (71.0%; 95% CI 61.1-80.8) consumers of manufactured cigarettes (Annex I.9).

Mean number of cigarettes smoked per day was 8.7 (95% CI 7.8-9.6) among current daily smokers. Men smoked 8.9 cigarettes (95% CI 7.9- 9.8) daily and women smoked 7.0 cigarettes (95% CI 5.6-8.4) a day. There was no significant difference in the number of cigarettes smoked daily between genders and age groups.

Exposure to second-hand smoke at home and work was reported by 42.9% (95% CI 38.4-47.3) and 35.6% (95% CI 31.1-40.1) of the respondents, respectively. In regard to gender, 38.2% (95% CI 32.3-44.1) of males and 47.6% (95% CI 43.3-51.9) of females were exposed to smoking at home. At work place, 43.3% (95% CI 36.7-40.1) of the males and 27.7% (95% CI 24.0-31.3) of the females reported to be exposed, indicating more males had exposure to second-hand smoke than females (Annex I.10, 11).

Conclusions:

1. In Mongolia 27.6% of the population, or three in every 10 people, and one in every two males, smoked.
2. One in every 4 smokers (24.3%) smoked daily. When stratified by gender, 43.0% of males and 5.2% of females smoked daily.
3. There was no significant difference between genders in duration of smoking and a number of cigarettes smoked daily, which was indicative of high risk of developing NCDs among smokers irrespective of gender.
4. One in two persons was exposed to second-hand smoke at home, and 4 in 10 were exposed at work, which considerably increased the risk of NCDs in the general population.

Alcohol consumption

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

Of the survey respondents, 34.2% (95% CI 28.7-39.6), including 24.0% (95% CI 19.3-28.8) of males and 44.5% (95% CI 38.1-51.0) of females were lifetime abstainers. In addition, 7.4% (95% CI 5.7-9.1) of the respondents reported no alcohol consumption in the past 12 months, and there was no gender difference with regards to this indicator (Table 17).

Table 17. Alcohol consumption status, by age

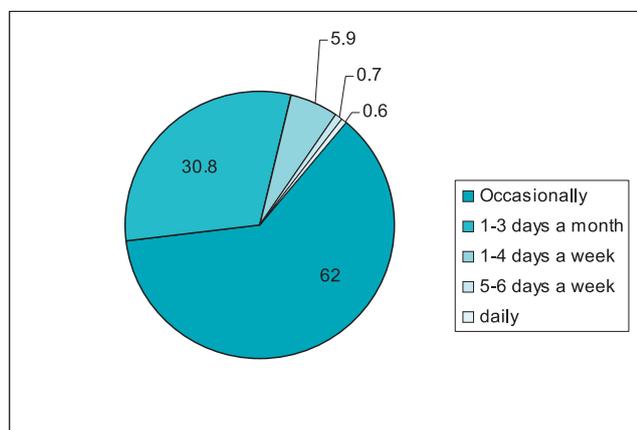
Age Group (years)	Both Sexes								
	n	% Current drinker (past 30 days)	95% CI	% Drank in past 12 months, not current	95% CI	% Past 12 months abstainer	95% CI	% Lifetime abstainer	95% CI
15-24	899	26.7	21.6-31.8	21.4	16.0-26.9	6.7	4.1-9.3	45.2	37.6-52.7
25-34	1525	47.5	42.1-53.0	19.1	15.7-22.6	7.6	5.7-9.5	25.7	20.1-31.4
35-44	1444	47.7	42.1-53.3	19.8	15.6-23.9	7.1	4.3-9.9	25.4	19.2-31.7
45-54	1046	44.0	39.1-48.9	18.8	15.0-22.6	8.4	6.0-10.9	28.8	23.3-34.4
55-64	524	33.0	28.0-38.1	15.7	10.4-20.9	9.3	5.9-12.6	42.1	34.1-50.0
15-64	5438	38.6	34.6-42.7	19.8	16.1-23.5	7.4	5.7-9.1	34.2	28.7-39.6

Of alcohol users, 19.8% (95% CI 16.1-23.5) reported drinking in the past 12 months, and 38.6% (95% CI 34.6-42.7) were current drinkers or reported alcohol use in the past 30 days. There was no gender difference among past 12 month drinkers. In contrast, 49.8% (95% CI 44.7-54.8) of males vs. 27.2% (95% CI 23.0-31.3) of females were current drinkers or reported alcohol use in the past 30 days (Table 18).

Table 18. Alcohol consumption status, by sex

Gender	Current drinker (past 30 days)			Drank in past 12 months, not current		Past 12 months abstainer		Lifetime abstainer	
	n	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Male	2217	49.8	44.7-54.8	20.1	15.9-24.4	6.1	4.4-7.7	24	19.3-28.8
Female	3221	27.2	23.0-31.3	19.5	15.9-23.1	8.8	6.6-11.0	44.5	38.1-51.0
Total	5438	38.6	34.6-42.7	19.8	16.1-23.5	7.4	5.7-9.1	34.2	28.7-39.6

In terms of the frequency of alcohol use by respondents reporting drinking in the past 12 months, 62.0% (95% CI 55.0-69.0) drank occasionally (less than once per month), 30.8% (95% CI 25.2-36.2) drank alcohol for 1-3 days a month, 5.9% (95% CI 3.6-8.3) drank 1-4 days a week, 0.7% (95% CI 0.1-1.4) drank 5-6 days a week, and 0.6% (95% CI 0.2-0.9) reported daily consumption of alcohol (Figure. 4).

Figure 4. Frequency of alcohol consumption in the past 12 months

Analysis of the frequency of alcohol use by gender demonstrated the following:

1. 52.9% (95% CI 44.7-61.2) of males and 75.8% (95% CI 69.8-81.9) of females drank alcohol less than once a month
2. 37.2% (95% CI 30.3-44.0) of males and 21.0% (95% CI 15.9-26.1) of females drank 1-3 days a month,
3. 8.3% (95% CI 4.9-11.7) of males and 2.3% (95% CI 0.9-3.6) of females drank 1-4 days a week,
4. 0.9% (95% CI 0.2-1.6) of males and 0.4% (95% CI 0.0-1.1) of females drank 5-6 days a week,
5. 0.6% (95% CI 0.1-1.1) of males and 0.5% (95% CI 0.0-0.9) of females reported daily consumption of alcohol (Annex I.12-13)

In overall, the above data demonstrates higher risk posed by more frequent alcohol consumption in males compared to females.

An alcohol consumption pattern was further studied by elucidating the frequency of drinking in the past 30 days and an amount of standard drinks on a drinking occasion. In the past 30 days alcohol users drank on average 3.6 times (95% CI 2.7-4.6), males - 3.8 times (95% CI 2.9-4.8) and females - 3.3 times (95% CI 2.1-4.6). Current drinkers consumed on average 7.7 standard drinks (95% CI 7.1-8.3) on a drinking occasion with males consuming 9.2 standard drinks (95% CI 8.5-9.9) or three times more than recommended consumption limits, and females consuming 5.1 standard drinks (95% CI 4.5-5.6) or twice more than recommended limits. In all age groups men consumed twice more standard drinks on a drinking occasion than women (Table 19).

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

Age groups	men			woman			Total		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
15-24	113	7.3	6.1-8.5	94	4.0	3.0-5.0	207	6.0	5.2-6.9
25-34	332	9.5	8.5-10.6	280	5.3	4.5-6.1	612	8.0	7.1-8.8
35-44	296	10.0	8.9-11.0	274	5.9	5.1-6.8	570	8.5	7.6-9.3
45-54	212	10.0	8.7-11.4	172	5.3	4.5-6.1	384	8.4	7.5-9.4
55-64	107	10.1	8.6-11.6	54	4.2	3.2-5.2	161	8.5	7.2-9.8
15-64	1060	9.2	8.5-9.9	874	5.1	4.5-5.6	1934	7.7	7.1-8.3

The risk associated with alcohol consumption was assessed in the survey population based on an average number of standard drinks consumed per drinking day. According to the survey results, 1.1% (95% CI 0.4-1.8) of the respondents or 1.5% (95% CI 0.6-2.4) of males and 0.7% (95% CI 0.2-1.2) of females were at high risk with twice as many men having such a risk compared to women. Medium level risk was found in 1.0% (95% CI 0.5-1.5) of the population or 1.2% (95% CI 0.5-1.8) of males and 0.8% (95% CI 0.3-1.3) of females with no significant difference between genders (Table 20).

Table 20. Category II, III drinking among all respondents, by gender

Gender	Category II			Category III	
	n	%	95% CI	%	95% CI
Male	2164	1.2	0.5-1.8	1.5	0.6-2.4
Female	3212	0.8	0.3-1.3	0.7	0.2-1.2
Total	5376	1	0.5-1.5	1.1	0.4-1.8

The risk associated with alcohol consumption was assessed in current drinkers based on the average number of standard drinks consumed per drinking day in the past 30 days. For 94.5% (95% CI 92.1-96.9) of men and women the risk was low, for 2.4% (95% CI 1.1-3.7) of men and 2.9% (95% CI 1.1-4.6) of women the risk was medium, and for 3.1% (95% CI 1.4-4.7) of men and 2.6% (95% CI 1.0-4.3) of women the risk was high (Table 21, Annex I.14-15).

Table 21. Category I, II and III drinking among current (past 30 days) drinkers, by gender

Gender	Category I				Category II			Category III		
	n	Amount /g/	%	95% CI	Amount /g/	%	95% CI	Amount /g/	%	95% CI
Male	1125	<40	94.5	92.1-96.9	40-59.9	2.4	1.1-3.7	>60	3.1	1.4-4.7
Female	885	<20	94.5	91.6-97.4	20-39.9	2.9	1.1-4.6	>40	2.6	1.0-4.3

Binge drinking is an important factor which significantly increases risks associated with alcohol consumption. Binge drinking is defined for males as consumption of 5 or more standard drinks on a drinking occasion and for females as consumption of 4 or more standard drinks per occasion. The survey findings demonstrated that among current drinkers, 39.7% (95% CI 35.0-44.4) of men and 15.1% (95% CI 12.4-17.7) of women engaged in binge drinking and it was 2.5 times more common among males compared to females (Table 22).

Table 22. Five/four or more drinks on a single occasion at least once during the past 30 days among total population

Gender	Number of standard drinks per drinking occasion	n	%	95% CI
Male	≥5	2217	39.7	35.0-44.4
Female	≥4	3221	15.1	12.4-17.7

Analysis of binge drinking behavior by age revealed that more than half (51.5% and 52%) of 25-44 year-old males and one in five females in the same age group engaged in binge drinking (Annex I.16).

In the past 30 days men consumed more than the recommended consumption limits on 2.1 occasions (95% CI 1.7-2.4), and women on 1 occasion (95% CI 0.8-1.1). In addition, the greatest number of standard drinks consumed on a drinking occasion in the past 30 days was 8.8 drinks (95% CI 8.2-

9.4) in current drinkers or 10.7 drinks (95% CI 9.8-11.5) in males and 5.5 drinks (95% CI 4.9-6.2) in females (Annex I.17).

Conclusions:

1. One third of the population is lifetime alcohol abstainers. Current drinking or consumption of alcohol in the past 30 days was reported by 38.6% of all respondents or 49.8% of men and 27.2% of women.
2. Frequency of alcohol drinking was higher in males compared to females.
3. On an average drinking occasion, males consumed 9.2 and females consumed 5.1 standard drinks respectively.
4. The prevalence of binge drinking was 39.7% in men and 15.1% in women, and binge drinking was 2.5 times more common in males compared to females.

Fruit and vegetable consumption

Fruit and vegetable consumption of the survey population was assessed using indicators of “frequency of consumption per week” and “average daily consumption”.

Frequency of fruit consumption per week

The frequency of weekly fruit consumption in the survey population is shown in the table below by gender and locality breakdown (Table 23).

Table 23. Mean number of days fruit consumed in a typical week (by gender and locality)

Gender and locality		n	Mean	95% CI
Gender	Man	2217	1.0	0.7-1.2
	Woman	3220	1.4	1.2-1.6
	Total	5437	1.2	0.9-1.4
Locality	Urban	2546	1.5	1.3-1.7
	Rural	2891	0.8	0.5-1.1
	Total	5437	1.2	0.9-1.4

The survey population consumed fruits 1.2 days (95% CI 0.9-1.4) a week. The corresponding numbers for males and females were 1.0 (95% CI 0.7-1.2) and 1.4 (95% CI 1.2-1.6) days a week, respectively (Annex I.18).

With regards to the locality, urban respondents consumed fruits 1.5 days (95%CI 1.3-1.7) and rural respondents – 0.8 days (95% CI 0.5-1.1) a week.

Breakdown of data by gender within a locality demonstrated that frequency of weekly fruit consumption was 1.3 days (95% CI 1.0-1.6) for urban men, 0.6 days (95% CI 0.4-0.9) for rural men, 1.7 days (95% CI 1.6-1.9) for urban women and 1 day (95% CI 0.6-1.3) for rural women.

Analysis of data by age revealed that the frequency of weekly fruit consumption was 1.4 days for 15-24 year-olds, which was higher compared to other age groups (95% CI 1.1-1.6).

Average daily fruit consumption

Average daily fruit consumption in the survey population is shown in the table below by gender and locality breakdown (Table 24).

Table 24. Mean number of servings of fruit on average per day (by gender and locality)

Gender and locality		n	Mean	95% CI
Gender	Man	2208	0.3	0.2-0.5
	Woman	3206	0.5	0.4-0.6
	Total	5414	0.4	0.3-0.5
Locality	Urban	2534	0.5	0.4-0.7
	Rural	2880	0.3	0.1-0.5
	Total	5414	0.4	0.3-0.5

Average daily fruit consumption was 0.4 servings (95% CI 0.3-0.5) in the survey population, or 0.3 servings (95% CI 0.2-0.5) for males and 0.5 servings (95% CI 0.4-0.6) for females. Average daily fruit consumption for women was higher compared to men (Annex I.19).

Average daily fruit consumption was 0.5 servings (95% CI 0.4-0.7) for urban and 0.3 servings (95% CI 0.1-0.5) for rural respondents. Average daily fruit consumption was higher in urban population compared to the rural population. There was no statistically significant difference in average daily fruit consumption between age groups.

Frequency of vegetable consumption per week

Frequency of weekly vegetable (excluding potato) consumption in the survey population is shown in the table below by gender and locality breakdown (Table 25).

Table 25. Mean number of days vegetables consumed in a typical week (by gender and locality)

Gender and locality		n	Mean	95% CI
Gender	Man	2215	4.6	4.0-5.2
	Woman	3220	4.9	4.4-5.5
	Total	5435	4.8	4.2-5.3
Locality	Urban	2546	5.8	5.5-6.1
	Rural	2889	3.8	3.0-4.6
	Total	5435	4.8	4.2-5.3

The survey population consumed vegetables 4.8 days (95% CI, 4.2-5.3) a week. The corresponding numbers for males and females were 4.6 (95% CI 4.0-5.2) and 4.9 (95% CI 4.4-5.5) days a week, respectively (Annex I.20).

With regards to the locality, urban respondents consumed vegetables 5.8 days (95% CI 5.5-6.1) and rural respondents – 3.8 days (95% CI 3.0-4.6) a week.

Breakdown of data by gender within a locality demonstrated that the frequency of weekly vegetable consumption was 5.8 days (95% CI 5.5-6.1) for urban men, 3.6 days (95% CI 2.8-4.4) for rural men, 5.9 days (95% CI 5.6-6.2) for urban women and 3.9 days (95% CI 3.1-4.7) for rural women. The frequency of weekly vegetable consumption was significantly higher in urban vs. rural population.

Mean number of servings of vegetables on average per day

Average daily vegetable consumption in the survey population is shown in the table below by gender and locality breakdown.

Table 26. Mean number of servings of vegetables on average per day (by gender and locality)

Gender and locality		n	Mean	95% CI
Gender	Man	2204	1.4	1.1-1.6
	Woman	3207	1.6	1.2-1.9
	Total	5411	1.4	1.2-1.7
Locality	Urban	2534	1.9	1.6- 2.2
	Rural	2877	1.0	0.7-1.3
	Total	5411	1.4	1.2-1.7

Mean number of servings of vegetables on average per day 1.4 servings (95% CI 1.2-1.7) in the survey population, or 1.4 servings (95% CI 1.1-1.6) for males and 1.6 servings (95% CI 1.2-1.9) for females. Average daily vegetable consumption for women was higher compared to men (Annex I.21).

Average daily vegetable consumption was 1.9 servings (95% CI 1.6-2.2) for urban and 1.0 serving (95% CI 0.7-1.3) for rural respondents. Average daily vegetable consumption was higher in urban vs. rural population.

Comparison of average daily vegetable consumption between different age groups demonstrated that the 25-34 year age group had the highest consumption of 1.5 servings (95% CI 1.1-1.9) of vegetables a day. Further breakdown by gender within age groups revealed that 25-34 year-old males had the highest consumption of 1.5 servings (95% CI 1.1-1.9) of vegetables a day compared to males in other age groups. Similarly, 15-24 year-old females had the highest consumption of 1.7 servings (95% CI 1.4-2.0) of vegetables a day compared to females in other age groups.

Mean number of servings of fruits and vegetables

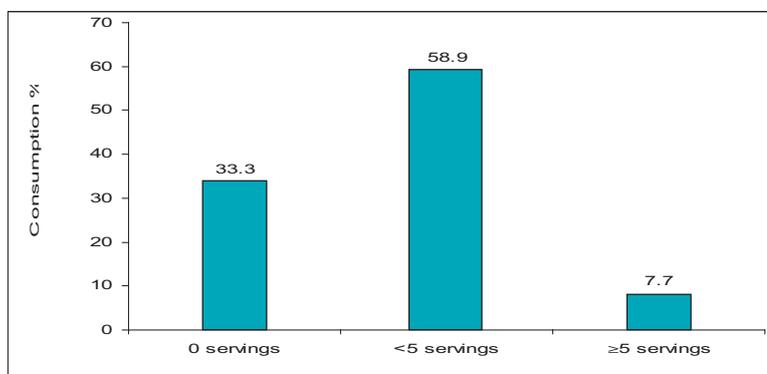
Average daily consumption of fruits and vegetables was 1.8 servings in the survey population, or 1.7 servings (95% CI 1.3-2.0) for males and 2 servings (95% CI 1.6-2.4) for females. Average daily consumption of fruits and vegetables for women was higher compared to men (Table 27, annex I.22).

Table 27. Mean number of servings of fruit and/or vegetables on average per day (by gender and locality)

Gender and locality		n	Mean	95% CI
Gender	Man	2217	1.7	1.3-2.0
	Woman	3219	2.0	1.6-2.4
	Total	5436	1.8	1.5-2.2
Locality	Urban	2545	2.4	2.0-2.8
	Rural	2891	1.3	0.8-1.8
	Total	2217	1.7	1.3-2.0

Mean number of servings of fruits and vegetables was 2.4 servings (95% CI 2.0-2.8) for urban and 1.3 servings (95% CI 0.8-1.8) for rural respondents. Average daily fruit and vegetable consumption was higher in urban vs. rural population (Annex II.10-11).

Average daily consumption of fruits and vegetables other than potatoes in the survey population by age groups was classified into three categories based on the number of servings consumed and is shown in Figure 5. 33.3% (95% CI 25.9-40.7) of the population did not consume fruits or vegetables at all, 46.5% (95% CI 40.2-52.9) consumed 1-2 servings a day, 12.4% (95% CI 8.9-16.0) - 3-4 servings a day, and only 7.7% (95% CI 4.2-11.3) – 5 or more servings a day. Overall, 92.3% of the population did not consume or consumed less than 5 servings of fruits and vegetables a day (Annex I.25).

Figure 5. Daily servings of fruits and vegetables

Among fruit and vegetable consumers, 35-44 year-olds accounted for 36.4% (95% CI 28.0-44.9) and 45-54 year-olds – for 38.1% (95% CI 31.5-44.8), which was significantly higher compared to other age groups. In terms of a number of servings of fruits and vegetables consumed daily, 46.5% (95% CI 40.2-52.9) had 1-2 servings, 12.4% (95% CI 8.9-16.0) had 3-4 servings and 7.7% (95% CI 4.2-11.3) – 5 or more servings daily (Table 28, Annex I.23-24).

Table 28. Number of servings of fruit and/or vegetables on average per day

Age Group (years)	n	Total							
		% no fruit and/or vegetables	95% CI	% 1-2 servings	95% CI	% 3-4 servings	95% CI	% ≥5 servings	95% CI
15-24	898	28.8	19.8-37.9	49.7	41.1-58.2	12.4	8.2-16.6	9.1	5.0-13.2
25-34	1524	34.2	25.8-42.6	44.8	37.7-51.8	12.9	8.8-17.0	8.2	3.0-13.3
35-44	1444	36.4	28.0-44.9	44.2	38.1-50.2	12.2	8.1-16.4	7.2	3.5-10.9
45-54	1046	38.1	31.5-44.8	45.6	40.0-51.2	10.7	7.2-14.2	5.5	2.7-8.3
55-64	524	34.7	26.6-42.8	45.0	37.2-52.8	15.3	9.6-21.0	5.1	0.6-9.5
15-64	5436	33.3	25.9-40.7	46.5	40.2-52.9	12.4	8.9-16.0	7.7	4.2-11.3

The majority of the respondents consumed 1-2 servings of fruits and vegetables a day. Breakdown by age of respondents who reported consuming 1-2 servings of fruits and vegetables daily demonstrated that 15-24 year-olds were more likely to fall into this category (49.7%; 95% CI 41.1-58.2) compared to other age groups.

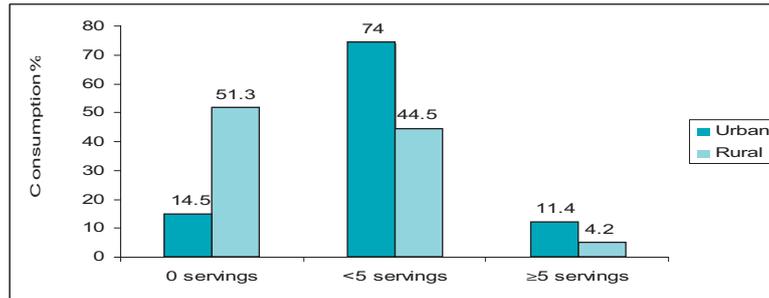
Average daily consumption of fruits and vegetables according to a number of servings is classified into 3 categories, and a breakdown by locality is shown in Table 29.

Table 29. Number of servings of fruit and/or vegetables on average per day by locality

Locality	n	Total							
		% no fruit and/or vegetables	95% CI	% 1-2 servings	95% CI	% 3-4 servings	95% CI	% ≥5 servings	95% CI
Urban	2545	14.6	11.2-18.1	58.1	49.6-66.7	15.9	11.5-20.3	11.4	5.5-17.2
Rural	2891	51.3	38.9-63.7	35.4	27.7-43.0	9.1	3.8-14.4	4.2	0.3-8.2
Total	5436	33.3	24.5-42.0	46.5	39.6-58.5	12.4	8.8-16.0	7.7	4.1-11.4

A third (33.3%; 95% CI 24.5-42.0) of the survey population in total, and 14.6% of urban and 51.3% (95% CI 38.9-63.7) of rural respondents had 0 servings of fruits and vegetables. Of those who reported consuming fruits and vegetables, 46.5% (95% CI 39.6-58.5) consumed 1-2 servings, 12.4% (95% CI 8.8-16.0) - 3-4 servings, and 7.7% (95% CI 4.1-11.4) - 5 or more servings daily. The majority of the survey participants consumed 1-2 servings of fruits and vegetables daily.

Figure 6. Daily servings of fruits and vegetables, by locality

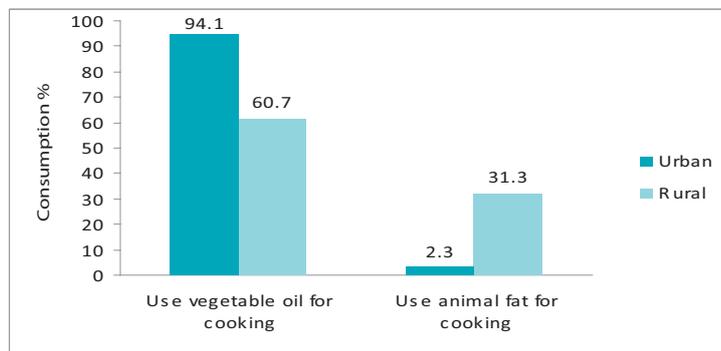


The proportion of respondents reporting consuming 1-2 servings of fruits and vegetables daily was 58.1% (95% CI 49.6-66.7) in urban and 35.4% (95% CI 27.7-43.0) in rural areas. Similarly, those consuming 3-4 servings daily accounted for 15.9% (95% CI 11.5-20.3) of urban and 9.1% (95% CI 3.8-14.4) of rural respondents. Only 11.4% (95% CI 5.5-17.2) of urban and 4.2% (95% CI 0.3-8.2) of rural population consumed 5 or more daily servings of fruits and vegetables. The above data demonstrates significantly higher consumption of fruits and vegetables in urban vs. rural population (Figure 6).

Fat and oil intake

When asked about a type of oil used for cooking, 77.1% (95% CI 70.3-83.9) of the survey respondents reported using vegetable oil, 17.1% (95% CI 10.8-23.3) – animal fat, 5.5% (95% CI 3.3-7.8) – other types of fats and oils and 0.3% (95% CI 0.1-0.5) did not use fat or oil for cooking.

Figure 7. Fat intake (by locality)



Of male respondents, 73.7% (95% CI 65.9-81.5) used vegetable oil, 20.3% (95% CI 12.8-27.9) – animal fat, 5.5% (95% CI 3.2-7.8) – other oil and 0.4% reported no use of fat or oil in cooking.

94.1% (95% CI 91.5-96.7) of urban and 60.7% (95% CI 48.6-72.7) of rural respondents used vegetable oil. Animal fat use was reported by 2.3% (95% CI 1.3-3.3) or urban vs. 31.3% (95% CI 19.9-42.8) or rural respondents.

Salt intake

Average daily salt intake was 7.3 grams (95% CI 6.9-7.7) per household member. Salt intake was higher in rural (8.1 grams daily, 95% CI 7.5-8.6) vs. urban (6.5 grams daily, 95% CI 6.1-6.9) residents (Annex I.26; II.13)

Conclusions

1. Average daily serving of fruits and vegetables was 1.8 in the Mongolian population, which was 3.2 servings less than the WHO recommendation.
2. 92.3% of the Mongolian population consumed less than 5 servings of fruits and vegetables daily.
3. Fruit and vegetable consumption in rural areas was twice lower than in urban areas.
4. Urban residents used predominantly vegetable oil for cooking, while rural residents tended to use animal fat.
5. Daily salt intake was 7.3 grams per person with rural residents using on average 1.6 more grams of salt compared to their urban counterparts.

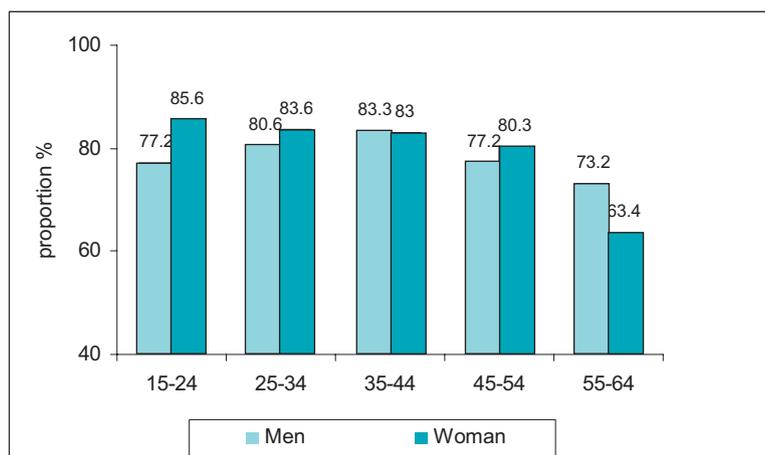
Physical activity

Physical activity was assessed in terms of intensity and duration of activity and compared between different genders, age groups and locality. In terms of intensity, physical activity is classified into high, moderate and low levels.

High levels of physical activity. According to the survey results, the prevalence of people engaged in high levels of physical activity was 80.8% with significantly more males (82.5%) engaged in such activities than females (78.9%) (Annex I.27-29).

In terms of age differences, 15-24 year-old men most actively engaged in high level physical activities (85.6%), decreasing with age and reaching the lowest rate in 55-64 year-olds (63.4%). In females, in contrast, the peak was in 35-44 year-olds (83.3%) and the lowest rate – in 55-64 year-olds (73.2%). The findings of the survey demonstrated that in both genders physical activity was at the lowest level in 55-64 year age group, and women lag almost 20 years behind men in terms of reaching the highest level of engagement in high levels of physical activity (Figure 8).

Figure 8. Proportion of population engaged in high levels of physical activity, by age and gender



In terms of locality, rural respondents (88.1%) were more likely to engage in high levels of physical activity compared to their urban counterparts (73.3%). A similar trend was preserved when stratified by gender, with 75.1% (95% CI 67.1-83.2) of urban men, 89.2% (95% CI 84.3-94.1) of rural men, 71.7% (95% CI 63.1-80.4) of urban women and 87% (95% CI 79.6-94.3) rural women engaging in high levels of physical activity (Annex II.14-16).

Moderate levels of physical activity. According to the survey results, the prevalence of people engaged in moderate levels of physical activity was 11.7% (95% CI 8.7-14.7) with significantly more females (13.4%; 95% CI 9.4-17.4) engaged in such activities than males (10%; 95% CI 7.4-12.7).

In terms of age differences, in men in 15-44 year age group moderate levels of physical activity decreased steadily with age (10.3%, 8.5%, and 7.6%) before increasing in 45-65 year age group (11.5%, 18.6%). In females, the peak was in 15-24 year-olds (16%), followed by a decrease to the lowest rate in 35-44 year-olds (10.4%), before steadily increasing in 45-64 year-olds (13.2%, 14.4%). The findings of the survey demonstrated that in both genders moderate levels of physical activity were common in 35-44 year-olds, increasing further in 55-64 year age group.

In terms of locality, urban respondents (15.3%, 95% CI 11.2-19.3) were twice more likely to engage in moderate levels of physical activity compared to their rural counterparts (8.2%; 95% CI 4.1-12.3).

Low levels of physical activity. Of the survey population, 7.5% belonged to a physically inactive risk group. In males the prevalence of low levels of physical activity was 7.4% (95% CI 4.5-10.3) and in females – 7.7% (95% CI 5.1-10.2). Breakdown by gender and locality revealed that 12% (95% CI 7.3-16.7) of urban men, 3.3% (95% CI 1.4-5.2) of rural men, 10.8% (95% CI 7.1-14.6) of urban women and 4.2% (95% CI 1.6-6.7) of rural women, or 11.4% (95% CI 7.5-15.2) of urban residents and 3.7% (95% CI 1.7-5.8) of rural residents were physically inactive. In other words, one in every 10 urban residents was physically inactive.

Population not engaging in vigorous physical activity

Out of the physically active population, 48.5% (95% CI 43.1-53.8) did not engage in vigorous or high and moderate levels of physical activity at work and/or recreational settings. The proportion of men and women not engaging in vigorous activity was 42.9 (95% CI 37.3-48.4) and 54.2% (95% CI 48.2-60.1), respectively. The proportion increased with age irrespective of gender (Annex I.30).

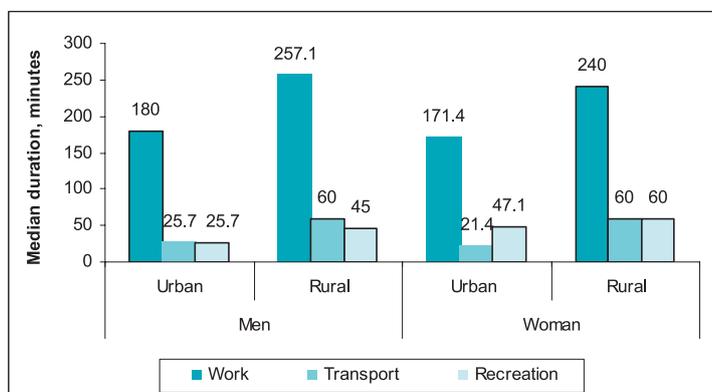
In urban areas, the population not engaged in vigorous physical activity at work and in recreational settings was 54.5% (95% CI 48.5-60.6), which was higher than in rural areas (42.4%; 95% CI 34.1-50.8), (Annex II.17)

The proportion of the population engaged in vigorous physical activity at work was 53.4% (95% CI 49.1-57.6), 23.7% (95% CI 20.7-26.7) during transport and 23% (95% CI 20.1-25.8) in recreational settings with no significant differences between genders.

The median duration of time spent in vigorous activity was 342.9 minutes (95% CI 158.6-510) a day. For males the median duration was 347.1 minutes (95% CI 171.4-501.4) and for females - 337.1 minutes (95% CI 141.4-518.6). Median minutes spent in vigorous activity was the highest in men and women in 35-44 year age group (385.7 and 364.3 minutes, respectively), and the lowest in 55-64 year age group (234.3 minutes for men and 297.1 minutes for women). Thus, the intensity and duration of vigorous physical activity decreased with age (Annex I.31-36).

Median duration of daily vigorous physical activity at work was 214.2 minutes (95% CI 25.7-342.9), during transport – 30 minutes (95% CI 11.4-85.7) and in recreational settings – 51.4 minutes (95% CI 4.3-102.9). Gender breakdown of data demonstrated that males spent 225.7 minutes (95% CI 51.4-342.9) at work, 34.3 minutes (95% CI 10-90) during transport and 34.3 minutes (95% CI 0-85.7) in recreational settings engaging in vigorous physical activity. Corresponding numbers for females were 205.7 (95% CI 7.1-342.9), 30 (95% CI 12.9-77.1) and 51.4 (95% CI 11.4-120) minutes, respectively (Figure 9).

Figure 9. Median duration of daily vigorous activity (by gender, urban/rural and type of setting)



Rural respondents spent more time in physical activity than urban respondents. Median duration of daily vigorous activities for urban males was 180 minutes (95% CI 8.6-308.6) at work, 25.7 minutes (95% CI 4.2-60.0) during transport and 25.7 minutes (95% CI 0-64.3) in recreational settings. The corresponding numbers for rural males were 257.1 (95% CI 109.3-360), 60 (95% CI 20-120) and 45 (95% CI 0-120) minutes, respectively; for urban females 171.4 (95% CI 0-300), 21.4 (95% CI 7.1-60.0) and 47.1 (95% CI 8.6-102.9) minutes, respectively; and for rural females 240 (95% CI 85.7-360), 60 (95% CI 21.4-120) and 60 (95% CI 17.1-124.3) minutes, respectively.

Conclusions

1. 7.5% of the population were physically inactive, which meant 1 in 10 persons was at increased risk for NCDs. Urban men were 4 times and women two times more at risk compared to their rural counterparts as a result of physical inactivity.
2. Median duration of time spent in high or moderate levels of physical activity during transport (30 min) and in recreational settings (51.4 min) was 4-7 times less than at work (214.2 min).
3. The fact that more than 1 in every 2 persons (53.4%) engaged in vigorous physical activity at work demonstrated that there were opportunities for dissemination of information and knowledge on healthy lifestyle at workplaces.
4. Women lagged almost 20 years behind men in terms of reaching the highest level of engagement in high and moderate levels of physical activity, which could be a reflection of a lack of knowledge on the importance of regular physical activity, and engagement in physical activity only after obesity problem arose.

Body development and physical fitness

Changes in fitness test methodology enabled shortening of the test duration. In the current survey physical fitness was assessed by using 5 quality indicators such as strength, speed, flexibility, endurance and balance. A total of 1949 persons or 37.5% of the survey participants underwent the fitness test.

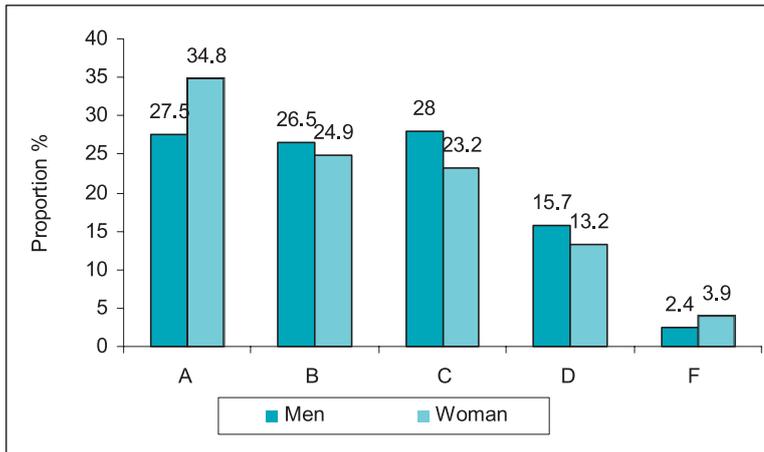
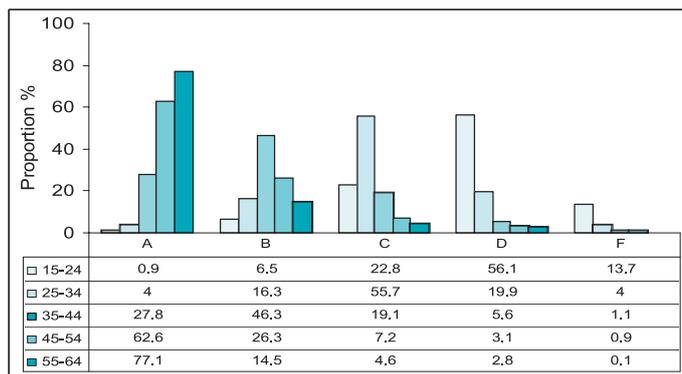


Figure 10. Physical fitness (by gender)

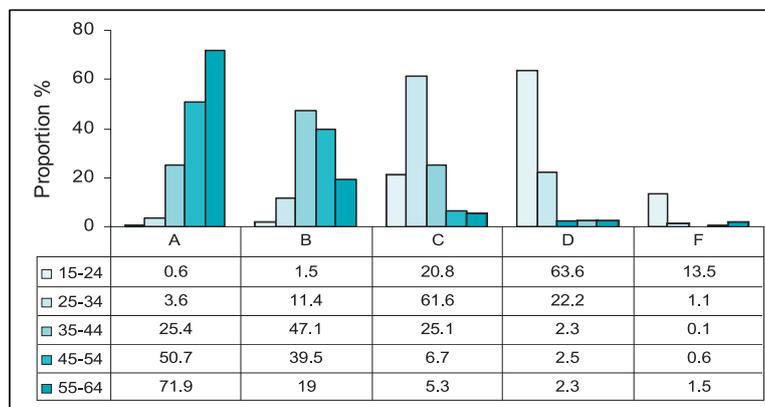
Physical fitness test results were scored as follows: 27.5% of men and 34.8% of women tested “A- Excellent”, 26.5% of men and 24.9% of women tested “B- Good”, 28% of men and 23.2% of women tested “C- Satisfactory”, 15.7% of men and 13.2% of men tested “D- Below average”, and 2.4% of men and 3.9% of women tested “F- Unsatisfactory” (Figure 10).

Figure 11. Physical fitness, males (by age group)



According to the test results, 57.4% of survey respondents or 54% of males and 59.7% of females scored A or B. The rest (42.6% of all respondents, 46.6% of males and 40.3% of females) scored C or lower. The results of the current survey compared to 2005 survey results demonstrated 15% increase in physical fitness of males. Therefore, physical fitness test results were stratified by age for males only and demonstrated in the figure 11 below (Figure 11).

Figure 12. Physical fitness, by age group



According to the graph proportion of 15-24 year-old males with “A-Excellent” rating increased by 0.6%, but the proportion with “B-Good” rating decreased by 9.4% and the proportion with “C” and below rating increased by 17.7% compared to 2005. This is yet another sign of gaps in physical fitness education persisting since 2005 (Figure 12).

Conclusions

A number of factors contributed to low levels of physical fitness in 15-24 year-old youth, including dissociation between basic education and behavior change communication aimed at promoting the importance of engaging in vigorous physical activity at work, during transport and in recreational settings, and the lack of enabling environment and comprehensive training curricula for physical fitness classes in schools.

3.3 PREVALENCE OF INTERMEDIATE RISK FACTORS FOR NCDs

Overweight and obesity

Overweight and obesity are recognized as intermediate risk factors for NCDs. Trained staff performed anthropological measurements of weight, height and waist circumference in 5314 survey participants aged 15-64 years. Anthropometric measurements were used to calculate Body Mass Index (BMI) and mean waist circumference in order to estimate the prevalence of overweight and obesity by age, gender and locality.

In the male study population mean body weight was 68.3 kg (95% CI 67.2-69.3), and mean height – 167.4 cm (95% CI 166.7-168.0). The corresponding indicators for females were 61.7 kg (95% CI 60.9-62.4) and 157.4 cm (95% CI 156.9-157.9) (Table 30).

Table 30. Mean height (cm)

Нас	Эрэгтэй				Эмэгтэй			
	Жин – кг		Өндөр - См		Жин – кг		Өндөр - См	
	Дундаж	95%CI	Дундаж	95%CI	Дундаж	95%CI	Дундаж	95%CI
15-24	62.9	61.4-64.5	168.2	167.2-169.3	56.4	55.0-57.8	158.2	157.4-159.0
25-34	70.3	68.6-71.9	168.1	167.1-169.2	62.1	61.0-63.1	158.2	157.5-158.9
35-44	72.0	70.0-74.0	166.8	165.9-167.8	64.9	63.9-66.0	156.7	155.9-157.6
45-54	71.9	70.3-73.6	166.1	165.1-167.0	67.1	65.7-68.5	156.0	155.2-156.8
55-64	72.0	68.8-75.2	163.9	162.9-164.8	66.6	65.1-68.1	155.1	154.0-156.3
15-64	68.3	67.2-69.3	167.4	166.7-168.0	61.7	60.9-62.4	157.4	156.9-157.9

There were no statistically significant differences in mean body weight and height between urban and rural study participants. For instance, mean body weight in urban males was 69.3 kg (95% CI 67.6-71.0) and in rural males – 67.3 kg (95% CI 66.2-68.5), while corresponding height was 168.5 cm (95% CI 167.7-169.2) in urban males and 166.4 cm (95% CI 165.3-167.4) in rural males (Table 31).

Table 31. Mean body weight and height (by locality)

Locality	Male				Female			
	Weight, kg		Height, cm		Weight, kg		Height, cm	
	Mean	95%CI	Mean	95%CI	Mean	95%CI	Mean	95%CI
Urban	69.3	67.6-71.0	168.5	167.7-169.2	62.1	61.2-63.1	158.1	157.3-158.8
Rural	67.3	66.2-68.5	166.4	165.3-167.4	61.1	60.0-62.2	156.7	155.9-157.4
Total	68.3	67.2-69.3	167.4	166.7-168.0	61.7	60.9-62.4	157.4	156.9-157.9

For females, mean body weight was 62.1 kg (95% CI 61.2-63.1) in urban and 61.1 kg (95% CI 60.0-62.2) in rural areas, the corresponding body height was 158.1 (95% CI 157.3-158.8) and 156.7 (95% CI 155.9-157.4) cm, respectively (Table 31).

Mean BMI for 15 – 64 year-old men and women was 24.9 (95% CI 24.6-25.2) and 24.3 (95% CI 24.0-24.7), respectively. There was no statistical difference in mean BMI between genders. In both genders mean BMI had a tendency to increase with age although not statistically significant. However, body weight and mean BMI in 15 – 24 year-olds was statistically significantly lower than in other age groups (Table 32).

Table 32. Mean BMI (kg/m²), by age and gender

Age Group (years)	Men			Women*			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
15-24	400	22.2	21.7-22.7	473	22.5	22.0-23.0	873	22.3	21.9-22.8
25-34	599	24.8	24.3-25.3	857	24.8	24.5-25.2	1456	24.8	24.5-25.2
35-44	564	25.8	25.2-26.4	867	26.4	26.0-26.8	1431	26.1	25.8-26.5
45-54	412	26.1	25.5-26.6	620	27.5	27.0-28.1	1032	26.8	26.3-27.2
55-64	222	26.8	25.7-27.9	300	27.7	27.0-28.3	522	27.2	26.6-27.9
15-64	2197	24.3	24.0-24.7	3117	24.9	24.6-25.2	5314	24.6	24.3-24.9

* excluding pregnant women

There was a statistically significant trend in 15 – 54 year-old women towards increase in mean BMI with age. However, there was no significant difference in mean BMI of 45 – 54 (BMI=27.5; 95% CI 27.0-28.1) and 54 – 64 (BMI=27.7; 95% CI 27.0-28.3) year-old females.

There was no significant difference in mean BMI of urban (BMI=24.7; 95% CI 24.3-25.0) vs. rural (BMI=24.6; 95% CI 24.2-24.9) residents aged 15 – 64 years (Table 33).

Table 33. Mean BMI (kg/m²), by locality

Locality	Male			Female*			Total		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
Urban	991	24.4	23.7-24.9	1508	24.89	24.5-25.3	2499	24.7	24.2-25.0
Rural	1206	24.3	23.8-24.7	1609	24.90	24.4-25.4	2815	24.6	24.2-24.9
Total	2197	24.3	23.9-24.7	3117	24.9	24.6-25.2	5314	24.6	24.3-24.9

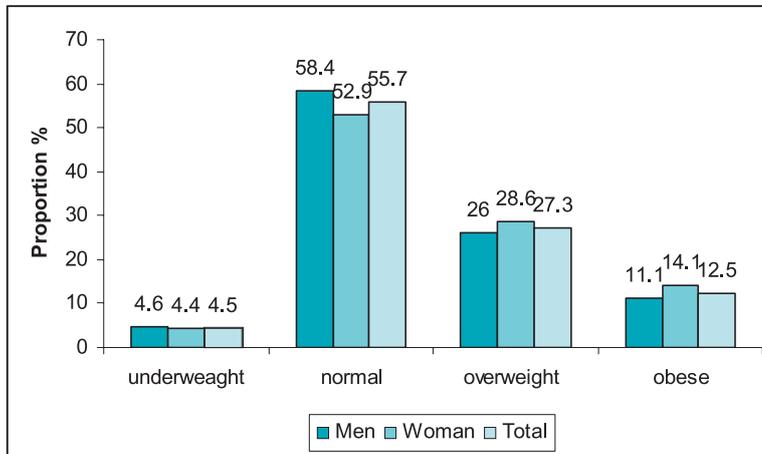
* excluding pregnant women

There was no significant difference in mean BMI in urban vs. rural areas when stratified by gender.

In overall, the survey results on BMI risk categories revealed that 4.5% (95% CI 3.2-5.8) of 15 – 64 year-old survey population was underweight, 55.7% (95% CI 53.1-58.3) - normal, 27.3% (95% CI 25.3-29.2) - overweight, and remaining 12.5% (95% CI 10.8-14.3) - obese (Figure 12, Annex I.37-39).

The survey results on BMI risk categories demonstrated that 26% (95% CI 23.2-28.7) and 11.1% (95% CI 8.7-13.4) of men were overweight and obese, respectively. The corresponding rates for females were 28.6% (95% CI 26.3-31.0) and 14.1% (95% CI 12.1-16.0).

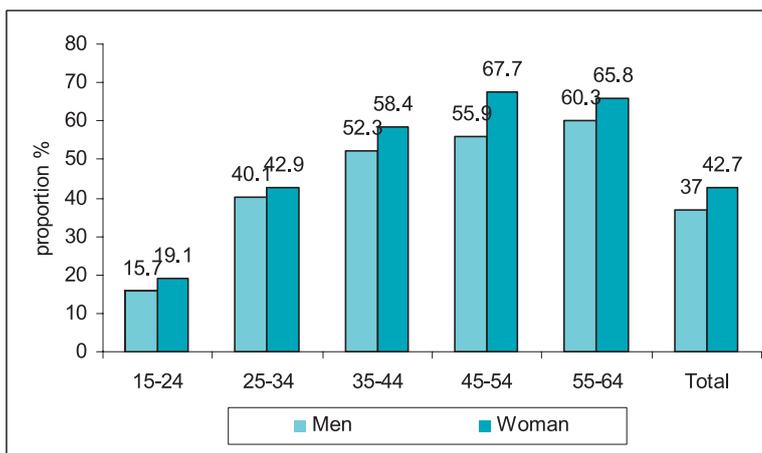
There were no statistically significant differences in the prevalence of overweight and obesity between genders (Figure 13).

Figure 13. Prevalence of overweight and obesity (by gender)

The prevalence of overweight and obesity (BMI \geq 25) was 42.7% (95% CI 39.9-45.5) in women and 37% (95% CI 33.0-41.0) in men.

Proportion of overweight and obese people in 25–34 year age group was 2.2-2.5 times higher compared to 15 – 24 year age group. For instance, proportion of overweight and obese men aged 25 – 34 years was 40.1%, which was 2.5 times more compared to 15–24 year-old men (15.7%). Similarly, the proportion of overweight and obese women aged 25 – 34 years was 41.4%, which was 2.2 times more compared to 15–24 year-old women (19.1%) (Figure 13).

Among people aged 15-44 there was statistically significant direct correlation between the prevalence of obesity and age in both genders. More than a half of population aged 45-64 years was overweight or obese, and there were no significant differences between age groups (Figure 14).

Figure 14. Prevalence of overweight and obesity, by age and gender

The prevalence of overweight and obesity was the highest in 45 – 64 year-olds with 55.9 - 60.3% of men and 65.8 – 67.7% of women having BMI \geq 25 (Figure 14).

There was no significant difference in the prevalence of overweight and obesity between urban and rural population. In particular, 41.1% (95% CI 37.5-44.7) of 15-64 year-old urban population and 38.5% (95% CI 34.7-42.3) of their rural counterparts were overweight or obese.

Table 34. BMI classifications (by gender and locality)

BMI	Male					
	Urban			Rural		
	n	%	95%CI	n	%	95%CI
Underweight (BMI <18.4)	30	5.2	2.7-7.8	35	4.0	2.2-5.8
Normal weight (BMI 18.5–24.9)	512	55.7	49.4-61.9	684	60.8	56.2-65.4
Overweight (BMI 25.0-29.9)	315	28.1	24.6-31.7	335	24.0	20.3-27.8
Obese (BMI >30.0)	134	10.9	6.9-14.9	152	11.1	8.6-13.7
BMI	Female					
	Urban			Rural		
	n	%	95%CI	n	%	95%CI
Underweight (BMI <18.4)	48	5.1	2.6-7.6	41	3.7	2.3-5.0
Normal weight (BMI 18.5–24.9)	679	51.9	48.5-55.4	762	53.9	50.0-57.8
Overweight (BMI 25.0-29.9)	496	28.4	24.8-31.8	527	29.0	25.8-32.1
Obese (BMI >30.0)	285	14.6	12.1-17.1	279	13.4	10.5-16.4

There were no statistically significant differences in the prevalence of overweight and obesity detected between urban and rural residents when stratified by gender. The prevalence of overweight and obesity in 15–64 year-old males was 39.1% (95% CI 33.0-45.2) in urban and 35.2% (95% CI 30.2-40.1) in rural settings (Table 34).

Mean waist circumference and prevalence of central obesity

Mean waist circumference and prevalence of central obesity were measured in order to estimate risk for developing cardiovascular diseases in the study population.

Mean waist circumference was 83.2 cm (95% CI 82.2-84.3) in men aged 15 – 64 years, and 82.6 cm (95% CI 81.7-83.5) in their female counterparts with no significant difference between the two. Mean waist circumference had a tendency to increase with age although not statistically significant (Table 35).

Table 35. Mean waist circumference (cm)

Age Group (yaers)	Male			Female*		
	n	Mean	95% CI	n	Mean	95% CI
15-24	402	76.5	75.2-77.8	475	75.7	74.4-77.1
25-34	600	83.9	82.4-85.4	859	82.9	81.7-84.1
35-44	567	88.3	86.3-90.3	868	86.5	85.5-87.5
45-54	416	88.9	87.1-90.6	622	89.5	88.0-91.0
55-64	223	91.8	88.3-95.3	300	91.3	89.9-92.8
15-64	2208	83.2	82.2-84.3	3124	82.6	81.7-83.5

* excluding pregnant women

Mean waist circumference was significantly higher in 25 – 34 year-olds (83.9 cm /95% CI 82.4-85.4/ in males and 82.9 cm /95% CI 81.7-84.1/ in females) compared to 15 -24 year-olds (Table 36).

Comparison of mean waist circumference between urban and rural population revealed no significant difference (Table 36).

Table 36. Mean waist circumference (cm)^a

Age Group (years)	Male			Female*		
	n	Mean	95% CI	n	Mean	95% CI
Urban	992	83.5	81.8-85.2	1511	81.7	80.5-82.9
Rural	1216	83.0	81.7-84.3	1613	83.5	82.1-84.9
Total	2208	83.2	82.2-84.3	3124	82.6	81.7-83.5

* excluding pregnant women

Mean waist circumference was 83.5 cm (95% CI 81.8-85.2) in urban men, 81.7 cm (95% CI 80.5-82.9) in urban women, 83 cm (95% CI 81.7-84.3) in rural men and 83.5 cm (95% CI 82.1-84.9) in rural women.

The prevalence of central obesity was estimated using waist circumference measurements. Waist circumference equal to or greater than 90 cm in men and 80 cm in women is an indicator of central obesity.

The prevalence of central obesity was 29.1% (95% CI 25.8-32.4) in 15-64 year-old men and 55.7% (95% CI 52.3-59.0) in their female counterparts. Increase in the prevalence of central obesity with age was prominent in 15-44 year age group and the trend was statistically significant. Central obesity was generally common in people older than 35 irrespective of gender. Three in four women aged 35-54 years and 8 in 10 women aged 55-64 years were centrally obese. Of men aged 55-64, one in two men had central obesity (Table 37).

Table 37. Prevalence of central obesity (by age and gender)

Age Group (years)	Male (waist circumference \geq 90 cm)			Female (waist circumference \geq 80 cm)		
	n	%	95% CI	n	%	95% CI
15-24	402	10.4	6.3-14.6	475	31.3	25.8-36.9
25-34	600	29.5	24.7-34.4	859	59.4	54.7-64.1
35-44	567	43.4	37.0-49.8	868	71.4	68.0-74.8
45-54	416	45.4	39.2-51.6	622	76.1	70.8-81.4
55-64	223	55.9	44.5-67.3	300	80.6	74.9-86.2
15-64	2208	29.1	25.8-32.4	3124	55.7	52.3-59.0

No significant differences were detected in the prevalence of central obesity by urban/rural locality.

Table 38. Prevalence of central obesity (by locality)

Locality	Male (waist circumference \geq 90 cm)			Female (waist circumference \geq 80 cm)		
	n	%	95% CI	n	%	95% CI
Urban	992	31.7	26.6-36.8	1511	53.1	48.8-57.4
Rural	1216	26.9	22.9-30.9	1613	58.6	53.5-63.6
Total	2208	29.1	25.8-32.4	3124	55.7	52.3-59.1

The prevalence of central obesity was 31.7% (95% CI 26.6-36.8) in urban men, 53.1% (95% CI 48.8-57.4) in urban women, 26.9% (95% CI 22.9-30.9) in rural men and 58.6% (95% CI 53.5-63.6) in rural women.

Body fat

In this survey, body fat % was measured in 5215 participants (2167 males and 3048 females) by using “GIMA” bioimpedance device.

Mean body fat of men aged 15 – 64 years was above the reference value or 22.2% (95% CI 21.4-23.0), while for women was within normal range or 29.3% (95% CI 28.5-30.2) (Table 39).

Men aged 25 and above, and women aged 35 and above had mean body fat content above reference values, i.e. were obese. In 45–64 age group one in four men and one in three women had increased body fat content, i.e. were obese (Table 39).

Table 39. Mean body fat % (by age and gender)

Age Group (years)	Male			Female*		
	N	Mean	95%CI	N	Mean	95%CI
15-24	391	17.9	16.7-19.2	464	24.3	23.3-25.3
25-34	592	22.3	20.8-23.7	842	28.7	27.7-29.6
35-44	558	25.1	23.9-26.4	846	32.4	31.6-33.1
45-54	408	26.6	25.5-27.7	607	35.0	33.9-36.2
55-64	218	28.2	26.6-29.7	289	37.2	34.5-39.8
15-64	2167	22.2	21.4-23.0	3048	29.3	28.5-30.2

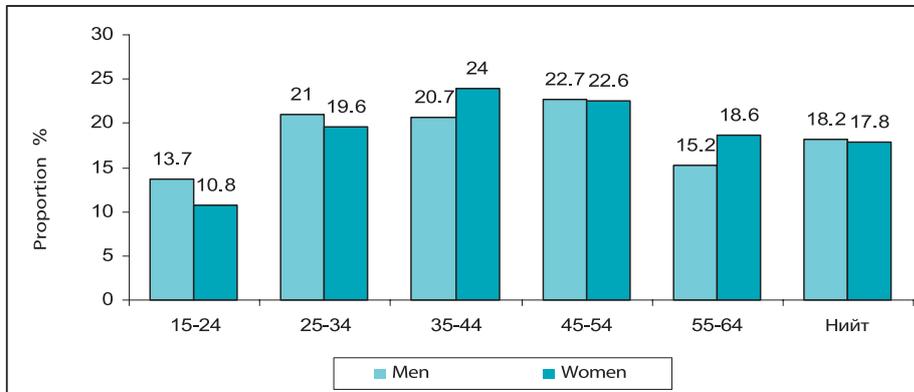
There was no significant difference in mean body fat % between urban and rural survey participants (Table 40).

Table 40. Mean body fat % (by locality)

Locality	Male			Female*		
	N	Mean	95%CI	N	Mean	95%CI
Urban	958	21.6	20.6-22.6	1447	29.4	28.3-30.6
Rural	1209	22.7	21.6-23.9	1601	29.3	28.1-30.4
Total	2167	22.2	21.4-23.0	3048	29.3	28.5-30.2

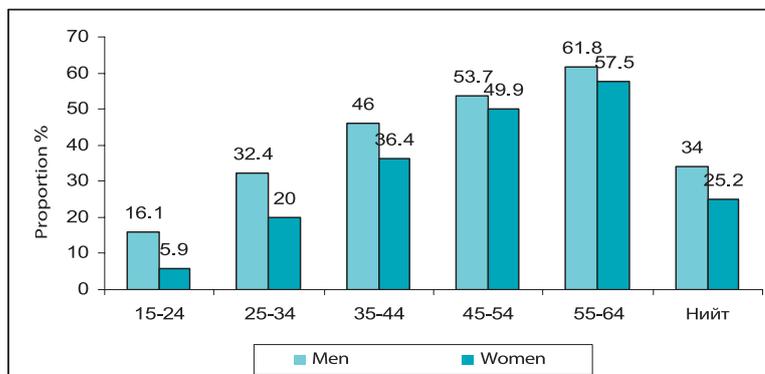
Mean body fat % was 21.6% (95% CI 20.6-22.6) in urban men, 29.4% (95% CI 28.3-30.6) in urban women, 22.7% (95% CI 21.6-23.9) in rural men and 29.3% (95% CI 28.1-30.4) in rural women (Table 40).

The survey results demonstrated that the proportion of men with high and very high body fat content was relatively higher compared to women. Prevalence of increased body fat content was 28.2% (95% CI 16.0-20.4) in men and 17.8% (95% CI 15.6-19.9) in women (Figure 14).

Figure 15. Proportion with increased body fat content, by age and gender

Analysis of data on the prevalence of very high body fat content by age and gender revealed that body fat content directly correlated with age. In particular, the proportion of women with very high content of body fat increased with age, and the trend was statistically significant. Body fat % in 15 – 34 year-old men increased with age, and more than a half of men aged 35 – 64 years had very high body fat % (Figure 15).

Proportion of men with very high body fat % (i.e. obesity) was 34% (95% CI 29.9-38.1), and the proportion of their female counterparts was 25.2% (95% CI 22.1-28.2) (Figure 16).

Figure 16. Proportion of population with increased body fat, by age and gender

Proportion of men with very high body fat % was relatively higher compared to their female counterparts. It was 3.8 and 4.3% higher in men aged 45–54 and 55–64 than in women of the same age.

No significant difference was detected in the prevalence of very high body fat content or obesity in 15–64 year-old men vs. their female counterparts.

Table 41. Proportion of population with increased body fat, by stratum

Байршил	N	Body fat category							
		Small		Normal		High		Very high	
		%	95%CI	%	95%CI	%	95%CI	%	95%CI
Male									
Urban	958	6.5	3.0-10.0	41.6	34.1-49.1	17.6	14.1-21.2	34.3	28.8-39.8
Rural	1209	3.2	1.5-4.8	44.4	38.7-50.2	18.7	15.8-21.5	33.8	27.9-39.6
Total	2167	4.6	2.7-6.6	43.2	38.5-47.9	18.2	16.0-20.4	34.0	29.9-38.1
Female									
Urban	1447	15.2	10.0-20.4	41.1	37.9-44.4	16.8	13.7-20.0	26.9	22.7-31.1
Rural	1601	14.1	9.7-18.5	43.8	39.9-47.7	18.7	16.0-21.5	23.4	19.3-27.4
Total	3048	14.7	11.2-18.1	42.4	39.8-45.0	17.8	15.6-19.9	25.2	22.1-28.2

The proportion of men with very high body fat was 34.3% (95% CI 28.8-39.8) in urban and 33.8% (95% CI 27.9-39.6) in rural areas. Similarly, the prevalence of very high body fat or obesity in 15–64 year-old women was not significantly different in urban vs. rural areas or 26.9% (95% CI 22.7-31.1) and 23.4% (95% CI 19.3-27.4), respectively.

Conclusions

1. Mean body weight and height of Mongolian men was 68.3 kg and 167.4 cm, respectively. For women, mean body weight was 61.7kg and height was 157. cm.
2. Mean BMI was 24.3 in men and 24.9 in women. According to BMI risk assessment 39.8% of population was overweight or obese, with 27.3% overweight and 12.5% obese.
3. Prevalence of overweight and obesity tended to increase with age, and the proportion of overweight or obese women in all age groups was higher compared to their male counterparts.
4. Prevalence of central obesity was 29.1% in 15–64 year-old men and 55.7% in women; Seven in ten women above the age of 35 were centrally obese.
5. Body fat % was high or very high in 43% of men and 52.2% of women. Body fat % tended to increase with age irrespective of gen

Biochemical risk factors for NCDs

One in three survey participants were tested for blood glucose and cholesterol, and additionally for triglycerides, LDL and HDL.

Results of the assessment of blood glucose are presented in “Diabetes” part of the report. Therefore, in the current section only results of blood lipid testing are discussed.

Blood cholesterol

Survey participants receiving cholesterol-lowering treatment were not excluded from blood cholesterol testing. Mean blood cholesterol of the surveyed population was 4.4 mmol/L, and stratification by gender showed no significant difference (4.5 mmol/L in men vs. 4.2 mmol/L in women) (Table 42). Mean blood cholesterol levels tended to increase with age in both sexes, however the difference was not statistically significant.

Table 42. Mean total cholesterol (mmol/L)

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	193	4.4	4.1-4.7	272	4.2	3.8-4.6	465	4.3	4.0-4.6
35-44	193	4.4	4.0-4.7	304	4.1	4.0-4.3	497	4.3	4.0-4.5
45-54	136	4.6	4.3-5.0	232	4.4	4.1-4.7	368	4.5	4.2-4.8
55-64	84	4.7	4.2-5.3	124	4.4	4.0-4.8	208	4.6	4.1-5.0
25-64	606	4.5	4.2-4.7	932	4.2	4.0-4.4	1538	4.4	4.1-4.6

The proportion of the population with or at risk of increased blood cholesterol (≥ 5.0 mmol/L) was 25.0% (95% CI 19.4-30.5), and no significant gender difference was observed with the prevalence of 22.5 (95% CI 16.8-28.2) in women and 27.4% (95% CI 20.9-33.9) in men. The prevalence of elevated blood cholesterol was likely to increase with age.

Table 43. Total cholesterol ≥ 5.0 mmol/L or ≥ 190 mg/dl or currently on medication for raised cholesterol

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	193	21.2	14.6-27.7	272	20.6	12.0-29.1	465	20.9	14.4-27.4
35-44	193	27.9	19.4-36.5	304	18.5	12.8-24.3	497	23.2	16.9-29.5
45-54	136	33.6	22.0-45.2	232	27.9	18.6-37.2	368	30.8	21.9-39.7
55-64	84	36.0	19.6-52.3	124	29.1	19.0-39.1	208	32.3	20.9-43.6
25-64	606	27.4	20.9-33.9	932	22.5	16.8-28.2	1538	25.0	19.4-30.5

The proportion of the population with increased blood cholesterol (≥ 6.2 mmol/L) was 8.5% (95% CI 5.4-11.6) in the study population, and no gender difference was observed. The prevalence of elevated blood cholesterol was the highest in men of 55-64 years, although the difference was not statistically significant different from other age groups.

Table 44. Percentage with total cholesterol ≥ 6.2 mmol/L or ≥ 240 mg/dl or currently on medication for raised cholesterol

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	193	7.4	2.9-11.9	272	8.9	1.6-16.1	465	8.1	3.4-12.9
35-44	193	8.2	2.6-13.8	304	4.0	1.9-6.2	497	6.1	3.0-9.2
45-54	136	13.4	3.6-23.2	232	6.7	3.1-10.4	368	10.1	4.3-15.9
55-64	84	19.6	4.8-34.4	124	8.1	3.4-12.7	208	13.4	5.3-21.6
25-64	606	10.2	5.9-14.4	932	6.8	3.4-10.2	1538	8.5	5.4-11.6

Triglycerides

Blood triglyceride level is one of the risk factors for cardiovascular diseases and diabetes. Mean blood triglyceride level in the study population was 1.3 mmol/L (95% CI 1.2-1.4). Men had significantly higher mean blood triglyceride level (1.5 mmol/L) compared to women (1.1 mmol/L). There was no significant differences in the mean triglyceride level in regard to age (Table 45).

Table 45. Mean fasting triglycerides (mmol/L)

Age Group (years)	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
25-34	185	1.5	1.3-1.6	260	1.1	1.0-1.2	445	1.3	1.1-1.4
35-44	185	1.6	1.3-1.8	298	1.1	1.0-1.2	483	1.3	1.2-1.5
45-54	129	1.7	1.1-2.2	221	1.2	1.0-1.5	350	1.4	1.1-1.8
55-64	83	1.3	1.1-1.5	120	1.2	1.0-1.3	203	1.2	1.1-1.3
25-64	582	1.5	1.4-1.7	899	1.1	1.1-1.2	1481	1.3	1.2-1.4

The proportion of the population with or at risk of increased blood triglyceride level (≥ 1.7 mmol/L) was 22.4% (95% CI 18.4-26.3), and the risk was significantly higher in men 29.5% (95% CI 23.7-35.3) than in women 15.4% (11.8-19.0). There was no statistically significant difference in the proportion with regard to age.

Table 46. Percentage of respondents with fasting triglycerides ≥ 1.7 mmol/L or ≥ 150 mg/dl

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	185	27.1	19.3-35.0	260	14.2	9.4-19.0	445	20.8	15.9-25.7
35-44	185	35.5	27.0-44.1	298	15.4	9.8-21.0	483	25.2	19.1-31.3
45-54	129	27.8	14.7-41.0	221	18.6	11.4-25.7	350	23.2	14.3-32.0
55-64	83	24.0	12.0-36.0	120	13.0	6.0-19.9	203	18.1	12.6-23.6
25-64	582	29.5	23.7-35.3	899	15.4	11.8-19.0	1481	22.4	18.4-26.3

The proportion of the population with increased blood triglycerides was 16.4% (95% CI 12.8-20.0) in the study population, and the prevalence was higher in males 23.6% (95% CI 17.5-29.7) compared to females 9.4% (95% CI 6.9-11.8). The proportion of the population with increased blood triglycerides was not different in regard to age.

Table 47. Percentage of respondents with fasting triglycerides ≥ 2.0 mmol/L or ≥ 180 mg/dl

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	185	20.2	12.4-27.9	260	6.9	3.5-10.2	445	13.7	9.3-18.0
35-44	185	28.9	20.0-37.8	298	9.8	5.9-13.7	483	19.1	13.2-25.0
45-54	129	24.9	11.9-37.8	221	13.1	6.7-19.4	350	18.9	10.5-27.3
55-64	83	17.8	5.6-29.9	120	9.2	3.5-14.9	203	13.2	7.6-18.9
25-64	582	23.6	17.5-29.7	899	9.4	6.9-11.8	1481	16.4	12.8-20.0

Blood levels of low density lipoprotein (LDL)

Mean blood LDL was 3.4 mmol/L (95% CI 3.2-3.5) in the study population, and there were no significant differences with regards to age and gender.

Table 48. Mean blood LDL (mmol/L)

Age Group (years)	Men			Women			Both Sexes		
	N	%	95% CI	N	%	95% CI	N	%	95% CI
25-34	201	3.3	3.1-3.5	279	3.2	3.1-3.4	480	3.3	3.1-3.4
35-44	204	3.3	3.1-3.5	326	3.3	3.1-3.4	530	3.3	3.1-3.5
45-54	146	3.6	3.3-3.9	235	3.6	3.4-3.8	381	3.6	3.4-3.8
55-64	89	3.5	3.1-3.8	126	3.5	3.2-3.7	215	3.5	3.3-3.7
Total	640	3.4	3.2-3.6	966	3.4	3.2-3.5	1606	3.4	3.2-3.5

The proportion of the population at risk or with increased blood LDL (≥ 3.0 mmol/L) was 62.6% (95% CI 57.3-67.8), and no statistically significant differences were detected between different age and gender groups.

Table 49. Proportion of population with or at risk of increased blood LDL (≥ 3.0 mmol/L)

Age Group (years)	Men			Women			Both Sexes		
	N	%	95% CI	N	%	95% CI	N	%	95% CI
25-34	201	58.8	47.3-70.3	279	59.3	51.2-67.4	480	59.0	51.9-66.2
35-44	204	64.3	56.3-72.3	326	55.3	47.0-63.5	530	59.7	52.9-66.5
45-54	146	66.6	56.4-76.9	235	72.2	65.2-79.1	381	69.3	62.1-76.4
55-64	89	69.3	58.4-80.3	126	69.3	57.7-80.9	215	69.3	61.3-77.3
Total	640	63.3	56.9-69.6	966	61.9	55.9-67.8	1606	62.6	57.3-67.8

The prevalence of elevated blood LDL (≥ 4.15 mmol/L) was 20.2% (95% CI 15.4-25.0) in the study population. No significant difference was observed between men and women. The prevalence was the highest (28.6%) in 45-54 year age group, and the lowest (18.1%) in 25-34 year age group.

Table 50. Proportion of population with increased LDL (≥ 4.15 mmol/L)

Age Group (years)	Men			Women			Both Sexes		
	N	%	95% CI	N	%	95% CI	N	%	95% CI
25-34	201	22.2	14.4-30.0	279	13.7	7.9-19.5	480	18.1	12.2-24.0
35-44	204	13.4	6.3-20.6	326	17.0	11.5-22.4	530	15.2	10.2-20.3
45-54	146	30.7	19.3-42.1	235	26.3	19.0-33.6	381	28.6	20.1-37.0
55-64	89	23.7	10.8-36.6	126	26.1	16.5-35.7	215	25.0	18.1-31.9
Total	640	21.6	15.4-27.8	966	18.8	14.4-23.2	1606	20.2	15.4-25.0

Blood levels of high density lipoprotein (HDL)

Mean blood HDL was 1.5 mmol/L (95%CI 1.5-1.6) in the study population, and there were no significant differences with regards to age and gender.

Table 51. Mean blood HDL (mmol/L)

Age Group (years)	Men			Women			Both Sexes		
	N	%	95% CI	N	%	95% CI	N	%	95% CI
25-34	200	1.6	1.4-1.7	272	1.6	1.5-1.7	472	1.6	1.5-1.7
35-44	200	1.5	1.4-1.6	320	1.6	1.4-1.7	520	1.5	1.4-1.7
45-54	143	1.5	1.4-1.6	233	1.6	1.5-1.7	376	1.6	1.5-1.7
55-64	88	1.5	1.4-1.7	126	1.5	1.4-1.7	214	1.5	1.4-1.7
Total	631	1.5	1.4-1.6	951	1.6	1.5-1.7	1582	1.5	1.5-1.6

Blood HDL level below 1.03 mmol/L in men and below 1.29 mmol/L in women is a risk factor for NCDs, and the prevalence of decreased blood HDL was significantly higher in women (31.7%; 95% CI 23.4-40.0) compared to men (11.6%; 95% CI 7.2-16.1).

Table 52. Proportion of population with decreased LDL (mmol/L)

Age Group (years)	Men (<1.03 mmol/L)			Woman (<1.29 mmol/L)		
	N	%	95% CI	N	%	95% CI
25-34	200	14.9	6.4-23.4	272	29.9	20.0-39.8
35-44	200	14.2	7.7-20.6	320	30.6	20.9-40.2
45-54	143	4.4	1.0-7.8	233	33.0	22.8-43.1
55-64	88	7.9	0.8-14.9	126	37.9	22.9-52.9
Total	631	11.6	7.2-16.1	951	31.7	23.4-40.0

Conclusions

1. The prevalence of the high risk cholesterol category or hypercholesterolemia in the population was 25% and the prevalence of hypercholesterolemia was 8.5%.
2. The prevalence of the high risk triglyceride category or hypertriglyceridemia in the population was 22.4% with significantly higher prevalence in men (29.5%) compared to women (15.4%).
3. Increased blood level of LDL is a risk factor for cardiovascular diseases, and the proportion of population at risk or with increased blood LDL was 62.7%
4. The proportion of women at risk or with decreased blood HDL cholesterol was 31.7% and it was 11.6% in men.

Hypertension

Hypertension as a risk factor for NCDs was assessed using questionnaire and physical measurements.

Mean blood pressure

Mean systolic blood pressure (SBP) was 125.6 mmHg (95% CI 124.3-127.0) in the study population in general, and 129.8 mmHg (95% CI 128.4-131.1) in men and 121.4 mmHg (95% CI 120.0-122.9) in women. Mean SBP was higher in men compared to women. Mean diastolic blood pressure (DBP) was 78.9 mmHg (95% CI 78.1-79.6) in the study population in general, and 79.6 mmHg (95% CI 78.7-80.5) in men and 78.1 mmHg (95% CI 77.3-78.9) in women. No significant difference was detected between genders (Table 53).

In urban participants mean SBP was 124.7 mmHg (95% CI 122.9-126.6) and mean DBP was 78.6 mmHg (95% CI 77.4-79.9), while in rural participants the corresponding means were 126.5 mmHg (95% CI 124.8-128.3) and 79.1 mmHg (95% CI 78.3-79.9). The difference in SBP and DBP between urban and rural participants was not statistically significant (Table 53).

Table 53. Mean blood pressure (by gender and locality)

		Systolic blood pressure, mmHg			Diastolic blood pressure, mmHg		
		n	Mean	95% CI	n	Mean	95% CI
Gender	Male	2209	129.8	128.4-131.1	2209	79.6	78.7-80.5
	Female	3192	121.4	120.0-122.9	3192	78.1	77.3-78.9
	Total	5401	125.6	124.3-127.0	5401	78.9	78.1-79.6
Locality	Urban	2524	124.7	122.9-126.6	2524	78.6	77.4-79.9
	Rural	2877	126.5	124.8-128.3	2877	79.1	78.3-79.9

Hypertension

The prevalence of hypertension was 27.3% (95% CI 24.9-29.8) in the study population, 31.5% (95% CI 28.3-34.7) in men and 23.2% (95% CI 20.7-25.7) in women. The prevalence of hypertension in men was higher than in women.

The prevalence of hypertension increased with age. In men it was 54.9% in 45-54 year age group, 71.3% in 55-64 year age group, and was similar in 25-34 (29.1%; 95% CI 24.5-33.7) and 35-44 (35%; 95% CI 29.9-40.2) year-olds. In women, the prevalence increased with age, and reached 52.1% in 45-54 year age group and 66% in 55-64 year age group (Table 54).

Table 54. Percentage with SBP \geq 140 and/or DBP \geq 90 mmHg or currently on medication for raised blood pressure

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
15-24	403	15.5	9.7-21.3	494	6.6	3.7-9.4	897	11.2	7.7-14.7
25-34	601	29.1	24.5-33.7	921	14.0	10.0-18.0	1522	21.6	17.9-25.4
35-44	564	35.0	29.9-40.2	869	31.4	27.2-35.6	1433	33.2	29.6-36.9
45-54	418	54.9	49.1-60.7	624	52.1	47.0-57.1	1042	53.5	49.6-57.4
55-64	223	71.3	65.7-77.0	297	61.0	54.6-67.3	520	66.0	61.8-70.2
15-64	2209	31.5	28.3-34.7	3205	23.2	20.7-25.7	5414	27.4	25.0-29.8

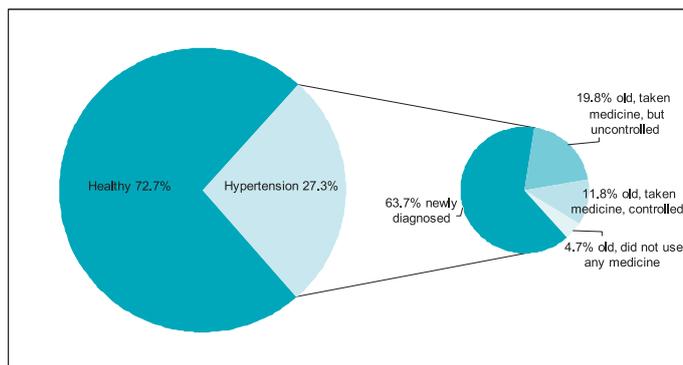
The prevalence of hypertension was 25.3% (95% CI 21.8-28.8) in urban and 29.3% (95% CI 26.1-32.6) in rural settings with no significant differences between genders when stratified by locality (Table 55).

Table 55. Percentage with SBP \geq 140 and/or DBP \geq 90 mmHg or currently on medication for raised blood pressure (by gender and locality)

Gender	Urban			Rural			Total		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Male	990	30.7	26.0-35.3	1219	32	27.6-36.5	2209	31.4	28.2-34.6
Female	1540	20.4	17.1-23.7	1665	26.2	22.5-29.9	3205	23.2	20.6-25.8
Total	2530	25.3	21.8-28.8	2884	29.3	26.1-32.6	5414	27.3	24.9-29.8

Out of those with hypertension, 63.7% (95%CI 59.8-67.6) were newly diagnosed. In regard to gender, 74.3% (95%CI 69.7-78.9) of males and 48.7% (95%CI 44.0-53.4) of females were diagnosed newly. Among those diagnosed previously, 19.8% (95%CI 44.0-53.4) were taking medicine for raised blood pressure but uncontrolled, 11.8% reported to be controlled by medicine and 4.7% did not use any medicine (Figure 17).

Figure 17 Respondents with treated and/or controlled raised blood pressure



Treatment and follow-up of hypertension Of those with hypertension, 61.1% (95% CI 56.4-65.8) were not on anti-hypertensive medication, 25.6% (95% CI 22.1-29.2) were on anti-hypertensive medication, but still had high blood pressure or did not monitor it, and only 13.3% were successfully controlled with medication (Table 56).

Analysis of hypertension control by gender demonstrated that 71.9% (95% CI 66.6-77.2) of hypertensive men and 46.0% (95% CI 40.8-51.1) of hypertensive women were not on medication. Out of those successfully controlled with anti-hypertensive drugs, 21.4% (95% CI 17.6-25.1) were women and 7.5% (95% CI 4.3-10.7) were men. Prevalence of uncontrolled hypertension was high in both men and women.

Table 56. Respondents with treated and/or controlled raised blood pressure

		On medication and SBP<140 and DBP<90			On medication and SBP≥140 and/or DBP≥90		Not on medication and SBP≥140 and/or DBP≥90	
		n	%	95% CI	%	95% CI	%	95% CI
Gender	Male	810	7.5	4.3-10.7	20.6	16.5-24.7	71.9	66.6-77.2
	Female	931	21.4	17.6-25.1	32.7	28.2-37.2	46.0	40.8-51.1
	Total	1741	13.3	10.7-15.8	25.6	22.1-29.2	61.1	56.4-65.8
Locality	Urban	789	12.5	9.2-15.7	27.6	23.5-31.6	60	55.0-64.9
	Rural	952	13.9	10.1-17.8	24	18.5-29.5	62.1	54.6-69.6

Blood pressure measurement status

42.6% (95% CI 39.7-45.4) of the study population had never had their blood pressure measured. Of them, 50.5% (95% CI 47.2-53.7) were males and 34.5% (95% CI 31.0-37.9) were females. Out of those who had blood pressure measurements, 37.3% (95% CI 34.5-40.2) had never been previously diagnosed with hypertension, 3.7% (95% CI 2.8-4.6) had been diagnosed more than 12 months ago, and 16.4% (95% CI 14.8-17.9) – within past 12 months (Annex I.43-45).

Non-medication treatment of hypertension The study participants who had previously been diagnosed with hypertension were asked whether they had received non-medication treatment such as special dieting, and advice to lose weight, stop smoking and engage in physical activity. Out of those who received counseling from medical practitioners, 44.1% (95% CI 38.2-49.9) were advised to limit salt intake, 28.7% (95% CI 22.5-34.9) – to control excess weight, 17.6% (95% CI 13.5-21.8) – to quit smoking, 44.2% (95% CI 37.8-50.7) – to engage in physical activity. The above data suggested that non-medication treatment options were under-utilized, medical practitioners did not provide sufficient counseling on weight loss and smoking cessation, and patients largely ignored such treatment options. Only 8% of study participants with hypertension sought traditional medicine services with no significant difference between gender and age groups (Annex I.46-50)

Conclusions:

1. Mean SBP was 129.8 mmHg in 15-64 year-old Mongolian men and 121.4 mmHg in their female counterparts, and it was significantly higher in men than in women.
2. Prevalence of hypertension among Mongolian aged 15-64 years was 27.3%. Men had significantly higher prevalence of hypertension compared to women.
3. There was no significant difference in the prevalence of hypertension between urban and rural population.
4. Women were more likely to monitor their blood pressure compared to men.
5. Non-medication treatment options were underutilized, medical practitioners did not provide sufficient counseling on weight loss and smoking cessation, and patients largely ignored such treatment options.
6. Medicinal treatment of people with hypertension was insufficient or ineffective, and the prevalence of uncontrolled hypertension was high irrespective of gender.

Diabetes

The prevalence of diabetes was defined in accordance with widely used traditional epidemiological classification of diabetes, according to which participants with fasting blood glucose less than 6.1 mmol/L who had previously been diagnosed with diabetes, but were not taking anti-diabetes medication were included in a normal group, and participants with fasting blood glucose between 5.6-6.1 mmol/L were included into a group of people with impaired fasting glucose (IFG).

Blood glucose

Mean fasting blood glucose was 4.7 mmol/L (95% CI 4.6-4.9) in 25-64 year-old study population, 4.8 mmol/L (95% CI 4.6-5.0) in men and 4.7 mmol/L (95% CI 4.5-4.8) in women. Although mean blood glucose appeared to be higher in men than in women, especially in 45-54 year-olds, the difference was not statistically significant (Table 57).

Table 57. Mean fasting blood glucose (mmol/L), by age and gender

Age	Male			Female			Total		
	N	Mean	95% CI	N	Mean	95% CI	N	Mean	95% CI
25-34	180	4.8	4.6-5.0	263	4.6	4.4-4.7	443	4.7	4.5-4.8
35-44	178	4.8	4.5-5.1	300	4.7	4.4-4.9	478	4.7	4.5-4.9
45-54	131	5.1	4.6-5.5	220	4.7	4.5-5.0	351	4.9	4.6-5.2
55-64	84	4.7	4.4-5.1	113	4.8	4.5-5.1	197	4.8	4.5-5.1
25-64	573	4.8	4.6-5.0	896	4.7	4.5-4.8	1469	4.7	4.6-4.9

Test results of 1470 tested participants were stratified by locality, and the stratification demonstrated that mean fasting blood glucose was 4.9 mmol/L (95% CI 4.7-5.2) in urban and 4.6 mmol/L (95% CI 4.4-4.7) in rural study population. A total of 573 men were tested, and mean fasting glucose was 5.1 mmol/L (95% CI 4.7-5.4) in rural and 4.6 mmol/L (95% CI 4.4-4.8) in urban men. For 897 women tested, mean fasting glucose was 4.8 mmol/L (95% CI 4.6-5.0) in urban and 4.5 mmol/L (95% CI 4.3-4.7) in rural settings (Table 58).

Table 58. Mean fasting blood glucose (mmol/L), by locality

Locality	Male			Female			Total		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
Urban	287	5.1	4.7-5.4	440	4.8	4.6-5.0	727	4.9	4.7-5.2
Rural	286	4.6	4.4-4.8	457	4.5	4.3-4.7	743	4.6	4.4-4.7
Total	573	4.8	4.6-5.0	897	4.7	4.5-4.8	1470	4.7	4.6-4.9

Impaired fasting glucose (IFG): 9.5% (95% CI 7.4-11.5) of the study population had impaired fasting glucose. IFG was detected in 11.5% (95% CI 8.5-14.5) of men and 7.5% (95% CI 4.5-10.4) of women. Analysis of IFG data by age demonstrated that its prevalence was the highest in 35-44 year-old men (14.5%; 95% CI 8.6-20.3) and 55-64 year-old women (14%; 95% CI 2.2-25.7) (Table 59).

Table 59. Impaired Fasting Glycaemia (by age group)

Age	Male			Female			Total		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	180	11.5	6.1-16.9	263	3.0	0.7-5.4	443	7.2	4.3-10.1
35-44	178	14.5	8.6-20.3	300	8.2	4.6-11.8	478	11.2	7.5-14.9
45-54	132	8.3	2.5-14.2	221	8.9	4.6-13.2	353	8.6	4.8-12.4
55-64	84	9.6	2.9-16.3	113	18.0	0.0-38.3	197	14.0	2.2-25.7
25-64	574	11.5	8.5-14.5	897	7.5	4.5-10.4	1471	9.5	7.4-11.5

Test results of 1472 tested participants were stratified by locality, and the stratification demonstrated that prevalence of IFG (capillary whole blood glucose levels between 5.6-6.1 mmol/L) was 11.7% (95% CI 8.6-14.8) in urban, which was higher than 7.3% (95% CI 4.8-9.7) in rural population. A total of 574 men were tested, and the prevalence of IFG was 13.2% (95% CI 9.2-17.3) in urban and 9.8% (95% CI 5.4-14.3) in rural men. For 898 women tested, the prevalence of IFG was 10.3% (95% CI 5.4-15.1) in urban and 4.7% (95% CI 2.5-7.0) in rural settings (Table 60).

Table 60. Impaired Fasting Glycaemia (by gender and locality)

Locality	Male			Female			Total		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Urban	288	13.2	9.2-17.3	440	10.3	5.4-15.1	728	11.7	8.6-14.8
Rural	286	9.8	5.4-14.3	458	4.7	2.5-7.0	744	7.3	4.8-9.7
Total	574	11.5	8.5-14.5	898	7.5	4.5-10.5	1472	9.5	7.3-11.6

Raised blood glucose

Prevalence of diabetes was 6.5% (95% CI 4.5-8.4) in the study population. The prevalence was 8.9% (95% CI 5.0-12.7) in men and 4.1% (95% CI 2.0-6.2) in women. The difference between genders was not statistically significant.

Table 61. Raised blood glucose or currently on medication for diabetes (by age group)

Age	Male			Female			Total		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
25-34	180	5.1	1.5-8.8	263	3.2	0.6-5.9	443	4.2	1.9-6.5
35-44	178	6.9	2.9-10.9	300	5.3	2.0-8.6	478	6.1	3.6-8.6
45-54	132	17.4	5.2-29.5	221	4.3	0.9-7.8	353	10.9	4.5-17.3
55-64	84	9.7	2.1-17.3	113	3.3	0.0-7.0	197	6.4	2.5-10.3
25-64	574	8.9	5.0-12.7	897	4.1	2.0-6.2	1471	6.5	4.5-8.4

Prevalence of diabetes was 8.9% (95% CI 5.8-12.0) in urban study participants, which was higher than 4.1% (95% CI 2.0-6.1) of their rural counterparts. When stratified by gender, 14.2% (95% CI 7.4-21.0) of urban men, 3.8% (95% CI 1.3-6.2) of rural men, 3.9% (95% CI 1.0-6.9) of urban women and 4.3% (95% CI 1.5-7.2) or rural women had diabetes (Table 62).

Table 62. Raised blood glucose or currently on medication for diabetes (by gender and locality)

Locality	Male			Female			Total		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Urban	288	14.2	7.4-21.0	440	3.9	1.0-6.9	728	8.9	5.8-12.0
Rural	286	3.8	1.3-6.2	458	4.3	1.5-7.2	744	4.1	2.0-6.1
Total	574	8.9	4.8-12.9	898	4.1	2.1-6.2	1472	6.5	4.4-8.5

Diagnosis of diabetes and blood glucose testing

A total of 5438 people (2217 males and 3221 females) participated in a questionnaire survey. Of them, 85.2% (95% CI 83.5-86.9) had never had blood glucose testing, 12.3% (95% CI 10.8-13.7) had testing but were not diagnosed with diabetes, 0.9% (95% CI 0.6-1.2) had no blood glucose testing in the past 12 months, and 1.7% (95% CI 1.3-2.1) were tested in the past 12 months. Among men, 88.2% (95% CI 86.2-90.1) had never had blood glucose testing, 9.5% (95% CI 7.8-11.3) had testing but were not diagnosed with diabetes, 0.6% (95% CI 0.3-0.9) had no blood glucose testing in the past 12 months, and 1.7% (95% CI 1.0-2.5) were tested in the past 12 months. Among women, 82.1% (95% CI 80.0-84.3) had never had blood glucose testing, 15.1% (95% CI 13.2-16.9) had testing but were not diagnosed with diabetes, 1.2% (95% CI 0.7-1.7) had no blood glucose testing in the past 12 months, and 1.6% (95% CI 1.2-2.0) were tested in the past 12 months. In terms of age difference, 15-24 year-olds were most likely not to have blood glucose testing (92.4%, 95% CI 90.5-94.3), while 45-54 year-olds were most likely to have blood glucose testing in the past 12 months (3.4%, 95% CI 2.2-4.6) (Annex I.51-53).

Treatment of diabetes

A total of 170 study participants were asked whether they received diabetes treatment or counseling, which revealed that 16.7% (95% CI 10.0-23.5) were taking diabetes drugs (males: 16.3%, 95% CI 4.7-27.9; females: 17.1%, 95% CI 8.7-25.4), and 9.9% (95% CI 3.4-16.3) were on insulin treatment (males: 14%, 95% CI 1.3-26.7; females: 6.3%, 95% CI 1.9-10.8), (Annex I.54-55).

The following proportion of the study participants reported receiving counseling: on diet – 45.4% (95% CI 32.6-58.1) (males: 51.6%, 95% CI 32.9-70.4; females: 40%, 95% CI 27.0-53.0), on weight loss – 36.1% (95% CI 24.5-47.7) (males: 29.4%, 95% CI 13.4-45.5; females: 41.8%, 95% CI 27.6-56), on smoking cessation – 23.3% (95% CI 12.1-34.5) (males: 38.0%, 95% CI 18.0-58.0; females: 10.8%, 95% CI 4.3-17.3), on increasing the level of physical activity – 52.4% (95% CI 40.8-63.9) (males: 59.0%, 44.4-73.5; females: 46.7%, 95% CI 33.6-59.9), (Annex I.56-59).

Conclusions

1. Mean fasting blood glucose was 4.7 mmol/L in the study population, 4.8 mmol/L in males, 4.7 mmol/L in females, 4.9 mmol/L in urban and 4.6 mmol/L in rural population.
2. Prevalence of IFG was 9.5% in the study population, 11.5% in males, 7.5% in females, 11.7% in urban and 7.3% in rural population.
3. Prevalence of diabetes was 6.5% in the study population, 8.9% in males, 4.1% in females, 8.9% in urban and 4.1% in rural population.

Breast and Cervical cancer

Cervical cancer

The survey participants were asked whether they had Visual Inspection with Acetic Acid (VIA) and/or Pap smear for early detection of cervical cancer, and at what time interval they had repeated screening if any (Table 63).

Table 63. Percentage who have had a VIA test and PAP SMEAR test (by age)

Test	Age	n	% had exam	95%CI	% has not had exam	95%CI
VIA	15-24	471	0.9	0.0-1.8	99.1	98.2-100.0
	25-34	855	4.0	2.3-5.6	96.0	94.4-97.7
	35-44	827	10.3	7.5-13.1	89.7	86.9-92.5
	45-54	569	9.6	6.3-12.8	90.4	87.2-93.7
	55-64	277	8.1	4.4-11.8	91.9	88.2-95.6
	15-64	2999	5.2	4.2-6.1	94.8	93.9-95.8
Pap smear	15-24	470	2.2	0.6-3.9	97.8	96.1-99.4
	25-34	860	10.6	7.5-13.6	89.4	86.4-92.5
	35-44	823	19.9	16.2-23.7	80.1	76.3-83.8
	45-54	570	21.5	17.9-25.0	78.5	75.0-82.1
	55-64	276	19.3	13.3-25.3	80.7	74.7-86.7
	15-64	2999	11.4	9.9-13.0	88.6	87.0-90.1

Cervical cancer screening coverage was very low with only 5.2% (95% CI 4.2-6.1) of surveyed women having had VIA and 11.4% (95% CI 9.9-13.0) – Pap smear.

Analysis of data by age groups demonstrated that 35-54 year-old women were most likely to undergo screening. For instance, 10.3% (95% CI 7.5-13.1) of 35-44 year-old and 9.6% (95% CI 6.3-12.8) of 45-54 year-old women had VIA, while the corresponding numbers for Pap smear testing were 19.9 (95% CI 16.2-23.7) and 21.5 (95% CI 17.9-25.0) % (Table 64).

Table 64. Cervical cancer screening (by locality)

Test	Locality	n	% screened	95%CI	% unscreened	95%CI
VIA	Urban	1465	4,8	3,4-6,3	95,2	93,7-96,6
	Rural	1534	5,5	4,3-6,7	94,5	93,3-95,7
	Total	2999	5,2	4,2-6,1	94,8	93,9-95,8
Pap smear	Urban	1466	13,1	10,7-15,6	86,9	84,4-89,3
	Rural	1533	9,6	7,9-11,2	90,4	88,8-92,1
	Total	2999	11,4	9,9-13,0	88,6	87,0-90,1
Total	Urban	1476	15.8	13.1-18.5	84.2	81.5-86.9
	Rural	1545	12.9	10.7-15.2	87.1	84.8-89.3
	Total	3,021	14.4	12.6-16.3	85.6	83.7-87.4

Of female survey respondents, 14.4% (95% CI 12.6-16.3) underwent cervical cancer screening, and there was no significant difference between urban and rural women. VIA was performed on 4.8% (95% CI 3.4-6.3) of urban and 5.5% (95% CI 4.3-6.7) of rural women, while significantly more urban women (13.1%; 95% CI 10.7-15.6) had Pap smear testing compared to rural women (9.6%;

95% CI 7.9-11.2). The finding that 85.6% (95% CI 83.7-87.4) of women had never had cervical cancer screening demonstrated significant gaps in the screening program (Table 64).

Breast cancer

The survey participants were asked about breast self-examination, clinical breast examination or mammography, and at what time interval they had repeated screening if any.

Breast cancer screening coverage was very low with only 36.3% (95% CI 31.1-41.6) of respondents reporting breast self-examination, 3.2% (95% CI 2.0-4.3) – clinical breast examination by a medical practitioner and 1.7% (95% CI 1.7-2.3) – mammography (Table 65).

Table 65. Percentage who have had a breast palpation by health care provider, Percentage who have had a mammogram only, Performed self breast exam (by age)

Test	Age group	n	% screened	95%CI	% unscreened	95%CI
Clinical examination	15-24	425	1.9	0.3-3.5	98.1	96.5-99.7
	25-34	738	3.3	1.8-4.8	96.7	95.2-98.2
	35-44	701	4.3	2.4-6.1	95.7	93.9-97.6
	45-54	509	4.0	2.2-5.9	96.0	94.1-97.8
	55-64	258	4.7	1.7-7.7	95.3	92.3-98.3
	15-64	2631	3.2	2.0-4.3	96.8	95.7-98.0
Mammography	15-24	426	0.4	0.0-1.0	99.6	99.0-100.0
	25-34	737	2.4	0.9-3.8	97.6	96.2-99.1
	35-44	701	2.8	1.3-4.2	97.2	95.8-98.7
	45-54	511	2.3	1.0-3.6	97.7	96.4-99.0
	55-64	258	2.6	0.5-4.7	97.4	95.3-99.5
	15-64	2633	1.7	1.2-2.3	98.3	97.7-98.8
Self-examination	15-24	474	28.2	21.2-35.2	71.8	64.8-78.8
	25-34	873	40.1	34.5-45.6	59.9	54.4-65.5
	35-44	840	44.4	37.4-51.3	55.6	48.7-62.6
	45-54	587	43.2	35.8-50.6	56.8	49.4-64.2
	55-64	286	28.5	21.1-35.8	71.5	64.2-78.9
	15-64	3060	36.3	31.1-41.6	63.7	58.4-69.0

Clinical breast examination was the most common in 35-44 (4.3%; 95% CI 2.4-6.1) and 55-64 (4.7%; 95% CI 1.7-7.7) year age group, and mammography – in 35-54 year age group (2.8%; 95% CI 1.3-4.2). The screening coverage increased with age. Significantly more women had clinical breast examination (3.2%; 95% CI 2.0-4.3) compared to mammography (1.7%; 95% CI 1.2-2.3) (Table 65).

There was no difference in proportion of women using breast self-examination, while clinical breast examination and mammography were significantly more common in urban vs. rural areas (Table 66).

Table 66. Breast cancer screening (by locality)

Test	Locality	n	% screened	95%CI	% unscreened	95%CI
Clinical examination	Urban	1287	3.9	1.9-5.9	96.1	94.1-98.1
	Rural	1344	2.3	1.5-3.2	97.7	96.8-98.5
	Total	2631	3.2	2.0-4.3	96.8	95.7-98.0
Mammography	Urban	1288	2.1	1.2-2.9	97.9	97.1-98.8
	Rural	1345	1.3	0.8-1.9	98.7	98.1-99.2
	Total	2633	1.7	1.2-2.3	98.3	97.7-98.8
Self-examination	Urban	1494	39.3	31.1-47.5	60.7	52.5-68.9
	Rural	1566	33.0	27.0-38.9	67.0	61.1-73.0
	Total	3060	36.3	31.0-41.6	63.7	58.4-69.0

Conclusions

1. Cervical cancers screening coverage was very low with only 5.2% of female survey respondents reporting VIA and 11.4% - Pap smear testing.
2. Women aged 35-54 had the highest cervical cancer screening coverage, which was consistent with the fact that cervical cancer incidence was the highest in this age group.
3. Breast cancer screening was also insufficient with 1 in 3 surveyed women reporting breast self-examination, and only 3.2 and 1.7% undergoing clinical breast examination and mammography, respectively.
4. Cervical and breast cancer screening coverage was similar in urban and rural settings.

Discussion

1. There were significant gaps in cervical cancers screening in Mongolia with only 5.2% of female survey respondents reporting VIA and 11.4% - Pap smear testing, which meant that 94.8 and 88.6% of women did not have VIA and Pap smear, respectively.
2. Women aged 35-54 years were most likely to have VIA (10.3 and 9.6) or Pap smear (19.9 and 21.5). The incidence of cervical cancer was also the highest in this age group, which could mean that these tests were performed not as a screening, but rather diagnostic test.
3. More than 80% of cervical cancer cases are from developing countries with no comprehensive cancer screening program (1). In South East Asia cervical cancer rates are high in Mongolia and Korea, moderate in Japan and low in China. Mongolia has the lowest breast cancer rates in the region (2). Screening coverage data is important in planning cervical and breast cancer prevention, screening and treatment activities.
4. Breast cancer screening was also insufficient as demonstrated by the fact that 3.2% of surveyed women had clinical breast examination and 1.7% had mammographic examination.

3.4 INJURY AND VIOLENCE

History of previous injuries and knowledge on injury prevention was assessed in the current study.

Injuries other than traffic

History of previous injuries other than traffic (including falls, burns, cuts, frostbites, poisoning and other injuries), which required medical attention was studied and compared between different gender, age groups and locality.

Proportion of self-reported injuries, which required medical attention was 8% (95% CI 6.8-9.2), and men were 1.7 times more likely to report having an injury (10.1%; 95% CI 8.3-11.8) compared to women (5.9%; 95% CI 4.6-7.10) (Table 67).

Table 67. Self-reported injuries other than traffic (by age and gender)

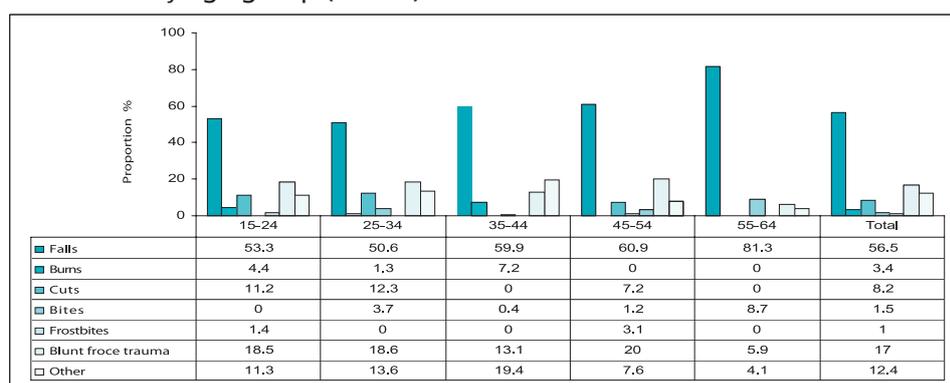
Age	Male			Female			Total		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
15-24	403	11.5	7.3-15.7	495	6.1	3.1-9.1	898	8.9	6.1-11.7
25-34	603	10.9	7.5-14.3	921	3.9	2.3-5.5	1524	7.4	5.4-9.4
35-44	567	8.2	5.9-10.5	874	6.7	4.8-8.5	1441	7.4	5.9-9.0
45-54	420	9.4	5.9-13.0	625	6.5	3.8-9.3	1045	8.0	5.4-10.7
55-64	223	5.7	1.7-9.7	301	8.1	4.7-11.5	524	7.0	4.3-9.6
15-64	2216	10.1	8.3-11.8	3,216	5.9	4.6-7.1	5432	8.0	6.8-9.2

Breakdown by the type of injury demonstrated that falls were reported most commonly occurring irrespective of gender or in 56.5% (95% CI 47.5-65.5) of cases, blunt force trauma was reported in 17.4% (95% CI 11.2-22.9), other injuries – in 12.4% (95% CI 7.9-16.9), and cuts – in 8.2% (95%CI 2.7-13.6) (Figure 18, Annex I.60-62).

Breakdown by age demonstrated that 8.9% (95% CI 6.1-11.7) of cases were 15-24 year-olds, of whom 11.5% (95% CI 7.3-15.7) were males and 8.1% (95% CI 4.7-11.5) were females.

Rate of falls increased with age. For instance, 59.9% (95% CI 43.4-76.3) of 35-44 year-olds reported falls, and the rate increased to 81.3% (95% CI 67.7-94.8) in 55-64 year-olds. In contrast, blunt force trauma was more common in younger, working-age persons: 18.6% (95% CI 9.4-27.7) in 25-34 year age group and 18.5% (95% CI 6.4-30.6) in 15-24 year age group.

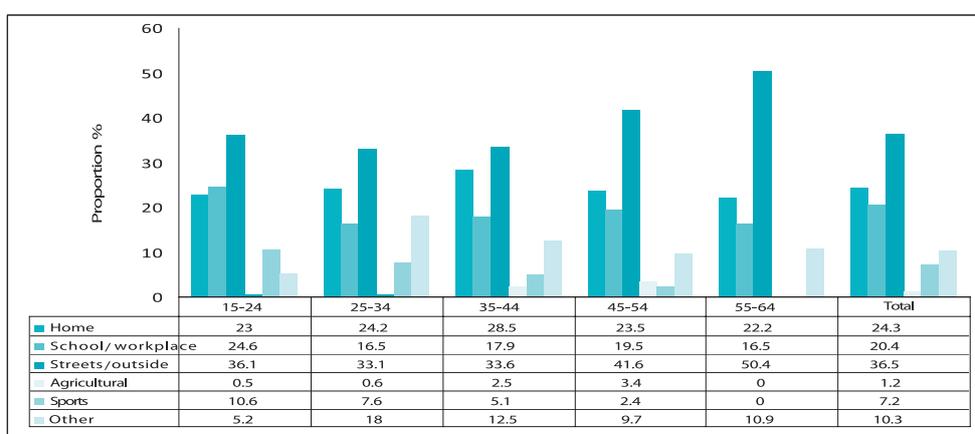
Figure 18. Percentage of respondents who were seriously injured other than road traffic crashes⁸ by age group (N=358)



There were no differences between gender with regards to the place of injury: 36.5% (95% CI 30.8-42.2) were injured outside/on streets, 23.3% (95% CI 18.6-30.0) at home, 20.4% (95% CI 13.7-27.2) – at school/workplace, 10.3% (95% CI 5.7-14.9) – in other places, and 7.2% (95% CI 2.6-11.9) – in sports facilities (Figure 19, Annex I.63-65).

When stratified by age, 24.6% (95% CI 11.7-37.6) of 15-24 year-olds were injured at school/workplace and 10% (95% CI 1.3-20.0) in sports facilities. In contrast, 50.4% (95% CI 27.1-73.7) of 55-64 year-olds were injured outside/on streets.

Figure 19. Location of accidental serious injuries among respondents seriously injured, by age group (N=358)



Out of 15-24 year-old males, 14.9% (95% CI 1.4-28.4) were injured while engaging in sports/physical activity, and 32.5% (95% CI 7.7-57.3) of their female counterparts were injured at school/workplace.

Traffic injury

History of traffic injury was assessed by asking whether a respondent had been involved in traffic injury in the past 12 months, about a type of injury, factors causing the injury, place of injury, use of a seatbelt and a helmet, a number of hours driving per day, and drunk driving.

Prevalence of self-reported traffic injuries in the past 12 months was 4% (95% CI 3.1-4.8). Traffic injuries were 2.7 times more common in men (5.8%; 95% CI 4.3-7.3) compared to women (2.1%; 95% CI 1.4-2.7) (Table 67).

Traffic injuries were the most common in 25-34 year-olds (6.0%; 95% CI 4.1-8.0) with the prevalence of 9.7% (95% CI 6.2-13.3) in men and 2.3% (95% CI 1.3-3.3) in women.

Table 68. Traffic injury (by age, gender and locality)

	Male			Female			Total		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Age group									
15-24	403	4.1	1.8-6.4	495	2.5	1.1-4.0	898	3.3	1.9-4.7
25-34	603	9.7	6.2-13.3	921	2.3	1.3-3.3	1524	6.0	4.1-8.0
35-44	568	7.2	4.2-10.2	875	2.0	0.9-3.1	1443	4.6	3.0-6.2

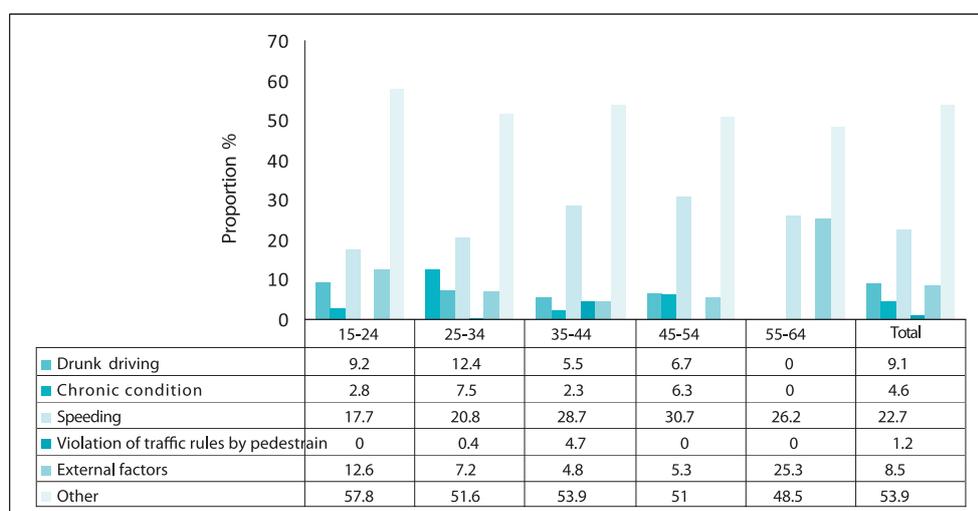
45-54	420	3.2	1.3-5.1	625	1.4	0.5-2.3	1045	2.3	1.3-3.4
55-64	223	2.3	0.2-4.5	301	0.5	0.0-1.3	524	1.4	0.2-2.6
15-64	2217	5.8	4.3-7.3	3,217	2.1	1.4-2.7	5434	4.0	3.1-4.8
Locality									
Urban	996	5.6	3.3-7.8	1547	1.8	0.9-2.7	2543	3.6	2.5-4.7
Rural	1221	6.0	3.9-8.1	1670	2.4	1.5-3.3	2891	4.3	3.1-5.6
Total	2217	5.8	4.3-7.3	3217	2.1	1.4-2.7	5434	4.0	3.1-4.8

Although traffic injuries were common in rural areas (4.3%; 95% CI 3.1-4.8) the difference was not statistically significant.

The main causes of traffic injury were speeding (22.7%; 95% CI 15.7-29.7) and drunk driving (9.1%; 95% CI 3.8-14.3) with no significant differences between genders (Figure 20, Annex I. 66-68).

In 53.9%, traffic injury was caused by driving faulty cars, violating rules and regulations of transporting passengers, crossing stoplight, violating traffic rules by pedestrians and not using seatbelts. External factors (e.g. slippery roads, weather conditions, unsafe road conditions, poor road side lighting) were responsible for 8.5% of traffic injuries.

Figure 20. Cause of crash among those respondents involved road traffic crash, by age group (N=191)



In terms of urban/rural differences, in urban areas 24% (95% CI 16.2-31.8) were caused by speeding and 7.4% (95% CI 0.3-14.5) – by drunk driving, while in rural areas the corresponding rates were 21.6 (95% CI 10.8-32.4) and 10.4 (95% CI 3.1-17.8)%, respectively.

Table 69. Traffic injuries (by locality and risk factors)

Locality	Drunk driving			Fatigue / disease		Speeding		Violation of traffic rules by pedestrians		External factors		Other	
	n	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Urban	82	7.4	0.3-14.5	6.6	0.8-12.5	24.0	16.2-31.8	1.4	0.0-3.4	8.4	1.7-15.0	52.2	37.9-66.6
Rural	109	10.4	3.1-17.8	2.9	0.0-6.8	21.6	10.8-32.4	1.1	0.0-3.2	8.7	4.1-13.2	55.3	42.9-67.8
Total	191	9.1	3.9-14.3	4.6	1.1-8.0	22.7	15.7-29.6	1.2	0.0-2.7	8.5	4.6-12.5	53.9	44.5-63.3

Analysis of traffic injury risk factors by age and gender demonstrated that 13.5% (95% CI 0.0-27.3) of 25-34 year-old males were injured as a result of drunk driving, while 33.0% (95% CI 17.6-48.4) of 35-44 year-olds and 35.4% (95% CI 0.0-71.2) of 45-54 year-olds were injured due to speeding.

Among females, 18.8% (95% CI 0.0-41.2) of 15-24 year-olds were injured as a result of drunk driving, while 30.3% (95% CI 6.6-53.9) of 25-34 year-olds and 39.3% (95% CI 0.0-100.0) of 55-64 year-olds were injured due to speeding.

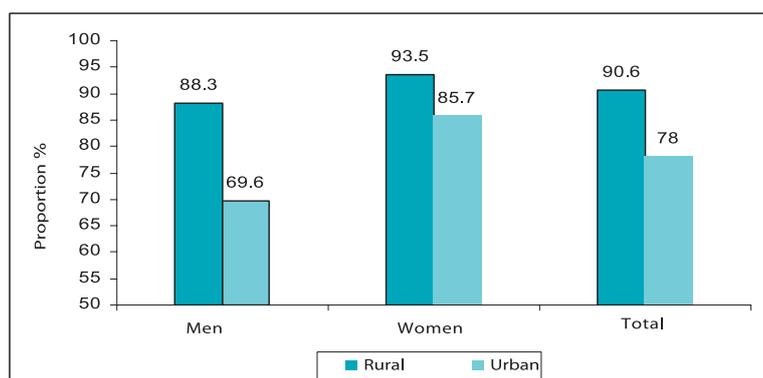
When asked about seatbelt use, 83.6% (95% CI 81.2-86.0) overall, or 78.6% (95% CI 75.5-81.7) of men and 88.9% (95% CI 86.4-91.5) of women did not use seatbelt every time they drove or rode in a car (Table 70).

Table 70. Proportion not using seatbelts (by age and gender)

Age group	Male			Female			Total		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
15-24	306	84.5	77.8-91.2	370	90.9	86.9-95.0	676	87.7	82.8-92.5
25-34	493	76.4	72.4-80.5	673	86.6	83.0-90.1	1166	81.2	78.0-84.4
35-44	467	71.0	65.0-77.0	650	88.4	85.1-91.8	1117	79.4	76.1-82.7
45-54	324	75.4	68.1-82.7	470	88.5	84.7-92.2	794	81.7	77.7-85.7
55-64	165	87.5	81.7-93.3	202	88.9	83.6-94.3	367	88.2	83.9-92.6
15-64	1755	78.6	75.5-81.7	2365	88.9	86.4-91.5	4120	83.6	81.2-86.0

When stratified by locality, 78% (95% CI 73.6-82.3) of urban and 90.6% (95% CI 87.8-93.3) of rural population did not use seatbelts regularly. Non-compliance with seatbelt use regulation was 69.6% (95% CI 64.7-74.6) in urban men and 88.3% (95% CI 84.8-91.7) in their rural counterparts (Figure 21).

Figure 21. Proportion not using seatbelts (by locality and gender)



When asked about helmet use when riding a bicycle or motorcycle, 95.6% (95% CI 94.0-97.2) did not use helmets regularly, and no significant difference between genders was observed.

When asked about average number of hours a day spent driving, men responded they spent 2.9 (95% CI 2.5-3.4) and women - 0.7 (95% CI 0.4-1.0) hours a day driving. Of the respondents, 35-44 year-old males spent most or 3.5 hours (95% CI 2.9-4.1) behind the wheel.

Conclusions

1. Prevalence of injuries other than traffic was 8%, and the leading types of injuries were falls (56.5%) and blunt force trauma (17.4%).
2. Men were 1.7 times more likely to have a history of injuries, and it was the most common in 15-24 year-old males, 25-34 year-old females, and 55-64 year-olds of both sexes.
3. In terms of place of injury, one in three was injured in streets, one in five – at home or school/workplace.
4. Prevalence of traffic injury in the study population was 4%.
5. One in five traffic injuries was due to speeding, and 1 in 10 – due to drunk driving.
6. Eight in ten drivers and passengers did not use seatbelt regularly.
7. Use of helmets when riding a bicycle or a motorcycle was almost inexistent in both genders.

Discussion

1. Worldwide 16,000 persons a day or 5 million people annually die due to traffic injuries. This accounts for 9.8% of mortality and 12.3% of morbidity in the world (WHO, 2004).
2. In recent years, injuries have increased in Mongolia, becoming the third leading cause of population mortality and the fifth leading cause of morbidity, and the numbers are growing.
3. According to “Report on Injuries in Mongolia, 2003-2004”, the likelihood of men vs. women getting injured in traffic accident was 3.3 times more according to health statistics, 2.7 times more according to the police data, and 2.8 times more according to the results of the study.
4. The current survey data suggested speeding was the leading cause of traffic injury. Low levels of seatbelt and helmet use detected by the current survey are in agreement with the data from the National Traumatology and Orthopedic Research Center (NTORC), according to which 31% of emergency cases have brain injury.
5. According to the results of the current survey, injuries occurred most commonly outside/ in streets and at home, which was consistent with the fact that the majority of injury cases were traffic injuries, falls and domestic interpersonal violence.
6. There was a fair chance that the survey population, and women and the elderly in particular, under-reported violence. Therefore, interpersonal violence could be under reported in cases of sharp and blunt force trauma, which were the 4th and 2nd most common injury excluding traffic injury. The findings of the current survey demonstrate that traffic injuries and falls were the most common types of injury in the population. This is in agreement with NTORC data on traffic injuries, falls and interpersonal violence being the leading causes of injury mortality, morbidity and hospitalization.

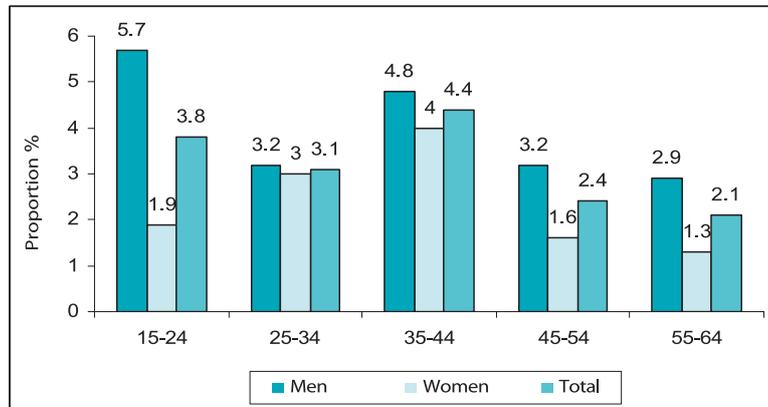
Violence

In the current study violence was assessed as a health risk factor and a source of stress. Special attention was given to child abuse and services for violence victims.

Violence as a health risk factor

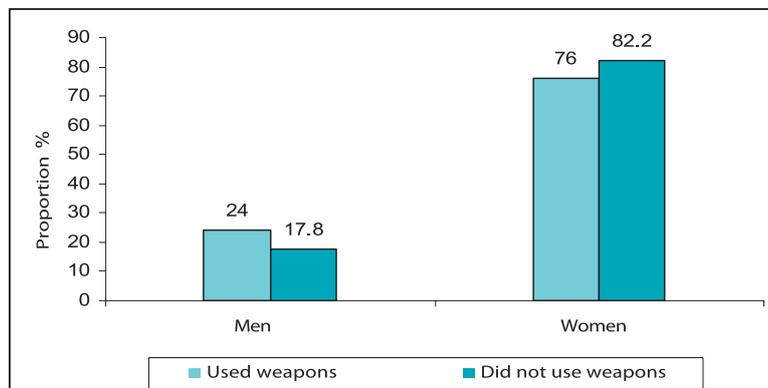
In the past 12 months, 3.5% (95% CI 2.6-4.3) of the study population were victims of violence and received medical care. In particular, 4.4% (95% CI 2.9-5.9) of men and 2.5% (95% CI 1.8-3.2) of women were subject to violence (Figure 22, Annex I.69).

Figure 22. Prevalence of violence (by age and gender)



Use of a weapon was reported by 24% (95% CI 11.6-36.5) of men and 17.8% (95% CI 4.3-31.2) of women (Figure 23). Although use of a weapon was reported by fewer women compared to men, the former were more likely to be injured as a result of physical abuse (such as hitting, slamming, pushing and kicking).

Figure 23. Use of weapons in violent act

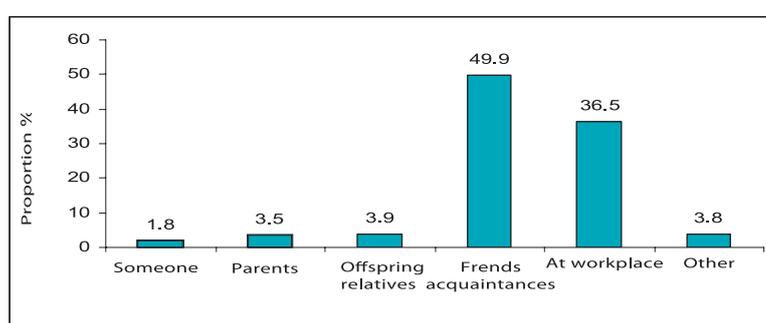


One in two males and one in five females were victimized with weapons and received bodily injury. This demonstrated high risks to personal health and community wellbeing associated with violence.

Of males, 49.9% (95% CI 38.0-61.7) were abused by friends and acquaintances and 36.5% (95% CI 24.6-48.4) – by strangers. The main reported cause of violence among men was a difference in opinions in 89.4% of cases, and one in every nine men tended to use physical force in resolving conflict.

In terms of age, 89.9% of 15-24 year-old males, 60.8% of females were physically abused by their acquaintances or strangers (Figure 24), which demonstrated widespread peer pressure among adolescents and youth. It should be noted that this rate decreased with age.

Figure 24. Abusers reported by 15-24 year-olds



Men tended to be victimized in social settings other than household.

Among those involved in a violent incident, female victims of violence reported being abused by family or intimate partners in 30.4% of cases, by strangers in 26.9% and by friends in 24.2% of cases (Table 71, Annex I.70-72).

Table 71. Violence against women

Age Group	n	%intimate partner	95% CI	% offspring, relatives	95% CI	% friends	95% CI	% strangers	95% CI	% official or legal authorities	95% CI
15-24	10	30.9	0.0-67.3	8.3	0.0-25.4	38.4	0.6-76.2	22.4	0.0-56.2	0.0	0.0-0.0
25-34	18	39.0	15.3-62.6	23.8	7.3-40.3	9.2	0.0-21.9	28.1	10.8-45.3	0.0	0.0-0.0
35-44	26	34.1	19.2-48.9	20.6	4.1-37.0	5.7	0.0-13.3	39.7	21.9-57.6	0.0	0.0-0.0
45-54	9	0.0	0.0-0.0	17.6	0.0-38.8	73.2	47.1-99.2	0.0	0.0-0.0	9.3	0.0-28.5
55-64	2	0.0	0.0-0.0	0.0	0.0-0.0	77.7	27.7-100.0	0.0	0.0-0.0	0.0	0.0-0.0
15-64	65	30.4	13.9-46.8	17.1	8.4-25.8	24.2	7.9-40.4	26.9	13.6-40.2	0.9	0.0-2.7

Women were abused by someone close in 21.6% (95% CI 10.1-33.1) of cases in urban and 40.1% (95% CI 10.6-69.6) of cases in rural areas, and by a stranger in 41.5% (95% CI 22.4-60.6) of cases in urban and 10.6% (95% CI 0.7-21.9) in rural areas. This demonstrated that in urban settings, strangers tended to abuse women, and in rural settings this was someone close.

3.5% (95% CI 2.6-4.4) of the survey respondents sought medical care as a result of abuse. Out of them, 96.5% responded they were abused regularly. This was a clear indication that family violence was common in the Mongolian society, tended to recur and worsen, and had negative health impacts.

Table 72. Frequency of abuse

Age group	n	% never	95% CI	% rarely	95% CI	% sometimes	95% CI	% often	95% CI
15-24	895	0.2	0.0-0.5	3.6	2.0-5.3			96.2	94.4-97.9
25-34	1522	0.0	0.0-0.1	2.9	1.8-4.1	0.1	0.0-0.2	96.9	95.8-98.0
35-44	1440	0.2	0.0-0.5	3.9	2.6-5.2	0.2	0.0-0.5	95.6	94.3-96.9
45-54	1042			2.2	1.1-3.3	0.3	0.0-0.6	97.6	96.3-98.8
55-64	522			1.7	0.2-3.2	0.4	0.0-1.1	97.9	96.3-99.6
Total	5421	0.1	0.0-0.3	3.2	2.4-4.0	0.1	0.0-0.2	96.5	95.7-97.4

Urban vs. rural comparisons revealed that perpetrators were friends and acquaintances in 38.2% (21.7-54.7) of cases in urban and 43.2% (30.6-55.8) of cases in rural areas, while strangers were responsible for 43.4% (29.4-57.4) of cases in urban and 24.2% (13.5-34.9) of cases in rural areas. According to the current survey, one in every 200 people lived in an abusive family.

Violence and stress

One in five respondents or 19.3% (95% CI 16.9-21.7) of the study population reported worrying about their personal and family security because of someone's anger, threat or maltreatment in the past 12 months. Of them, 48.4% (95% CI 43.4-53.4) were anxious because of family members, 31.1% (95% I 25.8-36.5 because of friends, 9.2% (95% CI 6.4-12.0) because of coworkers, 9.7% (95% CI 7.5-11.9) because of strangers. This supported the view that negative family and workplace atmosphere triggered stress and interfered with healthy and peaceful living and working. There were no significant differences between urban and rural respondents, which indicated widespread stress in the society.

Table 73. Percentage worrying about their personal and family security because of someone's anger

Age group	Male			Female			Total		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
15-24	402	16.7	12.3-21.1	495	22.3	17.2-27.5	897	19.4	16.1-22.8
25-34	602	16.8	12.6-21.0	921	24.1	20.4-27.8	1,523	20.4	17.3-23.5
35-44	567	16.8	12.4-21.2	876	25.6	21.3-29.9	1,443	21.2	17.5-25.0
45-54	420	12.5	9.1-15.9	625	20.9	16.5-25.2	1,045	16.5	13.5-19.5
55-64	223	9.0	5.0-13.0	301	18.3	12.9-23.6	524	13.8	10.5-17.2
15-64	2214	15.7	13.1-18.2	3218	22.9	19.9-26.0	5432	19.3	16.8-21.7

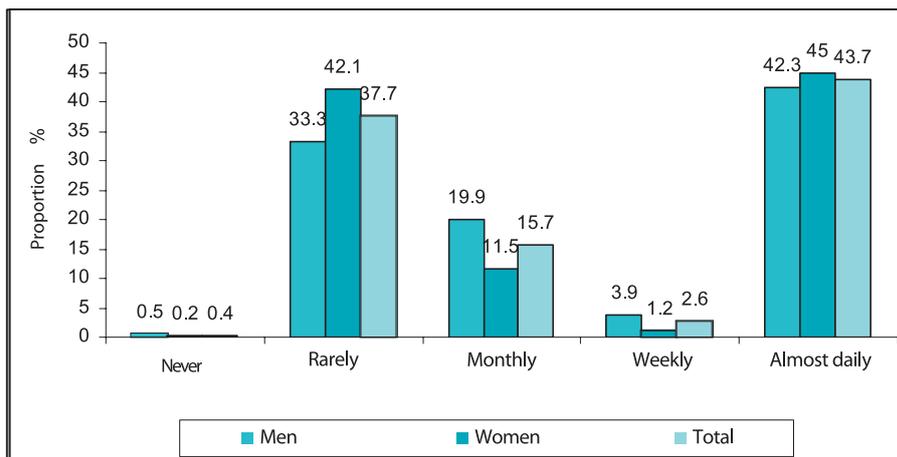
Child abuse

66.7% (95% CI 60.2-73.2) of the surveyed males and 57.9% (95% CI 51.6-64.2) of females reported being physically abused (slammed, beaten, kicked, etc) by a family member as a child. No significant difference was observed between age groups with 59.6 – 65.7% of 15-64 year-olds reporting abuse as a child (Table 74).

Table 74. Percentage being abused as child

Age group	Males			Females			Total		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
15-24	397	64.9	57.1-72.8	492	59.9	51.3-68.5	889	62.5	55.1-69.8
25-34	586	70.7	63.6-77.7	902	60.6	53.8-67.5	1,488	65.7	59.1-72.3
35-44	561	64.5	56.5-72.5	862	55.1	48.2-61.9	1,423	59.8	53.0-66.5
45-54	399	68.4	60.8-76.1	608	53.5	46.7-60.3	1,007	61.1	54.5-67.8
55-64	216	65.0	54.2-75.9	284	54.5	44.4-64.6	500	59.6	50.4-68.8
15-64	2159	66.7	60.2-73.2	3148	57.9	51.6-64.2	5307	62.3	56.3-68.4

The data suggested high prevalence of child abuse in the Mongolian society due to a tendency to view physical abuse as means of disciplining a child (Figure 25).

Figure 25. Frequency of child abuse

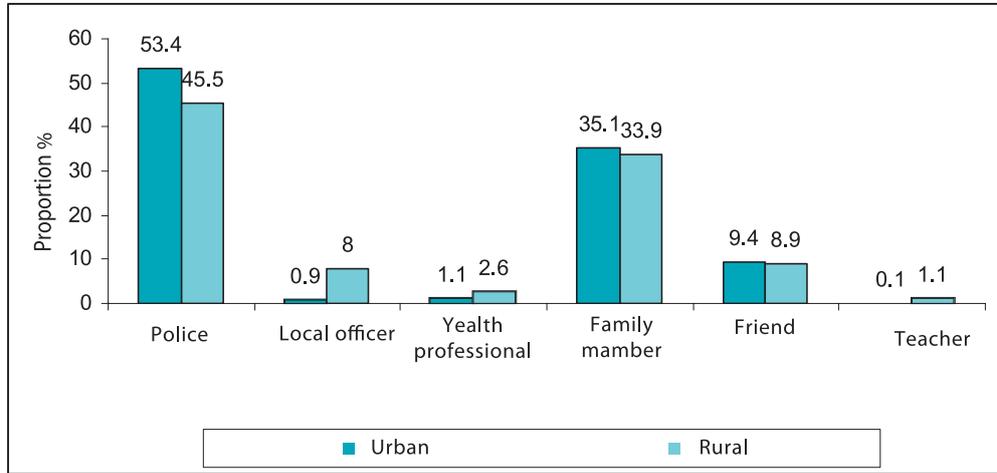
Of those abused as a child, 43.7% (95% CI 39.3-48.1) reported being abused *almost on daily basis* although did not mention anything about requiring medical attention as a result of abuse. The data suggested that child abuse was common and used as a punishment for wrongdoing, and remained undisclosed unless serious danger to health and life of a child occurred.

Services for violence victims

The survey respondents unanimously agreed that a victim should tell someone about abuse and seek support and care. Almost half (49.4%) of the respondents preferred to disclose the information to the police, 34.5% - to family members, 9.1% - to friends, 4.6% to local officials, 1.8% - to health professionals and 0.6% - to teachers.

Comparisons between different localities demonstrated that 57.7% of urban and 48% of rural respondents preferred seeking help from the police (Figure 26).

Figure 26. Preferred point of contact, by locality



There was a general preference for the police and legal institutions to seek help in violence cases. However, a certain proportion of the respondents preferred to seek help from local officials, health professionals and school teachers, who have legal obligation to protect citizen’s health and wellbeing. Therefore, the above professionals need to be trained in recognizing signs of violence, reporting abuse, collecting evidence and referring to appropriate services.

40% of the respondents preferred to seek support from family and friends. However, this might provoke further violence, and therefore, needs to be addressed in public educational campaigns.

Younger (15-24 years old) males sought support from the police in 39.6% (95% CI 32.3-46.9) of cases, which increased with age, while seeking support from family (37.6%; 95% CI 31.6-43.6) and friends (15.4%; 95% CI 10.5-20.3) decreased. The above dynamics could be due to increased family violence towards older men.

Conclusions

1. Men compared to women were more likely to fall victims of interpersonal violence, which was mainly because men tended to use physical force in resolving conflict.
2. Peer pressure was common among 15-24 year-olds of both genders.
3. Family violence was common, and the majority of its victims were women. One in seven women was a subject to domestic violence, and one in every 200 people lived in an abusive family.
4. Although public awareness about forms of violence and its recurrent character improved, victims of violence only sought medical care when were injured and their health and lives were in danger.
5. In crowded urban areas there was a greater chance to be abused by a stranger.
6. Stress caused by family aggression threatens safety of workplace, and vice versa.
7. Of the survey respondents, 62.3% were abused as a child. Children are physically abused for wrongdoing, and parents lack skills to effectively communicate with their children.
8. Child abuse mainly remains undisclosed unless serious danger to health and life of a child

occurs.

9. 40% of the respondents preferred to seek support from family and friends. However, this might provoke further violence, and therefore, needs to be addressed in public educational campaigns.

Recommendations

1. To plan and implement a communication strategy to improve knowledge of local officials, health professionals and school teachers about violence within the framework of the National Program on Prevention of Family Violence.
2. To establish one stop service centers for violence victims at the Regional Diagnostic and Treatment Centers within the framework of the National Program on Prevention of Injury and Violence.
3. To improve public services for rural population and to support activities of joint teams.
4. To instill a social attitude of intolerance towards violence, promote civil participation and reporting of violence.
5. To support communication campaign focusing on specifics of physical and mental development of children to prevent child abuse

3.5 RESULTS OF COMPARATIVE STUDY

One of the objectives of the current survey was to generate data for mid-term evaluation of the National Program on Prevention and Control of NCDs. Therefore, the results of the current survey were compared to the 2005 survey on NCD risk factors. For comparison purposes, data from the two surveys were weighted using age and gender distribution of the population of Mongolia in 2008, and standardized rates were compared.

1. Trend in prevalence of common modifiable risk factors for NCDs

Tobacco use

Standardized prevalence of smoking in the 15-64 year-old population was 27.5% in 2009, which was slightly higher than the corresponding rate in 2005 (26.6%) although not statistically significant. In terms of gender, smoking rates remained stable in men (48.7% and 49.4%), whereas proportion of smoking women 5.9% (95%CI 4.3-7.5) was likely to increase over the years by 7.0% (95CI 4.3-7.5), however, the difference was not statistically significant (Comparison result I).

Similarly, there was no significant difference in the percentage of current daily smokers between the two surveys (23.3% vs. 24.1%). Average age of smoking initiation was 19.3 in 2009, comparatively younger than in 2005 (20.1 years). In regard to gender, there was no difference in the age of starting smoking among men. However, for the women the age starting smoking decreased by 3.7 years – whereas women started smoking at 24.0 (95%CI 22.3-25.7) years in 2009 compared to the age of 27.7 (95%CI 25.8-29.7) years in 2005 (Comparison result II, III).

Alcohol consumption

Slightly different indicators of risk associated with alcohol consumption were used in 2009 compared to 2005. Therefore, direct comparison between the two surveys was problematic. According to the 2009 survey, the percentage who drank alcohol in the past 12 months was 58.5%, which was significantly lower than 66.9% in 2005. The percentage of men who drank in the past 12 months remained the same in men over the years, whereas in women this percentage decreased from 58.7% (95%CI 55.0-62.3) to 47.3% (95%CI 42.3-52.2).

The percentage of people who drank alcohol at least five days weekly in the past 12 months increased to 0.8% (95%CI 0.3–1.2) in 2009 compared to 0.6% (95%CI 0.4–0.9) in the previous survey. However, the difference was not statistically significant in terms of general population or by gender (Comparison result II, III).

Fruit and vegetable consumption

According to the 2005 survey, the mean number of days fruits were consumed in a typical week was 1.8 days (95% CI 1.7-1.9), which decreased to 1.2 (95% CI 1.0-1.3) in 2009. In regard to gender, mean number of days fruits were consumed in a typical week decreased by 0.4 days in men and 0.7 days in women.

The mean number of servings of fruit consumed on average per day was halved from 0.8 (95% CI 0.7-0.8) to 0.4 servings (95%CI 0.3-0.5) between the two surveys. The decrease was noticed both in men and in women – that is decreased from 0.6 servings to 0.3 and from 0.9 to 0.5 servings of fruits, respectively.

Similarly, the mean number of days vegetables were consumed in a typical week was decreased from 5.7 (95%CI 5.6-5.8) to 4.7 (95%CI 4.3-5.0) days, and the mean number of servings of vegetables were consumed on average per day decreased from 1.6 (95% CI 1.6-1.7) to 1.3 (95% CI 1.1-1.5)

servings. In regard to gender, the mean number of days vegetables were consumed was decreased by 1 day both in men and women. The mean number of servings of vegetables were consumed on average per day was decreased significantly in men from 1.6 (95CI 1.6-1.7) to 1.3 (95CI 1.1-1.5) servings (Comparison result II, III).

Decline in fruit and vegetable consumption could be in part due to exclusion of potato consumption from the assessment of vegetable consumption in 2009 and proceedings of late autumn field work compared to the previous survey.

Physical activity

The previous survey data was re-analyzed to adjust for changes in methodology and indicators used in the assessment of physical activity. According to the results of a comparative study, the percentage with a low level of physical activity remained almost unchanged between 2005 (7.4%) and 2009 (7.2%). The percentage did not differ in respect to gender.

In contrast, there was a statistically significant increase in the percentage with high levels of physical activity from 70.4% in the previous survey to 81.8% in 2009. The increase was observed in both men (74.3%-82.5%) and women (67.2%-81.1%) over the years from 2005 to 2009.

The finding of increased percentage with high levels of physical activity was also supported by an increase in median time spent in physical activity on average per day (181.4 vs. 342.8 MET-minutes).

Out of those physically active, the percentage engaging in vigorous activity decreased from 58.9% in 2005 to 45.5% in 2009. In regard to gender, the percentage engaging in vigorous activity decreased by 11.6% in men (51.5%-39.9%) and 13.1% in women (65.2%-52.1%) over the years between 2005 and 2009 (Comparison result II, III).

2. Trends in prevalence of intermediate risk factors for NCDs

Overweight and obesity

Mean body mass index in the study population increased significantly from 23.9 kg/m² in 2005 to 24.7 kg/m² in 2009. There was a significant increase in the mean BMI in men from 23.3 (95CI 23.0-23.5) kg/m² to 24.3 (95CI 23.0-23.5) kg/m² and it was remained stable in women.

The prevalence of overweight and obesity increased from 32.4% (95% CI 30.3-34.4) to 40.7% (95% CI 38.4-42.9), with the prevalence of obesity only increasing from 10.2% (95% CI 9.0-11.4) to 12.9% (95% CI 11.6-14.2). Both indicators showed a significant increased trend in men over the years, while remaining stable in women (Comparison result II, III).

Hypertension

There was no statistically significant difference in mean systolic blood pressure in the study population in 2005 (124.6 mmHg) and 2009 (125.9 mmHg). However, mean diastolic blood pressure increased from 76.9 to 78.9 mmHg. The mean diastolic blood pressure increased by 2.8 mmHg in men and in women remained the same.

The prevalence of hypertension remained almost unchanged between 2005 (28.5%; 95% CI 26.1-30.8) and 2009 (27.8%; 95% CI 25.7-29.9). In regard to gender, there was no statistically significant difference between men and women in the prevalence of hypertension. However, there was a statistically significant increase in the percentage with raised blood pressure who are not currently

on medication for raised blood pressure from 50.4% in 2005 to 62.7% in 2009. The comparative study demonstrated that effective medicinal management of hypertension worsened (Comparison result II, III).

Diabetes

There was a slight decrease in mean fasting blood glucose between the two surveys (4.9 vs. 4.7 mmol/L) although not statistically significant. The mean fasting blood glucose was not different in men and women over the years. Similarly, no significant difference was observed in the prevalence of population with impaired fasting glucose (10.3% in 2005 vs. 9.3% in 2009). Thus, there was no significant difference in the percentage of people with raised blood glucose or on medication for diabetes between the two surveys (10.0% in 2005 vs. 6.6% in 2009). No statistically significant differences in these indicators were observed in terms of gender (Comparison result II, III).

Blood lipids

Mean blood cholesterol was 4.7 mmol/L (95% CI 4.7-4.8) among the population in 2005 and it became 4.3 mmol/L (95% CI 4.2-4.5) in 2009 showing a decrease. However, there was no significant difference in the percentage with or at risk of increased total cholesterol between the study population in 2005 (23.9%; 95% CI 20.5-27.3) and 2009 (26.2%; 95% CI 20.5-31.9). The percentage with or at risk of increased total cholesterol was not different between men and women of the two study populations (Comparison result II, III).

Conclusion

1. The prevalence of smoking in the adult population has no tendency to decrease. Furthermore, women started smoking at a younger age. With regards to alcohol consumption, although the percentage of people that drank alcohol in the past 12 months decreased, the frequency of drinking has a tendency to increase.
2. Average daily fruit consumption was halved and vegetable consumption decreased by 20% in the past four years. At the same time, average daily salt intake decreased. Although there was an increase in median time spent in physical activity on average per day and in the percentage of people with high level of physical activity, no changes were observed in the percentage of physically inactive.
3. The mean Body Mass Index of the adult population increased as well as the prevalence of obesity (by 2.7%), and overweight and obesity (by 8.3%). The percentage with or at risk of increased total cholesterol remained stable over the years with 23.9% (95%CI 20.5-27.3) and 26.2% (20.5-31.9) respectively.
4. Although the prevalence of hypertension remained unchanged, use of medication for treatment of hypertension and its responsiveness to anti-hypertensive drugs worsened.
5. Mean fasting blood glucose in the Mongolian adult population remained stable, and there was also no statistically significant change in the percentage of people with impaired fasting glucose or with raised blood glucose or on medication for diabetes.

Comparison result I

Mongolia STEPS Surveys 2005 & 2009

(Population weighted only)

The STEPS survey of chronic disease risk factors in Mongolia carried in 2005 and 2009. Both surveys were population-based surveys of adults aged 15-64. A multi-stage cluster sample design was used each time to produce representative data for that age range in Mongolia. A total of 3,411 adults participated in 2005 and 5,438 adults participated in 2009. First 2 columns display 2 survey results with population adjustment weights using the 2008 population figures in both survey data.

Results for adults aged 15-64 years (incl. 95% CI)	2005 (N=3411)	2009 (N=5438)
Step 1 Tobacco Use		
Percentage who currently smoke tobacco	26.6% (23.8 – 29.4)	27.5% (26.0 – 29.0)
Percentage who currently smoke tobacco daily	23.3% (20.8 – 25.8)	24.1% (22.9 – 25.4)
<i>For those who smoke tobacco daily</i>		
Average age started smoking (years)	20.1 (19.6 – 20.6)	19.3 (18.9 – 19.6)
Percentage of daily smokers smoking manufactured cigarettes	90.5% (87.9 – 93.0)	85.6% (80.7 – 90.5)
Mean number of manufactured cigarettes smoked per day (by smokers of manufactured cigarettes)	11.3 (10.8 – 11.7)	8.8 (8.1 – 9.5)
Step 1 Alcohol Consumption		
Percentage who drank alcohol in the past 12 months	66.9% (64.2 – 69.5)	58.5% (54.2 – 62.7)
Percentage who drank on 5 or more days per week in the past 12 months	0.6% (0.4 – 0.9)	0.8% (0.3 – 1.2)
Percentage who drank less than once a month in the past 12 months	37.3% (35.0 – 39.7)	36.7% (32.5 – 40.9)
Step 1 Fruit and Vegetable Consumption (in a typical week)		
Mean number of days fruit consumed	1.8 (1.7 – 1.9)	1.2 (1.0 – 1.3)
Mean number of servings of fruit consumed on average per day	0.8 (0.7 – 0.8)	0.4 (0.3 – 0.5)
Mean number of days vegetables consumed	5.7 (5.6 – 5.8)	4.7 (4.3 – 5.0)
Mean number of servings of vegetables consumed on average per day	1.6 (1.6 – 1.7)	1.3 (1.1 – 1.5)
Percentage who ate less than 5 servings of fruit and/or vegetables on average per day	91.1% (89.8 – 92.5)	92.3% (90.7 – 94.0)
Step 1 Physical Activity		
Percentage with low levels of activity (defined as < 600 MET-minutes per week)*	7.4% (6.0 – 8.8)	7.5% (5.1 – 9.9)
Percentage with high levels of activity (defined as ≥ 3000 MET-minutes per week)*	70.4% (67.5 – 73.4)	81.8% (77.0 – 86.6)
Median time spent in physical activity on average per day (minutes) (presented with inter-quartile range)	181.4 (85.7 – 330.0)	347.1 (162.9 – 507.1)
Percentage not engaging in vigorous activity	58.9% (52.3 – 65.6)	46.2% (41.3 – 51.2)

Results for adults aged 15-64 years (incl. 95% CI)	2005	2009
Step 2 Physical Measurements		
Mean body mass index - BMI (kg/m ²)	23.9 (23.7-24.1)	24.7 (24.5-24.9)
Percentage who are overweight (BMI ≥ 25 kg/m ²)	32.4% (30.3-34.4)	40.7% (38.4-42.9)
Percentage who are obese (BMI ≥ 30 kg/m ²)	10.2% (9.0-11.4)	12.9% (11.6-14.2)
Mean systolic blood pressure - SBP (mmHg), including those currently on medication for raised BP	124.6 (123.8-125.5)	125.9 (124.7-127.1)
Mean diastolic blood pressure - DBP (mmHg), including those currently on medication for raised BP	76.9 (76.4-77.4)	78.9 (78.2-79.7)
Percentage with raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP)	28.5% (26.1-30.8)	27.8% (25.7-29.9)
Percentage with raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg) who are not currently on medication for raised BP	50.4% (45.1-55.8)	62.7% (58.4-67.0)
Step 3 Biochemical Measurement		
Mean fasting blood glucose, including those currently on medication for raised blood glucose (mmol/L)	4.9 (4.8-5.0)	4.7 (4.6-4.9)
Percentage with impaired fasting glycaemia as defined below capillary whole blood value ≥5.6 mmol/L (100 mg/dl) and <6.1 mmol/L (110 mg/dl)	10.3% (7.9-12.6)	9.3% (7.4-11.1)
Percentage with raised fasting blood glucose as defined below or currently on medication for raised blood glucose capillary whole blood value ≥ 6.1 mmol/L (110 mg/dl)	10.0% (7.7-12.3)	6.6% (4.8-8.3)
Mean total blood cholesterol, including those currently on medication for raised cholesterol (mmol/L)	4.7 (4.7-4.8)	4.3 (4.2-4.5)
Percentage with raised total cholesterol (≥ 5.0 mmol/L or ≥ 190 mg/dl or currently on medication for raised cholesterol)	23.9% (20.5-27.3)	26.2% (20.5-31.9)
Summary of combined risk factors		
<ul style="list-style-type: none"> · current daily smokers · less than 5 servings of fruits & vegetables per day · low level of activity 	<ul style="list-style-type: none"> · overweight (BMI ≥ 25 kg/m²) · raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP) 	
Percentage with none of the above risk factors	3.4% (2.6-4.3)	2.5% (1.5-3.6)
Percentage with three or more of the above risk factors, aged 15 to 44 years	15.8% (13.9-17.7)	20.1% (18.3-21.9)
Percentage with three or more of the above risk factors, aged 45 to 64 years	53.0% (49.6-56.5)	52.4% (48.7-56.0)
Percentage with three or more of the above risk factors, aged 15 to 64 years	23.8% (21.7-25.9)	27.0% (25.0-28.9)

Comparison result II

Mongolia STEPS Surveys 2005

The STEPS survey of chronic disease risk factors in Mongolia carried in 2005. Mongolia carried out Step 1, Step 2 and Step 3. Socio demographic and behavioral information was collected in Step 1. Physical measurements such as height, weight and blood pressure were collected in Step 2. Biochemical measurements were collected to assess blood glucose and cholesterol levels in Step 3. The STEPS survey in Mongolia was a population-based survey of adults aged 15-64. A multi-stage cluster sample design was used each time to produce representative data for that age range in Mongolia. A total of 3,411 adults participated in the Mongolia STEPS survey. A repeat survey was carried out in 2009.

Results for adults aged 15-64 years (incl. 95% CI)	Both Sexes	Males	Females
Step 1 Tobacco Use			
Percentage who currently smoke tobacco	26.6% (23.8 – 29.4)	48.7% (45.2 – 52.2)	5.9% (4.3 – 7.5)
Percentage who currently smoke tobacco daily	23.3% (20.8 – 25.8)	43.4% (40.1 – 46.7)	4.5% (3.2 – 5.8)
<i>For those who smoke tobacco daily</i>			
Average age started smoking (years)	20.1 (19.6 – 20.6)	19.2 (18.8 – 19.7)	27.7 (25.8 – 29.7)
Step 1 Alcohol Consumption			
Percentage who drank alcohol in the past 12 months	66.9% (64.2 – 69.5)	75.7% (72.8 – 78.5)	58.7% (55.0 – 62.3)
Percentage who drank on 5 or more days per week in the past 12 months	0.6% (0.4 – 0.9)	1.1% (0.6 – 1.6)	0.2% (0.0 – 0.4)
Percentage who drank less than once a month in the past 12 months	37.3% (35.0 – 39.7)	31.2% (28.7 – 33.8)	41.1% (40.1 – 46.0)
Step 1 Fruit and Vegetable Consumption (in a typical week)			
Mean number of days fruit consumed	1.8 (1.7 – 1.9)	1.4 (1.3 – 1.6)	2.1 (2.0 – 2.3)
Mean number of servings of fruit consumed on average per day	0.8 (0.7 – 0.8)	0.6 (0.5 – 0.7)	0.9 (0.8 – 1.0)
Mean number of days vegetables consumed	5.7 (5.6 – 5.8)	5.6 (5.4 – 5.7)	5.8 (5.6 – 5.9)
Mean number of servings of vegetables consumed on average per day	1.6 (1.6 – 1.7)	1.6 (1.6 – 1.7)	1.6 (1.5 – 1.7)
Percentage who ate less than 5 servings of fruit and/or vegetables on average per day	91.1% (89.8 – 92.5)	92.3% (90.7 – 94.0)	90.0% (88.3 – 91.8)
Step 1 Physical Activity			
Percentage with low levels of activity (defined as < 600 MET-minutes per week)*	7.4% (6.0 – 8.8)	7.0% (5.3 – 8.8)	7.7% (5.9 – 9.4)
Percentage with high levels of activity (defined as ≥ 3000 MET-minutes per week)*	70.4% (67.5 – 73.4)	74.3% (71.2 – 77.4)	67.2% (63.6 – 70.8)
Median time spent in physical activity on average per day (minutes) (presented with inter-quartile range)	181.4 (85.7 – 330.0)	205.7 (98.5 – 360.0)	175.7 (77.1 – 310.4)
Percentage not engaging in vigorous activity	58.9% (52.3 – 65.6)	51.5% (44.5 – 58.6)	65.2% (58.4 – 72.0)

Results for adults aged 15-64 years (incl. 95% CI)	Both Sexes	Men	Women
Step 2 Physical Measurements			
Mean body mass index - BMI (kg/m ²)	23.9 (23.7-24.1)	23.3 (23.0-23.5)	24.5 (24.3-24.8)
Percentage who are overweight (BMI ≥ 25 kg/m ²)	32.4% (30.3-34.4)	25.6% (23.4-27.9)	38.8% (35.9-41.6)
Percentage who are obese (BMI ≥ 30 kg/m ²)	10.2% (9.0-11.4)	7.3% (5.9-8.6)	13.0% (11.2-14.8)
Mean systolic blood pressure - SBP (mmHg), including those currently on medication for raised BP	124.6 (123.8-125.5)	128.2 (127.3-129.2)	121.3 (120.1-122.4)
Mean diastolic blood pressure - DBP (mmHg) , including those currently on medication for raised BP	76.9 (76.4-77.4)	76.9 (76.2-77.7)	76.8 (76.1-77.6)
Percentage with raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg or currently on medication for raised BP)	28.5% (26.1-30.8)	30.1% (27.4-32.8)	27.0% (23.5-30.5)
Percentage with raised BP (SBP ≥ 140 and/or DBP ≥ 90 mmHg) who are not currently on medication for raised BP	50.4 (45.1-55.8)	66.2% (59.8-72.6)	34.0% (27.8-40.2)
Step 3 Biochemical Measurement			
Mean fasting blood glucose, including those currently on medication for raised blood glucose (mmol/L)	4.9 (4.8-5.0)	5.1 (5.0-5.2)	4.7 (4.6-4.8)
Percentage with impaired fasting glycaemia as defined below - capillary whole blood value ≥5.6 mmol/L (100 mg/dl) and <6.1 mmol/L (110 mg/dl)	10.3% (7.9-12.6)	13.8% (9.6-18.0)	7.0% (4.6-9.3)
Percentage with raised fasting blood glucose as defined below or currently on medication for raised blood glucose - capillary whole blood value ≥ 6.1 mmol/L (110 mg/dl)	10.0% (7.7-12.3)	13.3% (9.5-17.0)	7.0% (4.9-9.0)
Mean total blood cholesterol, including those currently on medication for raised cholesterol (mmol/L)	4.7 (4.7-4.8)	4.7 (4.7-4.8)	4.7 (4.7-4.8)
Percentage with raised total cholesterol (≥ 5.0 mmol/L or ≥ 190 mg/dl or currently on medication for raised cholesterol)	23.9% (20.5-27.3)	23.5% (18.1-28.8)	24.4% (19.2-29.7)

Comparison result III

MONGOLIA STEPS SURVEY 2009

(population weighted results for comparison)

The STEPS survey of chronic disease risk factors in Mongolia carried in 2009. Mongolia carried out Step 1, Step 2 and Step 3. The STEPS survey in Mongolia was a population-based survey of adults aged 15-64. A multi-stage cluster sample design was used each time to produce representative data for that age range in Mongolia. A total of 5438 adults participated in the Mongolia STEPS survey. The results below showed are population weighted only with comparison to STEPS 2005.

Results for adults aged 15-64 years (incl. 95% CI)	Both Sexes	Males	Females
Step 1 Tobacco Use			
Percentage who currently smoke tobacco	27.5% (26.0 – 29.0)	49.4% (46.2 – 52.6)	7.0% (5.4 – 8.6)
Percentage who currently smoke tobacco daily	24.1% (22.9 – 25.4)	44.3% (41.5 – 47.1)	5.3% (3.8 – 6.8)
<i>For those who smoke tobacco daily</i>			
Average age started smoking (years)	19.3 (18.9 – 19.6)	18.7 (18.3 – 19.0)	24 (22.3 – 25.7)
Step 1 Alcohol Consumption			
Percentage who drank alcohol in the past 12 months	58.5% (54.2 – 62.7)	70.4% (66.5 – 74.4)	47.3% (42.3–52.2)
Percentage who drank on 5 or more days per week in the past 12 months	0.8% (0.3 – 1.2)	1.2% (0.5 – 2.0)	0.4% (0.0 – 0.7)
Percentage who drank less than once a month in the past 12 months	36.7% (32.5 – 40.9)	37.0% (32.3 – 41.6)	36.4% (31.8 – 40.9)
Step 1 Fruit and Vegetable Consumption (in a typical week)			
Mean number of days fruit consumed	1.2 (1.0 – 1.3)	1 (0.8 – 1.1)	1.4 (1.2–1.6)
Mean number of servings of fruit consumed on average per day	0.4 (0.3 – 0.5)	0.3 (0.2 – 0.4)	0.5 (0.4–0.6)
Mean number of days vegetables consumed	4.7 (4.3 – 5.0)	4.6 (4.2 – 5.0)	4.7 (4.4–5.1)
Mean number of servings of vegetables consumed on average per day	1.3 (1.1 – 1.5)	1.3 (1.1 – 1.5)	1.3 (1.1–1.6)
Percentage who ate less than 5 servings of fruit and/or vegetables on average per day	92.3% (90.7 – 94.0)	93.8% (91.0 – 96.7)	92.7% (89.8–95.5)
Step 1 Physical Activity			
Percentage with low levels of activity (defined as < 600 MET-minutes per week)*	7.5% (5.1 – 9.9)	7.4% (5.0 – 9.8)	7.6% (4.9–10.3)
Percentage with high levels of activity (defined as ≥ 3000 MET-minutes per week)*	81.80% (77.0 – 86.6)	82.50% (77.8 – 87.3)	81.10% (75.9–86.4)
Median time spent in physical activity on average per day (minutes)	347.1 (162.8 – 507.1)	343.6 (165.7 – 504.3)	347.1 (160.0–510.0)
(presented with inter-quartile range)			
Percentage not engaging in vigorous activity	46.2% (41.3 – 51.2)	39.9% (34.8 – 45.0)	52.1% (46.5–57.7)
Step 2 Physical Measurements			
Mean body mass index - BMI (kg/m ²)	24.7 (24.5–24.9)	24.3 (24.0–24.6)	25.1 (24.8–25.3)

Percentage who are overweight (BMI \geq 25 kg/m ²)	40.7% (38.4-42.9)	37.0% (34.0-40.1)	44.2% (41.8-46.5)
Percentage who are obese (BMI \geq 30 kg/m ²)	12.9% (11.6-14.2)	10.8% (9.2-12.5)	14.8% (13.2-16.5)
Mean systolic blood pressure - SBP (mmHg), including those currently on medication for raised BP	125.9 (124.7-127.1)	130.0 (128.7-131.3)	122.0 (120.7-123.3)
Mean diastolic blood pressure - DBP (mmHg) , including those currently on medication for raised BP	78.9 (78.2-79.7)	79.7 (78.9-80.5)	78.3 (77.5-79.1)
Percentage with raised BP (SBP \geq 140 and/or DBP \geq 90 mmHg or currently on medication for raised BP)	27.8% (25.7-29.9)	31.6% (28.9-34.4)	24.2% (21.9-26.4)
Percentage with raised BP (SBP \geq 140 and/or DBP \geq 90 mmHg) who are not currently on medication for raised BP	62.7% (58.4-67.0)	74.4% (69.6-79.3)	48.1% (43.4-52.7)
Step 3 Biochemical Measurement			
Mean fasting blood glucose, including those currently on medication for raised blood glucose (mmol/L)	4.9 (4.8-5.0)	5.1 (5.0-5.2)	4.7 (4.6-4.8)
Percentage with impaired fasting glycaemia as defined below - capillary whole blood value \geq 5.6 mmol/L (100 mg/dl) and <6.1 mmol/L (110 mg/dl)	9.3% (7.5-11.1)	12.9% (9.9-15.9)	5.9% (4.4-7.5)
Percentage with raised fasting blood glucose as defined below or currently on medication for raised blood glucose - capillary whole blood value \geq 6.1 mmol/L (110 mg/dl)	6.6% (4.8-8.3)	8.8% (6.0-11.7)	4.5% (2.7-6.2)
Mean total blood cholesterol, including those currently on medication for raised cholesterol (mmol/L)	4.3 (4.2-4.5)	4.5 (4.2-4.7)	4.2 (4.1-4.4)
Percentage with raised total cholesterol (\geq 5.0 mmol/L or \geq 190 mg/dl or currently on medication for raised cholesterol)	26.2% (20.5-31.9)	29.4% (22.5-36.3)	23.2% (17.8-28.6)

CHAPTER IV
CONCLUSIONS

GENERAL CONCLUSIONS

1. The current survey on the prevalence of NCD and injury risk factors was conducted using internationally validated survey methodology with external technical support based on local capacity and effective collaboration between different stakeholders. Its findings will be used for mid-term evaluation of the National Program on NCD Prevention and Control, and will serve as a baseline for a health project funded by the Millennium Challenge Account-Mongolia.
2. According to the survey, 24.3% of the Mongolian adult population are current daily smokers, 92.3% consume less than 5 servings of fruits and vegetables a day, 7.5% are physically inactive, 39.8% are overweight or obese, and 27.3% have hypertension.
3. High prevalence of NCD risk factors in an adult population is demonstrated by the fact that 9.5% of the population have hyperglycemia, 8.5% – elevated total cholesterol, 16.4% - hypertriglyceridemia, and 20.2% – increased low density lipoprotein.
4. The summary of combined NCD risk factors demonstrates that 1 in 5 (26.4%) Mongolian adults and 1 in 2 (53.8%) adults above 45 years of age have three or more common modifiable NCD risk factors. Twice as many young men compared to women and more than a half (61.4%) of men above 45 years old have high risk of NCDs.
5. In general, smoking, physical inactivity, hypertension, prevalence of latent diabetes and hypercholesterolemia remained stable, while fruit and vegetable consumption decreased, and prevalence of obesity increased in the past 4 years.
6. One in three adult women practiced breast self-examination, and only 3.2% had clinical breast examination, 5.2% had VIA and 11.4% – Pap smear, which demonstrated low coverage of breast and cervical cancer screening.
7. Prevalence of traffic injury was 4%, and it was caused by speeding in 1 of 5 and drunk driving in 1 of 10 cases. Violence was quite common in the Mongolian society, becoming one of the priority public health issues.
8. The survey results support the need for scaling-up of NCD prevention activities and urgent national implementation of effective preventive and control measures.

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ANNEX I
DETAILED RESULTS

SOCIODEMOGRAPHIC STATUS

Table 1. Marital status

Age Group (years)	Men						
	n	% Never married	% Currently married	% Separated	% Divorced	% Widowed	% Cohabiting
15-24	403	76.4	22.8	0.2	0	0	0.5
25-34	603	15.8	80.8	0.2	1.3	0	2
35-44	568	4	90.7	0.4	3.2	0.5	1.2
45-54	420	3.6	90	1.2	2.6	1.9	0.7
55-64	223	1.3	91.5	0.4	0.9	5.8	0
15-64	2217	20	75.6	0.5	1.8	1.1	1.1

Table 2. Marital status

Age Group (years)	Women						
	n	% Never married	% Currently married	% Separated	% Divorced	% Widowed	% Cohabiting
15-24	496	66.3	28.6	1.6	1	0.6	1.8
25-34	922	10.8	82.8	0.9	2	1.1	2.5
35-44	876	4.2	84.7	0.8	5	4.3	0.9
45-54	626	2.9	80.8	0.2	5	10.7	0.5
55-64	301	2	64.8	0.3	1.7	31.2	0
15-64	3221	15.2	72.9	0.8	3.2	6.6	1.3

Table 3. Marital status

Age Group (years)	Both Sexes						
	n	% Never married	% Currently married	% Separated	% Divorced	% Widowed	% Cohabiting
15-24	899	70.9	26	1	0.6	0.3	1.2
25-34	1525	12.8	82	0.6	1.7	0.7	2.3
35-44	1444	4.2	87	0.6	4.3	2.8	1
45-54	1046	3.2	84.5	0.6	4	7.2	0.6
55-64	524	1.7	76.1	0.4	1.3	20.4	0
15-64	5438	17.2	74	0.6	2.6	4.3	1.2

Table 4. Highest level of education

Age Group (years)	Both Sexes							
	n	% No formal schooling	% Less than primary school	% Primary school completed	% Secondary school completed	% High school completed	% College/ University completed	% Post graduate degree completed
15-24	887	2.1	2.7	8	30.6	34.5	3.7	18.4
25-34	1506	1.6	2.4	12.4	21.4	25.5	7.7	29
35-44	1420	0.9	0.7	4.2	21.8	29.4	22.6	20.4
45-54	1035	0.9	1.5	9.9	23.2	22.1	25.3	17
55-64	519	1.7	2.5	20.6	16.4	14.1	23.3	21.4
15-64	5367	1.4	1.8	9.8	22.9	26.3	15.9	21.9

TOBACCO USE

Table 5. Smoking status

Age Group (years)	Men						
	n	Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
15-24	403	30.2	23.7-36.6	4.8	2.5-7.2	65.0	57.2-72.7
25-34	603	50.1	45.6-54.7	5.4	3.5-7.3	44.5	39.6-49.4
35-44	568	53.2	48.0-58.5	7.1	4.0-10.2	39.6	33.6-45.7
45-54	420	49.6	43.2-56.0	2.7	1.0-4.4	47.6	41.3-54.0
55-64	223	43.6	35.8-51.5	3.9	1.3-6.4	52.5	44.4-60.6
15-64	2217	43.0	39.9-46.0	5.0	4.0-6.1	52.0	48.5-55.5

Table 6. Smoking status

Age Group (years)	Women						
	n	Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
15-24	496	2.0	0.8-3.3	1.9	0.3-3.6	96.0	94.0-98.1
25-34	922	7.7	4.3-11.0	1.4	0.5-2.3	90.9	87.6-94.2
35-44	876	5.5	3.3-7.7	1.7	0.6-2.7	92.9	90.2-95.5
45-54	626	9.0	5.5-12.5	1.9	0.6-3.2	89.1	85.6-92.7
55-64	301	5.1	1.7-8.5	0.3	0.0-0.8	94.6	91.1-98.1
15-64	3221	5.2	3.8-6.7	1.6	0.9-2.4	93.1	91.5-94.8

Table 7. 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	95% CI
15-24	147	86.2	80.9-91.4	21	51.6	24.1-79.1	168	82.8	76.1-89.5
25-34	338	90.3	87.1-93.6	72	84.5	73.3-95.6	410	89.5	86.3-92.7
35-44	336	88.2	83.6-92.8	71	76.8	64.9-88.6	407	87.0	82.8-91.2
45-54	225	94.8	91.5-98.1	63	82.8	70.7-94.9	288	92.9	89.3-96.4
55-64	108	91.9	86.7-97.0	22	94.9	85.1-100.0	130	92.2	87.7-96.8
15-64	1154	89.5	87.6-91.4	249	76.3	66.5-86.0	1403	87.9	85.8-90.0

Table 8. Mean duration of smoking

Age Group (years)	Men			Women			Both Sexes		
	n	Mean duration	95% CI	n	Mean duration	95% CI	n	Mean duration	95% CI
15-24	126	4.5	3.8-5.3	12	3.2	0.9-5.4	138	4.5	3.8-5.1
25-34	298	11.6	11.0-12.1	55	8.2	6.1-10.3	353	11.1	10.5-11.7
35-44	305	19.9	18.8-21.0	55	14.2	10.0-18.4	360	19.4	18.4-20.4
45-54	210	28.8	27.7-29.9	51	21.9	18.9-24.9	261	27.8	26.7-28.9
55-64	99	35.4	33.6-37.2	21	25.8	15.5-36.0	120	34.3	32.1-36.4
15-64	1038	16.1	15.1-17.0	194	13.1	11.0-15.2	1232	15.8	14.9-16.6

Table 9. Manufactured cigarette smokers among daily smokers

Age Group (years)	Men			Women			Both Sexes		
	n	% Manufactured cigarette smoker	95% CI	n	% Manufactured cigarette smoker	95% CI	n	% Manufactured cigarette smoker	95% CI
15-24	126	91.8	85.3-98.3	12	100.0	100.0-100.0	138	92.3	86.2-98.5
25-34	302	87.0	80.4-93.6	55	85.5	64.3-100.0	357	86.8	79.7-93.9
35-44	306	80.4	70.9-89.9	56	89.1	74.0-100.0	362	81.2	72.7-89.8
45-54	210	73.8	63.4-84.2	51	84.2	67.5-100.0	261	75.3	65.7-84.9
55-64	99	83.9	75.2-92.7	21	68.9	34.2-100.0	120	82.3	72.5-92.0
15-64	1043	84.3	78.3-90.2	195	86.9	72.7-100.0	1238	84.6	78.8-90.3

Table 10. Exposed to ETS in home on 1 or more of the past 7 days

Age Group (years)	Men			Women			Both Sexes		
	n	% Exposed	95% CI	n	% Exposed	95% CI	n	% Exposed	95% CI
15-24	403	41.3	32.9-49.7	496	48.5	41.1-55.8	899	44.8	37.8-51.9
25-34	603	36.3	28.6-44.0	922	48.6	43.3-54.0	1525	42.4	37.7-47.2
35-44	568	34.6	27.6-41.6	876	48.4	43.5-53.2	1444	41.5	36.6-46.5
45-54	420	40.5	31.8-49.3	626	46.3	40.4-52.1	1046	43.3	37.5-49.1
55-64	223	32.5	24.8-40.2	301	39.9	32.3-47.4	524	36.3	30.3-42.4
15-64	2217	38.2	32.3-44.1	3221	47.6	43.3-51.9	5438	42.9	38.4-47.3

Table 11. Exposed to ETS in the workplace on 1 or more of the past 7 days

Age Group (years)	Men			Women			Both Sexes		
	n	% Exposed	95% CI	n	% Exposed	95% CI	n	% Exposed	95% CI
15-24	390	38.8	31.0-46.7	481	25.8	20.2-31.3	871	32.4	27.1-37.8
25-34	581	49.3	40.0-58.6	886	30.2	24.4-36.0	1467	39.9	34.0-45.8
35-44	549	46.6	38.6-54.6	839	29.9	25.6-34.3	1388	38.3	33.1-43.4
45-54	409	45.6	37.7-53.5	608	28.3	22.7-33.9	1017	37.2	31.5-43.0
55-64	215	30.7	22.3-39.1	285	20.7	15.3-26.1	500	25.5	19.6-31.5
15-64	2144	43.3	36.7-49.9	3099	27.7	24.0-31.3	5243	35.6	31.1-40.1

ALCOHOL USE

Table 12. Frequency of alcohol consumption in the past 12 months

Age Group (years)	Men										
	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
15-24	218	0.3	0.0-0.8	0.0	0.0-0.0	4.7	0.0-9.5	23.8	14.8-32.8	71.2	61.2-81.1
25-34	489	0.7	0.0-1.6	2.1	0.2-3.9	11.8	6.4-17.1	40.2	32.6-47.8	45.3	36.0-54.6
35-44	458	0.4	0.0-0.8	0.1	0.0-0.4	10.9	6.8-15.0	44.7	37.5-51.9	43.9	34.6-53.2
45-54	311	1.9	0.1-3.7	1.8	0.0-3.8	5.8	2.0-9.6	43.5	33.9-53.2	47.0	37.7-56.3
55-64	157	0.0	0.0-0.0	0.6	0.0-1.6	6.9	2.2-11.6	44.1	34.8-53.3	48.4	39.7-57.1
15-64	1633	0.6	0.1-1.1	0.9	0.2-1.6	8.3	4.9-11.7	37.2	30.3-44.0	52.9	44.7-61.2

Table 13. Frequency of alcohol consumption in the past 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
15-24	196	0.0	0.0-0.0	0.0	0.0-0.0	1.6	0.0-3.5	18.9	10.6-27.2	79.5	70.1-88.9
25-34	484	0.4	0.0-1.0	0.7	0.0-2.0	3.4	1.1-5.6	22.6	16.1-29.1	73.0	65.4-80.6
35-44	481	0.6	0.0-1.3	1.0	0.0-2.4	2.1	0.2-4.0	23.3	18.3-28.4	73.0	66.7-79.2
45-54	307	1.4	0.0-3.8	0.0	0.0-0.0	1.9	0.0-4.0	20.6	13.5-27.8	76.0	67.7-84.4
55-64	105	0.0	0.0-0.0	0.0	0.0-0.0	2.2	0.0-5.2	15.8	6.9-24.6	82.0	72.5-91.5
15-64	1573	0.5	0.0-0.9	0.4	0.0-1.1	2.3	0.9-3.6	21.0	15.9-26.1	75.8	69.8-81.9

Table 14. Category I, II and III drinking among current (past 30 days) drinkers

Age Group (years)	Men						
	n	% Category III	95% CI	% Category II	95% CI	% Category I	95% CI
15-24	118	0.9	0.0-2.6	2.8	0.0-6.0	96.3	92.8-99.9
25-34	354	5.2	1.9-8.6	4.1	1.5-6.6	90.7	86.3-95.1
35-44	315	2.1	0.1-4.1	1.3	0.0-2.7	96.6	94.2-98.9
45-54	223	4.6	1.3-7.9	1.5	0.0-3.1	93.9	90.1-97.6
55-64	115	1.2	0.0-3.1	0.0	0.0-0.0	98.8	96.9-100.0
15-64	1125	3.1	1.4-4.7	2.4	1.1-3.7	94.5	92.1-96.9

Table 15. Category I, II and III drinking among current (past 30 days) drinkers

Age Group (years)	Women						
	n	% Category III	95% CI	% Category II	95% CI	% Category I	95% CI
15-24	95	2.0	0.0-4.7	2.3	0.0-5.6	95.7	91.1-100.0
25-34	285	3.5	0.0-7.9	2.4	0.0-5.1	94.1	88.3-99.8
35-44	277	2.6	0.5-4.6	3.8	1.1-6.6	93.6	89.8-97.3
45-54	174	2.4	0.0-5.2	3.5	0.5-6.4	94.1	90.0-98.3
55-64	54	1.8	0.0-5.0	1.4	0.0-4.1	96.9	92.9-100.0
15-64	885	2.6	1.0-4.3	2.9	1.1-4.6	94.5	91.6-97.4

Table 16. Five/four or more drinks on a single occasion at least once during the past 30 days among total population

Age Group (years)	Men			Women		
	n	% ≥ 5 drinks	95% CI	n	% ≥ 4drinks	95% CI
15-24	403	23.4	17.5-29.3	496	10.1	7.4-12.7
25-34	603	51.5	44.3-58.7	922	18.7	14.1-23.2
35-44	568	52.0	44.2-59.8	876	20.5	15.2-25.7
45-54	420	45.3	39.8-50.8	626	17.6	12.9-22.2
55-64	223	39.2	32.0-46.3	301	7.6	3.0-12.3
15-64	2217	39.7	35.0-44.4	3221	15.1	12.4-17.7

Table 17. Mean maximum number of drinks consumed on one occasion in the past 30 days

Age Group (years)	Men			Women			Both Sexes		
	n	Mean maximum number	95% CI	n	Mean maximum number	95% CI	n	Mean maximum number	95% CI
15-24	118	8.6	7.3-10.0	95	4.1	3.1-5.0	213	6.9	6.1-7.7
25-34	343	11.4	10.2-12.7	285	5.7	4.6-6.7	628	9.3	8.2-10.4
35-44	306	10.9	9.7-12.1	277	6.3	5.5-7.1	583	9.2	8.2-10.1
45-54	220	11.9	10.3-13.4	176	6.4	5.2-7.6	396	10.0	8.9-11.1
55-64	110	11.1	9.5-12.7	55	6.5	3.7-9.2	165	9.8	8.4-11.2
15-64	1097	10.7	9.8-11.5	888	5.5	4.9-6.2	1985	8.8	8.2-9.4

DIET

Table 18. 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
15-24	403	1.2	0.8-1.5	496	1.6	1.3-1.8	899	1.4	1.1-1.6
25-34	603	0.9	0.6-1.1	922	1.4	1.1-1.6	1525	1.1	0.9-1.4
35-44	568	1.0	0.7-1.3	876	1.3	1.0-1.6	1444	1.2	0.9-1.4
45-54	420	0.6	0.4-0.8	626	1.1	0.9-1.3	1046	0.9	0.7-1.0
55-64	223	0.7	0.5-0.9	300	1.0	0.8-1.2	523	0.8	0.7-1.0
15-64	2217	1.0	0.7-1.2	3220	1.4	1.2-1.6	5437	1.2	1.0-1.3

Table 19. 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	Mean number of servings	95% CI	n	Mean number of servings	95% CI
15-24	403	0.5	0.2-0.7	493	0.5	0.4-0.7	896	0.5	0.3-0.7
25-34	598	0.3	0.2-0.4	918	0.5	0.3-0.7	1516	0.4	0.2-0.5
35-44	564	0.3	0.2-0.4	872	0.4	0.3-0.6	1436	0.4	0.3-0.5
45-54	420	0.2	0.1-0.3	625	0.3	0.3-0.4	1045	0.3	0.2-0.3
55-64	223	0.2	0.1-0.3	298	0.3	0.2-0.4	521	0.3	0.2-0.3
15-64	2208	0.3	0.2-0.5	3206	0.5	0.4-0.6	5414	0.4	0.3-0.5

Table 20. 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
15-24	403	4.7	4.1-5.4	496	5.2	4.8-5.7	899	5.0	4.4-5.5
25-34	603	4.7	4.1-5.3	921	4.7	4.2-5.3	1524	4.7	4.2-5.3
35-44	567	4.4	3.8-5.0	876	4.9	4.4-5.5	1443	4.7	4.1-5.2
45-54	420	4.4	3.8-4.9	626	4.6	4.2-5.0	1046	4.5	4.1-4.9
55-64	222	4.8	4.2-5.4	301	4.9	4.3-5.4	523	4.8	4.3-5.4
15-64	2215	4.6	4.1-5.2	3220	4.9	4.5-5.4	5435	4.8	4.3-5.3

Table 21. 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
15-24	400	1.3	1.1-1.6	494	1.7	1.4-2.0	894	1.5	1.2-1.7
25-34	600	1.5	1.1-1.9	916	1.5	1.1-1.9	1516	1.5	1.1-1.9
35-44	565	1.3	1.1-1.5	871	1.5	1.1-1.9	1436	1.4	1.1-1.7
45-54	417	1.3	1.1-1.5	626	1.3	1.1-1.5	1043	1.3	1.1-1.5
55-64	222	1.3	1.0-1.5	300	1.6	1.2-2.0	522	1.4	1.1-1.8
15-64	2204	1.4	1.1-1.6	3207	1.5	1.3-1.8	5411	1.4	1.2-1.7

Table 22. 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
15-24	403	1.8	1.4-2.2	495	2.2	1.8-2.6	898	2.0	1.6-2.4
25-34	603	1.7	1.3-2.2	921	2.0	1.5-2.5	1524	1.9	1.4-2.3
35-44	568	1.6	1.3-1.9	876	1.9	1.5-2.4	1444	1.8	1.4-2.1
45-54	420	1.5	1.2-1.7	626	1.7	1.4-1.9	1046	1.6	1.3-1.8
55-64	223	1.5	1.2-1.8	301	1.9	1.5-2.3	524	1.7	1.4-2.1
15-64	2217	1.7	1.4-2.0	3219	2.0	1.6-2.4	5436	1.8	1.5-2.2

Table 23. 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
15-24	403	34.0	22.5-45.4	48.3	38.0-58.6	9.5	5.2-13.8	8.2	3.5-13.0
25-34	603	34.8	25.6-44.1	44.7	36.2-53.2	12.9	7.9-17.9	7.6	2.1-13.0
35-44	568	39.2	29.7-48.8	42.8	35.6-50.0	13.4	8.0-18.7	4.6	1.9-7.3
45-54	420	41.2	32.4-50.0	44.1	36.7-51.5	9.3	4.9-13.7	5.4	2.1-8.8
55-64	223	34.5	24.8-44.3	50.5	40.5-60.6	12.3	6.6-18.1	2.6	0.0-6.2
15-64	2217	36.3	27.9-44.7	45.9	38.9-53.0	11.2	7.4-15.0	6.6	3.1-10.1

Table 24. 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
15-24	495	23.5	15.9-31.0	51.1	42.6-59.6	15.4	9.5-21.4	10.0	5.9-14.2
25-34	921	33.5	25.0-42.0	44.8	38.3-51.4	12.9	8.8-16.9	8.8	3.5-14.2
35-44	876	33.7	24.9-42.4	45.5	39.3-51.7	11.1	7.6-14.6	9.8	4.7-14.8
45-54	626	34.8	29.1-40.6	47.3	41.0-53.6	12.2	7.9-16.6	5.6	2.1-9.1
55-64	301	34.8	26.1-43.6	39.8	31.5-48.2	18.0	8.4-27.7	7.3	1.7-12.9
15-64	3219	30.2	23.5-36.9	47.2	41.0-53.4	13.7	9.8-17.6	8.9	5.2-12.6

Table 25. 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
15-24	403	91.8	87.0-96.5	495	90.0	85.8-94.1	898	90.9	86.8-95.0
25-34	603	92.4	87.0-97.9	921	91.2	85.8-96.5	1524	91.8	86.7-97.0
35-44	568	95.4	92.7-98.1	876	90.2	85.2-95.3	1444	92.8	89.1-96.5
45-54	420	94.6	91.2-97.9	626	94.4	90.9-97.9	1046	94.5	91.7-97.3
55-64	223	97.4	93.8-100.0	301	92.7	87.1-98.3	524	94.9	90.5-99.4
15-64	2217	93.4	89.9-96.9	3219	91.1	87.4-94.8	5436	92.3	88.7-95.8

Table 26. Mean salt intake 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
15-24	338	6.9	6.3-7.5	460	6.7	6.1-7.3	798	6.8	6.3-7.3
25-34	516	7.6	7.0-8.2	884	7.5	7.0-8.0	1400	7.6	7.1-8.0
35-44	486	7.1	6.5-7.6	840	7.1	6.7-7.6	1326	7.1	6.7-7.5
45-54	352	7.5	6.8-8.1	599	7.6	7.0-8.2	951	7.5	7.0-8.1
55-64	189	8.9	7.5-10.2	289	9.5	8.4-10.7	478	9.2	8.4-10.1
15-64	1881	7.3	6.9-7.7	3072	7.3	6.9-7.7	4953	7.3	6.9-7.7

PHYSICAL ACTIVITY

Table 27. Level of total physical activity

Age Group (years)	Men						
	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
15-24	394	4.1	0.9-7.3	10.3	6.2-14.5	85.6	79.0-92.2
25-34	588	7.9	5.2-10.5	8.5	5.9-11.1	83.6	79.1-88.2
35-44	541	9.3	5.7-13.0	7.6	4.5-10.8	83.0	77.6-88.4
45-54	400	8.2	4.8-11.6	11.5	5.7-17.3	80.3	73.8-86.7
55-64	216	18.0	8.5-27.5	18.6	12.2-25.0	63.4	52.0-74.9
15-64	2139	7.4	4.7-10.1	10.0	7.4-12.7	82.5	77.7-87.4

Table 28. Level of total physical activity

Age Group (years)	Women						
	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
15-24	490	6.8	4.2-9.4	16.0	10.5-21.4	77.2	70.1-84.4
25-34	907	7.7	4.5-10.9	11.8	6.5-17.0	80.6	72.7-88.4
35-44	845	6.3	3.3-9.3	10.4	6.6-14.2	83.3	77.4-89.1
45-54	613	9.6	5.6-13.5	13.2	8.5-18.0	77.2	70.8-83.6
55-64	293	12.5	8.4-16.5	14.4	7.9-20.9	73.2	64.5-81.8
15-64	3148	7.7	5.3-10.1	13.4	9.4-17.4	78.9	72.9-85.0

Table 29. Level of total physical activity

Age Group (years)	Both Sexes						
	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
15-24	884	5.4	2.9-7.9	13.1	8.9-17.3	81.5	75.6-87.4
25-34	1495	7.8	5.2-10.3	10.1	6.5-13.8	82.1	76.4-87.9
35-44	1386	7.8	5.1-10.6	9.0	6.2-11.9	83.1	78.4-87.9
45-54	1013	8.9	5.7-12.1	12.4	8.3-16.4	78.8	73.4-84.1
55-64	509	15.1	9.7-20.6	16.4	11.0-21.8	68.5	59.7-77.3
15-64	5287	7.5	5.2-9.9	11.7	8.7-14.7	80.8	75.7-85.8

Table 30. 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
15-24	394	31.4	23.7-39.1	490	50.4	43.1-57.8	884	40.7	34.3-47.2
25-34	588	45.2	37.9-52.4	907	54.4	46.7-62.0	1495	49.7	43.5-56.0
35-44	541	48.5	40.8-56.2	845	51.1	44.4-57.7	1386	49.8	43.9-55.8
45-54	400	50.3	42.9-57.8	613	59.5	51.7-67.2	1013	54.8	48.4-61.2
55-64	216	68.5	59.2-77.8	293	72.1	65.9-78.4	509	70.4	64.4-76.4
15-64	2139	42.9	37.3-48.4	3148	54.2	48.5-59.8	5287	48.5	43.3-53.6

Table 31. 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
15-24	394	227.3	199.0-255.6	490	196.5	166.2-226.8	884	212.2	185.6-238.8
25-34	588	238.8	205.8-271.8	907	236.6	194.8-278.5	1495	237.7	203.0-272.5
35-44	541	250.1	222.5-277.7	845	235.0	205.2-264.7	1386	242.4	217.7-267.2
45-54	400	218.3	182.5-254.1	613	209.9	181.4-238.5	1013	214.2	185.4-243.0
55-64	216	156.2	117.1-195.3	293	163.6	135.2-192.1	509	160.1	129.3-190.8
15-64	2139	228.8	203.8-253.9	3148	213.3	184.9-241.8	5287	221.1	195.7-246.5

Table 32. Mean minutes of transport-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
15-24	394	66.2	56.6-75.8	490	54.9	44.2-65.6	884	60.6	51.4-69.9
25-34	588	56.9	47.2-66.6	907	64.5	49.7-79.3	1495	60.7	50.2-71.2
35-44	541	65.2	54.4-76.1	845	64.6	55.9-73.3	1386	64.9	56.7-73.1
45-54	400	64.8	55.3-74.3	613	60.9	48.9-72.9	1013	62.9	54.2-71.6
55-64	216	52.4	44.0-60.8	293	69.6	56.7-82.5	509	61.3	52.5-70.1
15-64	2139	62.8	55.8-69.7	3148	60.9	51.2-70.6	5287	61.8	54.0-69.6

Table 33. Mean minutes of recreation-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
15-24	394	76.0	53.3-98.6	490	77.9	63.5-92.4	884	76.9	60.7-93.2
25-34	588	67.3	46.8-87.9	907	93.9	77.3-110.6	1495	80.6	62.4-98.8
35-44	541	75.2	52.7-97.7	845	91.1	75.8-106.4	1386	83.2	65.3-101.2
45-54	400	67.9	49.2-86.6	613	82.3	65.6-99.1	1013	75.0	59.4-90.6
55-64	216	66.3	42.3-90.2	293	83.9	58.4-109.4	509	75.4	53.3-97.5
15-64	2139	72.0	54.2-89.9	3148	85.4	72.7-98.0	5287	78.7	63.8-93.5

Table 34. 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	Inter-quartile range (P25-P75)
15-24	394	231.4	68.7-330	490	188.6	6.4-300	884	311.4	34.3-311.4
25-34	588	235.7	60-360	907	214.3	14.3-360	1495	360.0	34.3-360
35-44	541	251.4	77.1-251.4	845	240.0	50-342.9	1386	360.0	60-360
45-54	400	200.0	17.1-342.9	613	214.3	0-342.9	1013	342.9	15-342.9
55-64	216	77.1	0-300	293	120.0	0-300	509	300.0	0-300
15-64	2139	225.7	51.4-342.9	3148	205.7	7.1-342.9	5287	342.9	25.7-342.9

Table 35. Median minutes of transport-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	Inter-quartile range (P25-P75)
15-24	394	42.9	17.1-100	490	28.6	14.3-64.3	884	34.3	14.3-85.7
25-34	588	30.0	7.1-85.7	907	30.0	8.6-85.7	1495	30.0	8.6-85.7
35-44	541	30.0	0-100	845	34.3	14.3-85.7	1386	30.0	8.6-90
45-54	400	38.6	8.6-100	613	34.3	12.9-77.1	1013	35.0	11.4-90
55-64	216	30.0	12.9-60	293	30.0	8.6-90	509	30.0	8.6-85.7
15-64	2139	34.3	10-90	3148	30.0	12.9-77.1	5287	30.0	11.4-85.7

Table 36. Median minutes of recreation-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	Inter-quartile range (P25-P75)
15-24	394	51.4	8.6-90	490	51.4	8.6-111.4	884	51.4	8.6-102.9
25-34	588	25.7	0-77.1	907	60.0	17.1-120	1495	42.9	5.7-115.7
35-44	541	34.3	0-90	845	60.0	17.1-120	1386	51.4	8.6-120
45-54	400	30.0	0-85.7	613	51.4	8.6-120	1013	42.9	0-94.3
55-64	216	17.1	0-72.9	293	38.6	0-120	509	25.7	0-85.7
15-64	2139	34.3	0-85.7	3148	51.4	11.4-120	5287	51.4	4.3-102.9

PHYSICAL MEASUREMENT

Table 37. 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
15-24	400	10.0	6.1-13.9	74.3	68.8-79.8	13.2	8.3-18.2	2.4	0.6-4.3
25-34	599	1.4	0.4-2.3	58.6	53.4-63.8	29.3	25.5-33.2	10.7	6.6-14.8
35-44	564	2.4	0.8-4.1	45.2	38.8-51.7	35.0	30.1-39.9	17.3	12.6-21.9
45-54	412	0.8	0.0-1.7	43.3	36.4-50.1	38.4	32.4-44.5	17.5	12.7-22.3
55-64	222	0.4	0.0-1.1	39.4	29.0-49.7	31.0	23.9-38.1	29.3	19.2-39.3
15-64	2197	4.6	3.0-6.1	58.4	54.5-62.3	26.0	23.2-28.7	11.1	8.7-13.4

Table 38. BMI classifications

Age Group (years)	Women								
	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
15-24	473	8.9	5.2-12.6	72.0	67.5-76.5	15.2	11.3-19.2	3.9	1.8-5.9
25-34	857	3.8	2.1-5.5	53.3	48.6-58.1	30.6	26.3-35.0	12.2	9.1-15.3
35-44	867	0.9	0.2-1.6	40.6	37.0-44.2	39.5	36.0-43.1	18.9	15.7-22.1
45-54	620	0.7	0.0-1.5	31.6	27.4-35.8	39.6	35.2-44.0	28.1	23.3-32.8
55-64	300	1.2	0.0-2.8	33.0	26.8-39.2	36.2	30.1-42.4	29.5	23.1-36.0
15-64	3117	4.4	2.9-5.9	52.9	50.2-55.5	28.6	26.3-31.0	14.1	12.1-16.0

Table 39. BMI classifications

Age Group (years)	Both Sexes								
	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
15-24	873	9.5	6.4-12.5	73.2	69.6-76.9	14.2	11.1-17.3	3.1	1.8-4.4
25-34	1456	2.5	1.5-3.6	56.1	52.3-59.8	30.0	26.6-33.3	11.4	8.8-14.1
35-44	1431	1.7	0.7-2.6	42.9	39.2-46.7	37.3	34.2-40.3	18.1	15.2-21.0
45-54	1032	0.8	0.1-1.4	37.6	33.0-42.2	39.0	35.5-42.5	22.6	19.1-26.1
55-64	522	0.8	0.0-1.7	36.1	29.6-42.5	33.7	29.0-38.4	29.4	23.6-35.2
15-64	5314	4.5	3.2-5.8	55.7	53.1-58.3	27.3	25.3-29.2	12.5	10.8-14.3

RAISED BLOOD PRESSURE

Table 40. SBP ≥140 and/or DBP ≥ 90 mmHg, excluding those on medication for raised blood pressure

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
15-24	388	12.4	6.9-17.9	483	4.3	2.3-6.3	871	8.4	5.1-11.7
25-34	581	26.1	21.3-31.0	873	9.0	6.5-11.4	1454	17.7	14.4-20.9
35-44	522	29.1	24.5-33.6	737	18.0	14.8-21.2	1259	23.8	20.7-26.8
45-54	339	41.9	36.1-47.8	432	30.0	24.1-35.8	771	36.6	32.6-40.6
55-64	160	59.0	50.5-67.6	173	33.0	24.9-41.1	333	46.8	40.4-53.1
15-64	1990	24.8	21.6-28.1	2698	12.1	10.4-13.9	4688	18.7	16.5-20.9

Table 41. SBP \geq 160 and/or DBP \geq 100 mmHg, excluding those on medication for raised blood pressure

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
15-24	388	1.3	0.0-2.9	483	0.4	0.0-0.9	871	0.8	0.0-1.8
25-34	581	5.2	2.7-7.7	873	1.4	0.4-2.3	1454	3.3	1.8-4.8
35-44	522	7.6	4.7-10.5	737	4.1	2.4-5.8	1259	5.9	4.0-7.8
45-54	339	13.7	8.7-18.6	432	9.1	5.5-12.7	771	11.6	8.5-14.7
55-64	160	24.7	15.7-33.7	173	12.6	6.0-19.1	333	19.0	12.7-25.2
15-64	1990	6.1	4.6-7.6	2698	2.8	2.1-3.6	4688	4.5	3.5-5.5

Table 42. SBP \geq 160 and/or DBP \geq 100 mmHg or currently on medication for raised blood pressure

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
15-24	403	4.8	1.5-8.1	494	2.8	0.6-5.0	897	3.8	1.8-5.9
25-34	601	9.1	6.1-12.1	921	6.8	3.7-10.0	1522	7.9	5.2-10.7
35-44	564	15.4	11.3-19.5	869	19.8	16.3-23.3	1433	17.6	14.7-20.5
45-54	418	32.9	26.1-39.6	624	37.8	32.6-42.9	1042	35.2	30.8-39.7
55-64	223	47.3	40.4-54.1	297	49.0	43.2-54.8	520	48.2	43.2-53.2
15-64	2209	14.5	12.1-16.8	3205	15.0	13.0-17.0	5414	14.7	12.9-16.6

Table 43. Blood pressure measurement and diagnosis

Age Group (years)	Men								
	n	% Never measured	95% CI	% measured, not diagnosed	95% CI	% diagnosed, but not within past 12 months	95% CI	% diagnosed within past 12 months	95% CI
15-24	403	69.3	62.9-75.6	24.9	18.3-31.4	1.0	0.0-2.1	4.9	1.5-8.3
25-34	603	53.1	48.1-58.1	33.4	28.5-38.4	2.8	0.6-5.0	10.7	7.5-13.9
35-44	568	38.5	33.4-43.7	40.2	35.4-45.0	6.0	3.4-8.6	15.3	11.4-19.2
45-54	420	28.8	22.4-35.2	37.2	31.4-42.9	4.0	2.2-5.8	30.0	23.9-36.1
55-64	223	15.7	10.5-21.0	34.2	28.3-40.0	5.3	0.9-9.8	44.8	36.7-52.8
15-64	2217	50.5	47.2-53.7	32.2	29.1-35.3	3.1	2.2-4.0	14.3	12.1-16.5

Table 44. Blood pressure measurement and diagnosis

Age Group (years)	Women								
	n	% Never measured	95% CI	% measured, not diagnosed	95% CI	% diagnosed, but not within past 12 months	95% CI	% diagnosed within past 12 months	95% CI
15-24	496	58.7	52.6-64.9	34.5	29.0-40.0	1.7	0.1-3.2	5.1	2.8-7.3
25-34	922	28.4	23.4-33.4	55.7	49.7-61.6	5.1	3.1-7.1	10.9	8.7-13.1
35-44	876	21.7	18.0-25.4	48.0	41.8-54.1	5.4	3.5-7.3	25.0	20.3-29.6
45-54	626	13.2	9.6-16.7	37.5	33.0-42.1	6.3	3.2-9.3	43.0	38.1-47.9
55-64	301	8.5	5.0-12.1	34.5	28.7-40.2	8.8	4.1-13.4	48.2	42.3-54.1
15-64	3221	34.5	31.0-37.9	42.7	39.0-46.3	4.3	3.0-5.6	18.5	16.7-20.4

Table 45. Blood pressure measurement and diagnosis

Age Group (years)	Both sexes								
	n	% Never measured	95% CI	% measured, not diagnosed	95% CI	% diagnosed, but not within past 12 months	95% CI	% diagnosed within past 12 months	95% CI
15-24	899	64.1	58.7-69.6	29.6	24.2-34.9	1.3	0.1-2.5	5.0	2.7-7.2
25-34	1525	40.9	37.3-44.4	44.5	40.9-48.0	3.9	2.5-5.4	10.8	8.7-12.8
35-44	1444	30.1	26.6-33.5	44.1	39.9-48.3	5.7	4.0-7.4	20.1	17.4-22.8
45-54	1046	21.3	17.5-25.1	37.3	33.4-41.2	5.1	3.3-6.9	36.3	32.7-39.9
55-64	524	12.0	9.0-15.0	34.3	29.9-38.7	7.1	3.6-10.7	46.6	41.6-51.5
15-64	5438	42.6	39.7-45.4	37.4	34.5-40.2	3.7	2.8-4.6	16.4	14.8-17.9

Table 46. Advised by doctor or health worker to reduce salt intake among those previously diagnosed

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
15-24	23	44.7	25.0-64.5	38	20.4	7.0-33.8	61	32.0	17.1-46.9
25-34	75	33.2	18.9-47.4	146	37.7	29.5-45.9	221	35.6	26.8-44.4
35-44	110	34.7	22.0-47.4	256	44.8	36.3-53.3	366	40.7	31.7-49.7
45-54	138	47.4	35.9-58.8	314	54.1	44.5-63.8	452	51.3	43.1-59.4
55-64	104	51.9	39.5-64.4	174	54.8	43.6-66.0	278	53.5	44.5-62.5
15-64	450	42.2	34.6-49.8	928	45.5	39.3-51.7	1378	44.1	38.2-49.9

Table 47. Advised by doctor or health worker to lose weight among those previously diagnosed

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
15-24	15-24	23	5.7	38	8.4	0.0-18.9	61	7.1	0.0-15.6
25-34	25-34	75	15.2	146	23.8	14.8-32.7	221	19.8	12.1-27.6
35-44	35-44	110	33.0	256	34.2	27.7-40.7	366	33.7	27.2-40.3
45-54	45-54	138	30.1	314	37.7	27.7-47.7	452	34.5	25.7-43.2
55-64	55-64	104	40.6	174	30.5	21.3-39.6	278	35.0	26.7-43.3
15-64	TOTAL	450	26.9	928	30.1	24.2-36.1	1378	28.7	22.5-34.9

Table 48. Advised by doctor or health worker to stop smoking among those previously diagnosed

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
15-24	15-24	23	17.8	38	1.4	0.0-4.2	61	9.2	1.0-17.4
25-34	25-34	75	27.5	146	9.9	3.1-16.7	221	18.1	10.0-26.1
35-44	35-44	110	27.4	256	7.5	3.5-11.5	366	15.6	10.7-20.6
45-54	45-54	138	29.6	314	12.0	6.1-17.9	452	19.5	13.1-26.0
55-64	55-64	104	38.1	174	9.9	3.7-16.1	278	22.5	15.9-29.1
15-64	TOTAL	450	28.7	928	9.0	5.3-12.7	1378	17.6	13.5-21.8

Table 49. Advised by doctor or health worker to start or do more exercise among those previously diagnosed

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
15-24	15-24	23	55.2	38	17.6	3.4-31.8	61	35.5	15.6-55.5
25-34	25-34	75	38.9	146	29.8	21.8-37.8	221	34.0	24.3-43.7
35-44	35-44	110	48.9	256	52.1	41.5-62.8	366	50.8	42.5-59.1
45-54	45-54	138	43.3	314	48.8	39.9-57.7	452	46.4	37.8-55.0
55-64	55-64	104	52.6	174	42.5	32.1-52.9	278	47.0	38.0-56.1
15-64	TOTAL	450	46.9	928	42.2	35.6-48.8	1378	44.2	37.8-50.7

Table 50. Currently taking blood pressure drugs prescribed by doctor or health worker among those diagnosed

Age Group (years)	Men			Women			Both Sexes		
	n	% taking meds	95% CI	n	% taking meds	95% CI	n	% taking meds	95% CI
15-24	23	25.4	10.6-40.2	38	23.6	2.2-45.0	61	24.5	9.9-39.0
25-34	75	16.0	7.6-24.4	146	14.5	5.5-23.6	221	15.2	9.8-20.6
35-44	110	21.5	11.6-31.5	256	45.1	37.3-53.0	366	35.5	29.2-41.7
45-54	138	48.7	37.2-60.2	314	52.9	46.0-59.7	452	51.1	44.6-57.6
55-64	104	46.4	31.9-61.0	174	57.9	49.3-66.5	278	52.8	43.4-62.1
15-64	450	33.0	27.9-38.1	928	42.2	37.0-47.4	1378	38.2	34.5-41.8

DIABETES

Table 51. Blood sugar measurement and diagnosis

Age Group (years)	Men								
	n	% Never measured	95% CI	% measured, not diagnosed	95% CI	% diagnosed, but not within past 12 months	95% CI	% diagnosed within past 12 months	95% CI
15-24	403	93.3	90.6-96.0	5.7	3.2-8.2	0.0	0.0-0.0	0.9	0.0-2.2
25-34	603	89.2	86.5-92.0	8.8	6.3-11.4	0.6	0.0-1.3	1.3	0.4-2.2
35-44	568	83.1	79.0-87.1	12.8	9.8-15.8	1.1	0.2-2.0	3.1	1.2-5.0
45-54	420	82.5	78.2-86.8	13.2	9.6-16.8	1.2	0.0-2.6	3.1	1.3-4.9
55-64	223	82.4	75.7-89.1	15.6	8.9-22.4	1.0	0.0-2.2	1.0	0.0-2.2
15-64	2217	88.2	86.2-90.1	9.5	7.8-11.3	0.6	0.3-0.9	1.7	1.0-2.5

Table 52. Blood sugar measurement and diagnosis

Age Group (years)	Women								
	n	% Never measured	95% CI	% measured, not diagnosed	95% CI	% diagnosed, but not within past 12 months	95% CI	% diagnosed within past 12 months	95% CI
15-24	496	91.4	88.4-94.4	8.1	5.1-11.1	0.6	0.0-1.3	0.0	0.0-0.0
25-34	922	83.5	80.0-87.0	14.0	11.1-16.9	0.9	0.3-1.4	1.7	0.6-2.8
35-44	876	79.0	75.1-83.0	17.2	13.1-21.2	1.2	0.3-2.0	2.6	1.4-3.9
45-54	626	67.4	60.9-74.0	26.9	21.6-32.3	1.9	0.7-3.2	3.7	2.2-5.2
55-64	301	67.6	61.6-73.6	25.6	20.7-30.5	4.5	0.9-8.1	2.2	0.5-4.0
15-64	3221	82.1	80.0-84.3	15.1	13.2-16.9	1.2	0.7-1.7	1.6	1.2-2.0

Table 53. Blood sugar measurement and diagnosis

Age Group (years)	Both sexes								
	n	% Never measured	95% CI	% measured, not diagnosed	95% CI	% diagnosed, but not within past 12 months	95% CI	% diagnosed within past 12 months	95% CI
15-24	899	92.4	90.5-94.3	6.9	5.1-8.6	0.3	0.0-0.6	0.5	0.0-1.1
25-34	1525	86.4	84.1-88.6	11.4	9.4-13.4	0.7	0.4-1.1	1.5	0.8-2.2
35-44	1444	81.0	77.9-84.2	15.0	12.3-17.7	1.1	0.6-1.7	2.8	1.8-3.9
45-54	1046	75.2	71.0-79.4	19.8	16.4-23.2	1.6	0.5-2.6	3.4	2.2-4.6
55-64	524	74.7	69.3-80.1	20.8	16.4-25.2	2.8	0.9-4.8	1.6	0.5-2.7
15-64	5438	85.2	83.5-86.9	12.3	10.8-13.7	0.9	0.6-1.2	1.7	1.3-2.1

Table 54. Currently taking insulin prescribed for diabetes among those previously diagnosed

Age Group (years)	Men			Women			Both Sexes		
	n	% taking insulin	95% CI	n	% taking insulin	95% CI	n	% taking insulin	95% CI
15-24	2	0.0	0.0-0.0	3	0.0	0.0-0.0	5	0.0	0.0-0.0
25-34	12	9.4	0.0-24.2	27	0.8	0.0-2.4	39	4.5	0.0-10.4
35-44	17	14.0	0.0-31.9	30	7.2	0.0-15.3	47	10.8	0.0-21.9
45-54	18	23.4	0.0-49.5	40	9.9	0.1-19.6	58	16.0	2.4-29.7
55-64	6	20.8	0.0-56.1	15	9.3	0.0-28.5	21	11.7	0.0-29.2
15-64	55	14.0	1.3-26.7	115	6.3	1.9-10.8	170	9.9	3.4-16.3

Table 55. Currently taking oral drugs prescribed for diabetes among those previously diagnosed

Age Group (years)	Men			Women			Both Sexes		
	n	% taking meds	95% CI	n	% taking meds	95% CI	n	% taking meds	95% CI
15-24	2	0.0	0.0-0.0	3	0.0	0.0-0.0	5	0.0	0.0-0.0
25-34	12	14.4	0.0-42.0	27	1.7	0.0-5.2	39	7.2	0.0-19.5
35-44	17	5.0	0.0-15.4	30	21.1	0.0-42.6	47	12.7	0.0-25.4
45-54	18	34.5	4.4-64.6	40	34.4	18.1-50.7	58	34.4	19.3-49.6
55-64	6	51.0	9.1-93.0	15	9.3	0.0-28.5	21	18.1	0.0-38.3
15-64	55	16.3	4.7-27.9	115	17.1	8.7-25.4	170	16.7	10.0-23.5

Table 56. Advised by doctor or health worker to reduce salt intake among those previously diagnosed

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
15-24	23	44.7	25.0-64.5	38	20.4	7.0-33.8	61	32.0	17.1-46.9
25-34	75	33.2	18.9-47.4	146	37.7	29.5-45.9	221	35.6	26.8-44.4
35-44	110	34.7	22.0-47.4	256	44.8	36.3-53.3	366	40.7	31.7-49.7
45-54	138	47.4	35.9-58.8	314	54.1	44.5-63.8	452	51.3	43.1-59.4
55-64	104	51.9	39.5-64.4	174	54.8	43.6-66.0	278	53.5	44.5-62.5
15-64	450	42.2	34.6-49.8	928	45.5	39.3-51.7	1378	44.1	38.2-49.9

Table 57. Advised by doctor or health worker to lose weight among those previously diagnosed

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
15-24	15-24	23	5.7	38	8.4	0.0-18.9	61	7.1	0.0-15.6
25-34	25-34	75	15.2	146	23.8	14.8-32.7	221	19.8	12.1-27.6
35-44	35-44	110	33.0	256	34.2	27.7-40.7	366	33.7	27.2-40.3
45-54	45-54	138	30.1	314	37.7	27.7-47.7	452	34.5	25.7-43.2
55-64	55-64	104	40.6	174	30.5	21.3-39.6	278	35.0	26.7-43.3
15-64	TOTAL	450	26.9	928	30.1	24.2-36.1	1378	28.7	22.5-34.9

Table 58. Advised by doctor or health worker to stop smoking among those previously diagnosed

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
15-24	15-24	23	17.8	38	1.4	0.0-4.2	61	9.2	1.0-17.4
25-34	25-34	75	27.5	146	9.9	3.1-16.7	221	18.1	10.0-26.1
35-44	35-44	110	27.4	256	7.5	3.5-11.5	366	15.6	10.7-20.6
45-54	45-54	138	29.6	314	12.0	6.1-17.9	452	19.5	13.1-26.0
55-64	55-64	104	38.1	174	9.9	3.7-16.1	278	22.5	15.9-29.1
15-64	TOTAL	450	28.7	928	9.0	5.3-12.7	1378	17.6	13.5-21.8

Table 59. Advised by doctor or health worker to start or do more exercise among those previously diagnosed

Age Group (years)	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
15-24	15-24	23	55.2	38	17.6	3.4-31.8	61	35.5	15.6-55.5
25-34	25-34	75	38.9	146	29.8	21.8-37.8	221	34.0	24.3-43.7
35-44	35-44	110	48.9	256	52.1	41.5-62.8	366	50.8	42.5-59.1
45-54	45-54	138	43.3	314	48.8	39.9-57.7	452	46.4	37.8-55.0
55-64	55-64	104	52.6	174	42.5	32.1-52.9	278	47.0	38.0-56.1
15-64	TOTAL	450	46.9	928	42.2	35.6-48.8	1378	44.2	37.8-50.7

INJURY AND VIOLENCE

Table 60. Percentage of respondents who were seriously injured other than road traffic crashes

Age Group (years)	n	Men													
		% Fall	95% CI	% Burn	95% CI	% Cut	95% CI	% Animal Bites	95% CI	% Frostbite	95% CI	% Hit by Obj	95% CI	% Other	95% CI
15-24	45	49.5	30.9-68.1	3.8	0.0-11.2	12.0	0.0-25.1	0.0	0.0-0.0	2.1	0.0-6.3	23.4	6.9-39.9	9.1	1.1-17.2
25-34	57	50.0	31.5-68.4	0.9	0.0-2.2	13.0	0.0-26.3	1.6	0.0-4.8	0.0	0.0-0.0	17.4	5.7-29.0	17.2	6.7-27.7
35-44	41	65.6	45.9-85.2	8.5	0.0-24.7	0.0	0.0-0.0	0.0	0.0-0.0	0.0	0.0-0.0	6.8	0.0-13.8	19.1	2.9-35.3
45-54	35	56.6	33.2-80.0	0.0	0.0-0.0	11.6	0.0-24.1	0.0	0.0-0.0	5.1	0.0-14.0	21.7	10.2-33.3	4.9	0.0-12.1
55-64	10	84.7	62.5-100.0	0.0	0.0-0.0	0.0	0.0-0.0	0.0	0.0-0.0	0.0	0.0-0.0	5.9	0.0-18.0	9.4	0.0-28.2
15-64	188	54.3	42.4-66.2	3.2	0.0-7.1	9.9	1.6-18.3	0.4	0.0-1.2	1.6	0.0-3.8	18.4	10.5-26.4	12.2	6.6-17.8

Table 61. Percentage of respondents who were seriously injured other than road traffic crashes

Age Group (years)	Women														
	n	% Fall	95% CI	% Burn	95% CI	% Cut	95% CI	% Animal Bites	95% CI	% Frostbite	95% CI	% Hit by Obj	95% CI	% Other	95% CI
15-24	28	60.8	45.7-75.9	5.4	0.0-16.1	9.3	0.0-21.2	0.0	0.0-0.0	0.0	0.0-0.0	8.7	0.0-20.5	15.8	2.7-28.9
25-34	36	52.4	31.9-72.9	2.5	0.0-7.5	10.3	0.0-23.7	9.8	0.0-28.2	0.0	0.0-0.0	21.9	7.8-36.0	3.1	0.0-9.2
35-44	49	53.0	34.1-71.9	5.7	0.0-13.4	0.0	0.0-0.0	0.9	0.0-2.8	0.0	0.0-0.0	20.7	4.8-36.6	19.7	1.6-37.8
45-54	33	67.7	45.4-89.9	0.0	0.0-0.0	0.0	0.0-0.0	3.2	0.0-9.7	0.0	0.0-0.0	17.2	1.7-32.6	12.0	0.0-28.5
55-64	24	79.1	62.3-95.8	0.0	0.0-0.0	0.0	0.0-0.0	14.4	0.0-30.4	0.0	0.0-0.0	5.9	0.0-14.2	0.6	0.0-1.9
15-64	170	60.4	52.7-68.2	3.7	0.0-8.0	5.1	0.1-10.1	3.6	0.3-6.9	0.0	0.0-0.0	14.5	8.6-20.5	12.7	5.7-19.7

Table 62. Percentage of respondents who were seriously injured other than road traffic crashes

Age Group (years)	Both Sexes														
	n	% Fall	95% CI	% Burn	95% CI	% Cut	95% CI	% Animal Bites	95% CI	% Frostbite	95% CI	% Hit by Obj	95% CI	% Other	95% CI
15-24	73	53.3	40.3-66.3	4.4	0.0-10.4	11.2	2.5-19.8	0.0	0.0-0.0	1.4	0.0-4.2	18.5	6.4-30.6	11.3	3.8-18.9
25-34	93	50.6	34.6-66.6	1.3	0.0-2.9	12.3	2.3-22.3	3.7	0.0-8.8	0.0	0.0-0.0	18.6	9.4-27.7	13.6	5.3-21.8
35-44	90	59.9	43.4-76.3	7.2	0.0-15.9	0.0	0.0-0.0	0.4	0.0-1.3	0.0	0.0-0.0	13.1	4.9-21.3	19.4	8.2-30.5
45-54	68	60.9	41.1-80.7	0.0	0.0-0.0	7.2	0.0-15.4	1.2	0.0-3.7	3.1	0.0-8.9	20.0	11.5-28.5	7.6	0.4-14.9
55-64	34	81.3	67.7-94.8	0.0	0.0-0.0	0.0	0.0-0.0	8.7	0.0-19.5	0.0	0.0-0.0	5.9	0.0-13.0	4.1	0.0-11.4
15-64	358	56.5	47.5-65.5	3.4	0.6-6.1	8.2	2.7-13.6	1.5	0.3-2.8	1.0	0.0-2.4	17.0	11.2-22.9	12.4	7.9-16.9

Table 63. Location of accidental serious injuries among respondents seriously injured

Age Group (years)	Men													
	n	% Home	95% CI	% School/workplace	95% CI	% Road-Street-Highway	95% CI	% Farm	95% CI	% Sports-Athletic area	95% CI	% other	95% CI	
15-24	45	25.3	14.1-36.5	20.6	5.8-35.5	33.2	17.6-48.8	0.8	0.0-2.3	14.9	1.4-28.4	5.2	0.0-11.8	
25-34	57	19.9	7.9-31.9	18.3	9.1-27.6	29.9	16.0-43.9	0.8	0.0-2.3	10.2	0.0-21.8	20.8	8.3-33.4	
35-44	41	30.6	12.6-48.6	15.3	3.2-27.4	27.9	13.2-42.6	2.9	0.0-7.1	4.8	0.0-11.6	18.5	5.2-31.8	
45-54	35	17.1	3.6-30.6	26.7	6.2-47.2	35.9	13.5-58.3	3.4	0.0-10.4	3.3	0.0-10.0	13.5	0.0-27.7	
55-64	10	17.0	0.0-47.9	30.0	0.0-61.2	28.9	0.0-60.9	0.0	0.0-0.0	0.0	0.0-0.0	24.1	0.0-56.8	
15-64	188	23.3	16.5-30.2	20.4	12.3-28.5	31.8	23.5-40.0	1.4	0.0-2.8	10.1	3.4-16.7	13.1	6.2-19.9	

Table 64. Location of accidental serious injuries among respondents seriously injured

Age Group (years)	Women													
	n	% Home	95% CI	% School/workplace	95% CI	% Road-Street-Highway	95% CI	% Farm	95% CI	% Sports-Athletic area	95% CI	% other	95% CI	
15-24	29	18.4	1.9-34.8	32.5	7.7-57.3	41.7	20.7-62.7	0.0	0.0-0.0	2.1	0.0-6.4	5.3	0.0-15.8	
25-34	37	36.6	17.2-56.1	11.4	0.0-23.2	42.2	21.3-63.2	0.0	0.0-0.0	0.0	0.0-0.0	9.8	0.7-18.8	
35-44	49	25.9	12.1-39.7	21.1	5.9-36.3	40.4	17.7-63.1	1.9	0.0-4.7	5.5	0.0-13.4	5.1	0.0-12.6	
45-54	33	33.7	11.4-56.0	8.1	0.4-15.7	50.5	27.7-73.2	3.3	0.0-9.9	1.0	0.0-2.8	3.6	0.0-8.8	
55-64	24	25.6	5.5-45.6	7.7	0.0-17.1	64.4	40.4-88.3	0.0	0.0-0.0	0.0	0.0-0.0	2.4	0.0-7.2	
15-64	172	25.9	17.3-34.6	20.6	8.3-32.9	44.9	32.4-57.4	0.9	0.0-2.1	2.2	0.0-4.7	5.4	0.8-10.0	

Table 65. Location of accidental serious injuries among respondents seriously injured

Age Group (years)	Both Sexes												
	n	% Home	95% CI	% School/workplace	95% CI	% Road-Street-Highway	95% CI	% Farm	95% CI	% Sports-Athletic area	95% CI	% other	95% CI
15-24	74	23.0	13.2-32.7	24.6	11.7-37.6	36.1	26.0-46.1	0.5	0.0-1.5	10.6	1.3-20.0	5.2	0.0-10.6
25-34	94	24.2	13.3-35.2	16.5	9.2-23.9	33.1	20.3-46.0	0.6	0.0-1.7	7.6	0.0-16.3	18.0	7.7-28.2
35-44	90	28.5	18.5-38.5	17.9	6.6-29.3	33.6	21.8-45.3	2.5	0.0-5.1	5.1	0.0-10.2	12.5	3.6-21.3
45-54	68	23.5	11.4-35.6	19.5	7.4-31.5	41.6	27.2-55.9	3.4	0.0-10.1	2.4	0.0-6.6	9.7	0.7-18.6
55-64	34	22.2	6.1-38.3	16.5	2.4-30.6	50.4	27.1-73.7	0.0	0.0-0.0	0.0	0.0-0.0	10.9	0.0-24.5
15-64	360	24.3	18.6-30.0	20.4	13.7-27.2	36.5	30.8-42.2	1.2	0.0-2.5	7.2	2.6-11.9	10.3	5.7-14.9

Table 66. Cause of crash among those respondents involved road traffic crash, by age group

Age Group (years)	Men												
	n	% Drunk driving	95% CI	% Fatigue/disease	95% CI	% Speeding	95% CI	% Pedestrian violation of rule	95% CI	% External factor	95% CI	% Other	95% CI
15-24	20	3.6	0.0-10.9	0.0	0.0-0.0	24.7	3.3-46.2	0.0	0.0-0.0	13.4	0.0-28.4	58.3	31.8-84.8
25-34	49	13.5	0.0-27.3	7.3	0.0-16.2	18.7	5.7-31.6	0.3	0.0-0.8	7.8	0.7-14.8	52.5	31.7-73.3
35-44	39	7.1	0.0-15.8	0.0	0.0-0.0	33.0	17.6-48.4	6.0	0.0-14.0	4.1	0.0-9.5	49.7	32.2-67.3
45-54	14	9.5	0.0-23.9	8.9	0.0-22.5	35.4	0.0-71.2	0.0	0.0-0.0	0.0	0.0-0.0	46.1	14.0-78.2
55-64	5	0.0	0.0-0.0	0.0	0.0-0.0	23.1	0.0-63.2	0.0	0.0-0.0	31.4	0.0-81.1	45.5	0.0-92.5
15-64	127	8.6	2.4-14.9	3.5	0.0-7.1	25.2	16.5-34.0	1.6	0.0-3.5	8.3	3.3-13.3	52.7	40.5-64.8

Table 67. Cause of crash among those respondents involved road traffic crash, by age group

Age Group (years)	Women												
	n	% Drunk driving	95% CI	% Fatigue/disease	95% CI	% Speeding	95% CI	% Pedestrian violation of rule	95% CI	% External factor	95% CI	% Other	95% CI
15-24	15	18.8	0.0-41.2	7.5	0.0-22.4	5.7	0.0-17.3	0.0	0.0-0.0	11.1	0.0-24.9	56.9	24.0-89.8
25-34	20	7.9	0.0-20.2	8.6	0.0-21.3	30.3	6.6-53.9	1.0	0.0-3.1	4.6	0.0-13.9	47.7	24.8-70.5
35-44	15	0.0	0.0-0.0	10.5	0.0-30.3	13.7	0.0-31.6	0.0	0.0-0.0	7.1	0.0-21.5	68.7	44.3-93.2
45-54	11	0.0	0.0-0.0	0.0	0.0-0.0	19.0	0.0-44.8	0.0	0.0-0.0	18.3	0.0-39.9	62.7	30.1-95.3
55-64	3	0.0	0.0-0.0	0.0	0.0-0.0	39.3	0.0-100.0	0.0	0.0-0.0	0.0	0.0-0.0	60.7	0.0-100.0
15-64	64	10.2	0.0-21.1	7.5	0.0-15.7	15.3	5.7-24.9	0.3	0.0-0.8	9.2	1.2-17.1	57.5	41.0-74.1

Table 68. Cause of crash among those respondents involved road traffic crash, by age group

Age Group (years)	Both Sexes												
	n	% Drunk driving	95% CI	% Fatigue/disease	95% CI	% Speeding	95% CI	% Pedestrian violation of rule	95% CI	% External factor	95% CI	% Other	95% CI
15-24	35	9.2	0.0-19.1	2.8	0.0-8.4	17.7	3.7-31.6	0.0	0.0-0.0	12.6	1.9-23.3	57.8	37.1-78.5
25-34	69	12.4	1.3-23.6	7.5	0.0-15.2	20.8	9.1-32.6	0.4	0.0-1.0	7.2	1.3-13.0	51.6	33.3-69.9
35-44	54	5.5	0.0-12.2	2.3	0.0-7.0	28.7	16.4-41.0	4.7	0.0-10.9	4.8	0.0-9.9	53.9	39.5-68.4
45-54	25	6.7	0.0-16.7	6.3	0.0-15.5	30.7	2.6-58.7	0.0	0.0-0.0	5.3	0.0-11.9	51.0	24.1-77.8
55-64	8	0.0	0.0-0.0	0.0	0.0-0.0	26.2	0.0-61.3	0.0	0.0-0.0	25.3	0.0-67.7	48.5	5.0-91.9
15-64	191	9.1	3.8-14.3	4.6	1.1-8.0	22.7	15.7-29.7	1.2	0.0-2.7	8.5	4.6-12.5	53.9	44.5-63.4

Table 69. Percentage of respondents seriously injured from violent incidents

Age Group (years)	Men			Women			Both Sexes		
	n	% Seriously injured from violent incidents	95% CI	n	% Seriously injured from violent incidents	95% CI	n	% Seriously injured from violent incidents	95% CI
15-24	401	5.7	2.7-8.7	494	1.9	0.5-3.2	895	3.8	2.1-5.6
25-34	602	3.2	1.6-4.7	920	3.0	1.1-4.8	1522	3.1	2.0-4.2
35-44	566	4.8	2.5-7.0	874	4.0	1.9-6.1	1440	4.4	3.1-5.7
45-54	420	3.2	1.1-5.3	622	1.6	0.4-2.9	1042	2.4	1.2-3.7
55-64	223	2.9	0.3-5.5	299	1.3	0.0-2.9	522	2.1	0.4-3.7
15-64	2212	4.4	2.9-5.9	3209	2.5	1.8-3.2	5421	3.5	2.6-4.3

Table 70. Percentage of those receiving violent injuries caused by different persons

Age Group	Men														
	n	% Intimate partner	95% CI	% Parent	95% CI	% Child, sibling, or other relative	95% CI	% Friend or acquaintance	95% CI	% Stranger	95% CI	% Official or legal authorities	95% CI	% Other	95% CI
15-24	27	0.0	0.0-0.0	7.5	0.0-16.3	2.7	0.0-7.6	62.1	43.9-80.3	27.7	10.3-45.1	0.0	0.0-0.0	0.0	0.0-0.0
24-34	25	5.3	0.0-13.8	0.0	0.0-0.0	4.0	0.0-10.1	57.9	34.9-80.8	30.0	8.7-51.2	2.9	0.0-8.7	0.0	0.0-0.0
35-44	28	3.8	0.0-11.3	0.0	0.0-0.0	3.6	0.0-11.1	29.7	10.6-48.7	47.7	25.9-69.5	15.2	2.8-27.7	0.0	0.0-0.0
45-54	12	0.0	0.0-0.0	0.0	0.0-0.0	0.0	0.0-0.0	41.4	7.8-75.0	51.1	17.1-85.2	0.0	0.0-0.0	7.4	0.0-22.6
55-64	5	0.0	0.0-0.0	0.0	0.0-0.0	26.1	0.0-71.1	0.0	0.0-0.0	73.9	28.9-100.0	0.0	0.0-0.0	0.0	0.0-0.0
15-64	97	1.8	0.0-4.0	3.5	0.0-7.9	3.9	0.6-7.2	49.9	38.0-61.7	36.5	24.6-48.4	3.8	0.0-7.5	0.7	0.0-2.1

Table 71. Percentage of those receiving violent injuries caused by different persons

Age Group	Women														
	n	% Intimate partner	95% CI	% Parent	95% CI	% Child, sibling, or other relative	95% CI	% Friend or acquaintance	95% CI	% Stranger	95% CI	% Official or legal authorities	95% CI	% Other	95% CI
15-24	10	30.9	0.0-67.3	0.0	0.0-0.0	8.3	0.0-25.4	38.4	0.6-76.2	22.4	0.0-56.2	0.0	0.0-0.0	0.0	0.0-0.0
25-34	18	39.0	15.3-62.6	0.0	0.0-0.0	23.8	7.3-40.3	9.2	0.0-21.9	28.1	10.8-45.3	0.0	0.0-0.0	0.0	0.0-0.0
35-44	26	34.1	19.2-48.9	0.0	0.0-0.0	20.6	4.1-37.0	5.7	0.0-13.3	39.7	21.9-57.6	0.0	0.0-0.0	0.0	0.0-0.0
45-54	9	0.0	0.0-0.0	0.0	0.0-0.0	17.6	0.0-38.8	73.2	47.1-99.2	0.0	0.0-0.0	9.3	0.0-28.5	0.0	0.0-0.0
55-64	2	0.0	0.0-0.0	0.0	0.0-0.0	0.0	0.0-0.0	77.7	27.7-100.0	0.0	0.0-0.0	0.0	0.0-0.0	22.3	0.0-72.3
15-64	65	30.4	13.9-46.8	0.0	0.0-0.0	17.1	8.4-25.8	24.2	7.9-40.4	26.9	13.6-40.2	0.9	0.0-2.7	0.6	0.0-1.8

Table 72. Percentage of those receiving violent injuries caused by different persons

Age Group	Both Sexes														
	n	% Intimate partner	95% CI	% Parent	95% CI	% Child, sibling, or other relative	95% CI	% Friend or acquaintance	95% CI	% Stranger	95% CI	% Official or legal authorities	95% CI	% Other	95% CI
15-24	37	7.6	0.0-18.8	5.6	0.0-12.4	4.1	0.0-9.2	56.3	41.5-71.0	26.4	11.6-41.2	0.0	0.0-0.0	0.0	0.0-0.0
25-34	43	20.4	6.9-33.9	0.0	0.0-0.0	12.8	2.3-23.3	36.1	15.9-56.3	29.1	16.6-41.6	1.6	0.0-4.8	0.0	0.0-0.0
35-44	54	17.5	8.1-26.9	0.0	0.0-0.0	11.3	2.7-19.9	18.8	6.2-31.4	44.1	29.5-58.6	8.3	0.6-16.0	0.0	0.0-0.0
45-54	21	0.0	0.0-0.0	0.0	0.0-0.0	6.2	0.0-14.8	52.6	29.8-75.4	33.1	9.0-57.2	3.3	0.0-10.0	4.8	0.0-14.6
55-64	7	0.0	0.0-0.0	0.0	0.0-0.0	19.4	0.0-54.4	19.9	0.0-55.4	55.0	13.0-96.9	0.0	0.0-0.0	5.7	0.0-17.6
15-64	162	11.8	4.3-19.3	2.3	0.0-5.2	8.5	4.9-12.1	40.9	30.5-51.3	33.1	24.3-42.0	2.8	0.3-5.2	0.7	0.0-1.7

ANNEX II
SURVEY RESULT, BY STRATUM

TOBACCO USE

Table 1. Smoking status

Stratum	Men						
	n	Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
Urban	996	43.3	39.3-47.2	5.7	3.8-7.5	51.1	46.3-55.8
Rural	1221	42.7	38.2-47.2	4.5	3.4-5.6	52.8	47.9-57.7
Total	2217	43.0	39.9-46.0	5.0	4.0-6.1	52.0	48.5-55.4

Table 2. Smoking status

Stratum	Women						
	n	Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
Urban	1550	5.9	4.3-7.5	2.3	0.9-3.6	91.8	89.8-93.9
Rural	1671	4.5	2.0-7.1	0.9	0.4-1.5	94.6	91.9-97.2
Total	3221	5.2	3.8-6.7	1.6	0.9-2.4	93.1	91.5-94.8

Table 3. Smoking status

Stratum	Both Sexes						
	n	Current smoker				% Does not smoke	95% CI
		% Daily	95% CI	% Non-daily	95% CI		
Urban	2546	23.7	21.7-25.7	3.9	2.7-5.1	72.4	69.7-75.2
Rural	2892	25.0	23.1-26.8	2.8	2.2-3.4	72.2	70.2-74.3
Total	5438	24.3	22.9-25.7	3.4	2.7-4.0	72.3	70.6-74.0

Table 4. Mean age started smoking

Stratum	Men			Women			Both Sexes		
	n	Mean age	95% CI	n	Mean age	95% CI	n	Mean age	95% CI
Urban	470	18.9	18.1-19.8	107	22.6	20.5-24.7	577	19.4	18.8-20.1
Rural	568	18.5	17.9-19.1	87	24.1	20.6-27.5	655	19.0	18.3-19.6
TOTAL	1038	18.7	18.2-19.2	194	23.2	21.3-25.1	1232	19.2	18.7-19.6

Table 5. Mean duration of smoking

Stratum	Men			Women			Both Sexes		
	n	Mean duration	95% CI	n	Mean duration	95% CI	n	Mean duration	95% CI
Urban	470	14.9	13.4-16.5	107	12.2	9.9-14.6	577	14.6	13.3-15.9
Rural	568	17.1	16.0-18.2	87	14.3	11.0-17.7	655	16.9	15.7-18.0
TOTAL	1038	16.1	15.1-17.1	194	13.1	11.0-15.2	1232	15.8	14.9-16.7

ALCOHOL USE

Table 6. Alcohol consumption status

Stratum	Men								
	n	% Current drinker (past 30 days)	95% CI	% Drank in past 12 months, not current	95% CI	% Past 12 months abstainer	95% CI	% Lifetime abstainer	95% CI
Urban	996	49.3	42.7-55.9	21.7	15.3-28.0	5.0	2.9-7.1	24.0	17.1-30.9
Rural	1221	50.2	42.8-57.6	18.8	13.2-24.4	6.9	4.5-9.3	24.1	17.6-30.6
TOTAL	2217	49.8	44.8-54.8	20.1	15.9-24.4	6.1	4.4-7.7	24.0	19.3-28.8

Table 7. Alcohol consumption status

Stratum	Women								
	n	% Current drinker (past 30 days)	95% CI	% Drank in past 12 months, not current	95% CI	% Past 12 months abstainer	95% CI	% Lifetime abstainer	95% CI
Urban	1550	27.6	23.2-32.0	21.9	16.7-27.1	6.6	4.7-8.6	43.9	34.4-53.3
Rural	1671	26.7	19.6-33.9	16.9	12.0-21.8	11.1	7.2-15.0	45.3	36.7-53.9
TOTAL	3221	27.2	23.1-31.3	19.5	15.9-23.1	8.8	6.5-11.0	44.5	38.1-51.0

Table 8. Alcohol consumption status

Stratum	Both Sexes								
	n	% Current drinker (past 30 days)	95% CI	% Drank in past 12 months, not current	95% CI	% Past 12 months abstainer	95% CI	% Lifetime abstainer	95% CI
Urban	2546	37.9	33.7-42.2	21.8	16.4-27.1	5.9	4.2-7.6	34.4	26.5-42.3
Rural	2892	39.3	32.5-46.0	17.9	12.9-22.9	8.9	6.2-11.6	33.9	26.5-41.4
TOTAL	5438	38.6	34.6-42.6	19.8	16.1-23.5	7.4	5.7-9.1	34.2	28.7-39.6

Table 9. Mean number of times with five/four or more drinks during a single occasion in the past 30 days among current drinkers

Stratum	Men			Women		
	n	Mean number of times	95% CI	n	Mean number of times	95% CI
Urban	531	1.8	1.6-2.1	424.0	1.0	0.7-1.2
Rural	645	2.2	1.7-2.8	469.0	1.0	0.8-1.2
TOTAL	1176	2.1	1.7-2.4	893.0	1.0	0.8-1.1

CONSUMPTION OF FRUITS AND VEGETABLES

Table 10. Number of servings of fruit and/or vegetables on average per day

Stratum	Men								
	n	% no fruit and/or vegetables	95% CI	% 1-2 servings	95% CI	% 3-4 servings	95% CI	% ≥5 servings	95% CI
Urban	996	15.1	11.1-19.0	60.5	51.5-69.5	14.4	9.4-19.4	10.1	3.8-16.3
Rural	1221	54.5	41.7-67.3	33.4	25.4-41.4	8.4	3.0-13.9	3.7	0.2-7.2
TOTAL	2217	36.3	26.5-46.1	45.9	38.1-53.7	11.2	7.4-15.0	6.6	3.1-10.2

Table 11. Number of servings of fruit and/or vegetables on average per day

Stratum	Women								
	n	% no fruit and/or vegetables	95% CI	% 1-2 servings	95% CI	% 3-4 servings	95% CI	% ≥5 servings	95% CI
Urban	1549	14.2	10.5-18.0	56.0	47.1-64.8	17.2	12.0-22.5	12.6	6.8-18.3
Rural	1670	47.6	35.2-60.0	37.7	29.6-45.7	9.8	4.4-15.3	4.9	0.4-9.4
TOTAL	3219	30.2	22.3-38.2	47.2	40.6-53.8	13.7	9.7-17.7	8.9	5.1-12.7

Table 12. Less than five servings of fruit and/or vegetables on average per day

Stratum	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
Urban	996	89.9	83.7-96.2	1549	87.4	81.7-93.2	2545	88.6	82.8-94.5
Rural	1221	96.3	92.8-99.8	1670	95.1	90.6-99.6	2891	95.8	91.8-99.7
TOTAL	2217	93.4	89.8-96.9	3219	91.1	87.3-94.9	5436	92.3	88.6-95.9

Table 13. Mean consumption of salt per day

Stratum	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
Urban	815	6.4	5.9-6.8	1466	6.6	6.2-7.1	2281	6.5	6.1-6.9
Rural	1066	8.1	7.5-8.7	1606	8.0	7.4-8.7	2672	8.1	7.5-8.6
TOTAL	1881	7.3	6.8-7.8	3072	7.3	6.9-7.7	4953	7.3	6.9-7.7

PHYSICAL ACTIVITY

Table 14. Level of total physical activity

Stratum	Men						
	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
Urban	982	12.0	7.3-16.7	12.9	9.0-16.8	75.1	67.1-83.2
Rural	1157	3.3	1.4-5.2	7.5	3.9-11.1	89.2	84.3-94.1
TOTAL	2139	7.4	4.5-10.3	10.0	7.3-12.8	82.5	77.4-87.7

Table 15. Level of total physical activity

Stratum	Women						
	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
Urban	1528	10.8	7.1-14.6	17.4	12.0-22.9	71.7	63.1-80.4
Rural	1620	4.2	1.6-6.7	8.9	3.6-14.2	87.0	79.6-94.3
TOTAL	3148	7.7	5.1-10.2	13.4	9.3-17.5	78.9	72.6-85.3

Table 16. Level of total physical activity

Stratum	Both Sexes						
	n	% Low	95% CI	% Moderate	95% CI	% High	95% CI
Urban	2510	11.4	7.5-15.2	15.3	11.2-19.3	73.3	65.8-80.9
Rural	2777	3.7	1.7-5.8	8.2	4.1-12.3	88.1	82.5-93.8
TOTAL	5287	7.5	5.0-10.1	11.7	8.6-14.8	80.8	75.4-86.1

Table 17. No vigorous physical activity

Stratum	Men			Women			Both Sexes		
	n	% no vigorous activity	95% CI	n	% no vigorous activity	95% CI	n	% no vigorous activity	95% CI
Urban	982	46.9	39.0-54.9	1528.0	61.5	56.5-66.4	2510	54.5	48.5-60.6
Rural	1157	39.2	31.6-46.9	1620.0	46.1	35.8-56.3	2777	42.4	34.1-50.8
TOTAL	2139	42.9	37.3-48.4	3148.0	54.2	48.2-60.1	5287	48.5	43.1-53.8

PHYSICAL MEASUREMENT

Table 18. BMI classifications

Stratum	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
Urban	991	5.2	2.7-7.8	55.7	49.4-61.9	28.1	24.6-31.7	11.0	7.0-15.0
Rural	1206	4.0	2.2-5.8	60.8	56.2-65.4	24.1	20.3-27.8	11.1	8.6-13.7
TOTAL	2197	4.6	3.0-6.1	58.4	54.5-62.4	26.0	23.2-28.7	11.1	8.8-13.4

Table 19. BMI classifications

Stratum	Women								
	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
Urban	1508	5.1	2.6-7.6	51.9	48.5-55.4	28.3	24.8-31.9	14.6	12.1-17.1
Rural	1609	3.7	2.3-5.0	53.9	50.0-57.9	29.0	25.8-32.1	13.4	10.5-16.4
TOTAL	3117	4.4	2.9-5.9	52.9	50.3-55.5	28.6	26.3-31.0	14.1	12.1-16.0

Table 20. BMI classifications

Stratum	Both Sexes								
	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
Urban	2499	5.2	3.1-7.3	53.7	50.1-57.3	28.2	25.9-30.6	12.9	10.0-15.7
Rural	2815	3.9	2.5-5.3	57.7	54.3-61.0	26.3	23.3-29.3	12.2	10.2-14.2
TOTAL	5314	4.5	3.2-5.8	55.7	53.1-58.3	27.3	25.3-29.2	12.5	10.8-14.2

Table 21. BMI≥25

Stratum	Men			Women			Both Sexes		
	n	% BMI≥25	95% CI	n	% BMI≥25	95% CI	n	% BMI≥25	95% CI
Urban	991	39.1	33.0-45.2	1508	43.0	39.4-46.5	2499	41.1	37.5-44.7
Rural	1206	35.2	30.2-40.1	1609	42.4	38.2-46.6	2815	38.5	34.7-42.3
TOTAL	2197	37.0	33.0-41.0	3117	42.7	40.0-45.4	5314	39.8	37.1-42.5

Table 22. Waist circumference (cm)

Stratum	Men			Women		
	n	Mean	95% CI	n	Mean	95% CI
Urban	992	83.5	81.8-85.2	1511	81.7	80.6-82.9
Rural	1216	83.0	81.7-84.3	1613	83.5	82.2-84.9
TOTAL	2208	83.2	82.2-84.3	3124	82.6	81.7-83.5

RAISED BLOOD PRESSURE

Table 23. SBP ≥140 and/or DBP ≥ 90 mmHg, excluding those on medication for raised blood pressure

Stratum	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Urban	886	23.9	19.8-28.0	1317	10.2	7.7-12.7	2203	16.8	14.1-19.6
Rural	1105	25.5	20.6-30.3	1378	14.2	12.1-16.4	2483	20.4	17.0-23.8
TOTAL	1991	24.8	21.5-28.0	2695	12.1	10.3-13.9	4686	18.6	16.4-20.9

Table 24. SBP ≥140 and/or DBP ≥ 90 mmHg or currently on medication for raised blood pressure

Stratum	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Urban	990	30.7	26.0-35.3	1540	20.4	17.1-23.7	2530	25.3	21.8-28.8

Rural	1219	32.0	27.6-36.5	1665	26.2	22.5-29.9	2884	29.3	26.1-32.6
TOTAL	2209	31.4	28.2-34.6	3205	23.2	20.6-25.8	5414	27.3	24.9-29.8

Table 25. SBP \geq 160 and/or DBP \geq 100 mmHg, excluding those on medication for raised blood pressure

Stratum	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Urban	886	7.2	4.7-9.8	1317	3.0	2.0-4.0	2203	5.1	3.4-6.7
Rural	1105	5.1	3.5-6.7	1378	2.6	1.5-3.7	2483	4.0	2.9-5.0
TOTAL	1991	6.1	4.6-7.6	2695	2.8	2.1-3.6	4686	4.5	3.5-5.5

Table 26. SBP \geq 160 and/or DBP \geq 100 mmHg or currently on medication for raised blood pressure

Stratum	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Urban	990	15.4	11.8-19.1	1540	14.1	11.6-16.5	2530	14.7	12.0-17.4
Rural	1219	13.5	10.4-16.5	1665	16.2	12.9-19.4	2884	14.7	12.2-17.3
TOTAL	2209	14.4	12.0-16.8	3205	15.1	13.1-17.1	5414	14.7	12.9-16.6

Table 27. Respondents with treated and/or controlled raised blood pressure

Stratum	Men						
	n	% Not on medication and SBP \geq 140 and/orDBP \geq 90	95% CI	% On medication and SBP<140 and DBP<90	95% CI	% On medication and SBP \geq 140 and/orDBP \geq 90	95% CI
Urban	371	71.2	64.4-77.9	4.4	1.6-7.2	24.4	18.9-29.9
Rural	439	72.5	64.7-80.2	10.0	4.8-15.3	17.5	12.0-23.0
TOTAL	810	71.9	66.6-77.1	7.5	4.2-10.8	20.6	16.4-24.8

Table 28. Respondents with treated and/or controlled raised blood pressure

Stratum	Women						
	n	% Not on medication and SBP \geq 140 and/orDBP \geq 90	95% CI	% On medication and SBP<140 and DBP<90	95% CI	% On medication and SBP \geq 140 and/orDBP \geq 90	95% CI
Urban	418	44.4	37.6-51.3	23.6	18.6-28.6	31.9	26.4-37.4
Rural	513	47.3	39.7-54.8	19.4	14.3-24.6	33.3	26.6-40.0
TOTAL	931	46.0	40.8-51.1	21.4	17.6-25.1	32.7	28.2-37.1

Table 29. Respondents with treated and/or controlled raised blood pressure

Stratum	Both Sexes						
	n	% Not on medication and SBP \geq 140 and/orDBP \geq 90	95% CI	% On medication and SBP<140 and DBP<90	95% CI	% On medication and SBP \geq 140 and/orDBP \geq 90	95% CI
Urban	789	60.0	55.0-64.9	12.5	9.2-15.7	27.6	23.5-31.6
Rural	952	62.1	54.6-69.6	13.9	10.1-17.8	24.0	18.5-29.5
TOTAL	1741	61.1	56.4-65.8	13.3	10.7-15.8	25.6	22.1-29.2

BIOCHEMICAL INDICATORS

Table 30. Mean total cholesterol (mmol/L)

Stratum	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
Urban	292	4.3	4.0-4.7	456	4.1	3.8-4.3	748	4.2	3.9-4.5
Rural	314	4.6	4.3-5.0	476	4.4	4.1-4.7	790	4.5	4.2-4.8
TOTAL	606	4.5	4.2-4.7	932	4.2	4.0-4.4	1538	4.4	4.1-4.6

Table 31. Mean total cholesterol (mg/dl)

Stratum	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
Urban	292	167.9	153.9-181.8	456	157.6	147.8-167.5	748	162.6	151.8-173.4
Rural	314	178.2	164.4-192.0	476	169.9	157.7-182.1	790	174.1	162.0-186.3
TOTAL	606	173.3	163.5-183.2	932	163.8	155.7-171.9	1538	168.6	160.3-176.9

Table 32. Total cholesterol ≥ 5.0 mmol/L or ≥ 190 mg/dl or currently on medication for raised cholesterol

Stratum	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Urban	292	26.1	16.2-36.0	456	19.7	13.1-26.3	748	22.8	15.8-29.8
Rural	314	28.6	20.2-37.0	476	25.2	16.1-34.3	790	26.9	18.6-35.2
TOTAL	606	27.4	21.0-33.9	932	22.5	16.8-28.2	1538	25.0	19.4-30.5

Table 33. Total cholesterol ≥ 6.2 mmol/L or ≥ 240 mg/dl or currently on medication for raised cholesterol

Stratum	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Urban	292	8.1	1.6-14.6	456	4.3	2.7-5.9	748	6.2	2.7-9.6
Rural	314	12.0	6.5-17.5	476	9.3	3.0-15.7	790	10.7	5.7-15.7
TOTAL	606	10.2	5.9-14.4	932	6.8	3.4-10.3	1538	8.5	5.3-11.7

Table 34. Mean fasting triglycerides (mmol/L)

Stratum	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
Urban	286	1.7	1.4-2.0	447	1.2	1.1-1.3	733	1.4	1.3-1.6
Rural	296	1.4	1.2-1.5	452	1.1	1.0-1.2	748	1.2	1.1-1.4
TOTAL	582	1.5	1.4-1.7	899	1.1	1.1-1.2	1481	1.3	1.2-1.4

Table 35. Mean fasting triglycerides (mg/dl)

Stratum	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
Urban	286	149.4	124.9-173.8	447	105.1	94.0-116.2	733	126.4	111.2-141.7
Rural	296	121.4	106.1-136.7	452	95.5	86.4-104.5	748	108.7	96.9-120.4
TOTAL	582	134.8	119.8-149.8	899	100.3	93.0-107.7	1481	117.4	107.3-127.5

Table 36. Percentage of respondents with fasting triglycerides ≥ 1.7 mmol/L or ≥ 150 mg/dl

Stratum	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Urban	286	32.6	24.8-40.5	447	18.1	12.9-23.4	733	25.1	20.1-30.1
Rural	296	26.6	18.3-34.9	452	12.6	7.8-17.3	748	19.7	13.9-25.6
TOTAL	582	29.5	23.7-35.3	899	15.4	11.8-19.0	1481	22.4	18.4-26.3

Table 37. Percentage of respondents with fasting triglycerides ≥ 2.0 mmol/L or ≥ 180 mg/dl

Stratum	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Urban	286	26.9	18.3-35.5	447	11.3	7.7-14.9	733	18.8	13.9-23.8
Rural	296	20.5	12.2-28.8	452	7.4	4.2-10.6	748	14.1	9.0-19.2
TOTAL	582	23.6	17.5-29.7	899	9.4	6.9-11.9	1481	16.4	12.8-20.1

Table 38. Mean LDL cholesterol (mmol/L)

Stratum	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
Urban	304	3.6	3.4-3.8	464	3.5	3.3-3.7	768	3.5	3.4-3.7
Rural	336	3.3	3.1-3.5	502	3.2	3.0-3.3	838	3.2	3.1-3.4
TOTAL	640	3.4	3.3-3.6	966	3.3	3.2-3.5	1606	3.4	3.2-3.5

Table 39. Mean fasting triglycerides (mg/dl)

Stratum	Men			Women			Both Sexes		
	n	Mean	95% CI	n	Mean	95% CI	n	Mean	95% CI
Urban	304	137.7	130.1-145.3	464	133.8	127.0-140.6	768	135.7	128.7-142.7
Rural	336	125.8	119.0-132.7	502	121.4	115.0-127.7	838	123.6	117.6-129.5
TOTAL	640	131.5	126.1-136.8	966	127.3	122.4-132.2	1606	129.3	124.5-134.2

Table 40. Percentage of respondents with LDL cholesterol ≥ 4.15

Stratum	Men			Women			Both Sexes		
	n	%	95% CI	n	%	95% CI	n	%	95% CI
Urban	304	26.4	18.2-34.7	464	21.9	15.6-28.2	768	24.1	17.2-31.0
Rural	336	16.7	10.8-22.6	502	13.2	8.8-17.6	838	14.9	10.4-19.4
TOTAL	640	21.3	16.1-26.4	966	17.4	13.5-21.3	1606	19.3	15.1-23.5

INJURY AND VIOLENCE

Table 41. Percentage of drivers or passengers not always using a seat belt

Stratum	Men			Women			Both Sexes		
	n	% Not always using seat belt	95% CI	n	% Not always using seat belt	95% CI	n	% Not always using seat belt	95% CI
Urban	877	69.6	64.7-74.6	1276	85.7	81.4-90.1	2153	78.0	73.6-82.3
Rural	878	88.3	84.8-91.7	1089	93.5	90.9-96.1	1967	90.6	87.8-93.3
TOTAL	1755	78.6	74.7-82.5	2365	88.9	86.2-91.6	4120	83.6	80.7-86.5

Table 42. Cause of crash among those respondents involved in road traffic crash in the past 12 months

Stratum	Men												
	n	% Alcoholic drink	95% CI	% fatigue / illness	95% CI	% excess speed	95% CI	% didn't use pedestrian route	95% CI	% external factor	95% CI	% Other	95% CI
Urban	53	9.3	0.0-18.9	4.2	0.0-9.2	24.9	14.8-34.9	1.7	0.0-4.3	6.6	0.0-14.5	53.4	35.7-71.0
Rural	74	8.1	0.0-16.2	3.0	0.0-8.0	25.6	12.2-38.9	1.5	0.0-4.3	9.7	3.5-16.0	52.1	35.7-68.5
TOTAL	127	8.6	2.5-14.8	3.5	0.0-7.1	25.2	16.6-33.9	1.6	0.0-3.5	8.3	3.3-13.3	52.7	40.6-64.7

Table 43. Cause of crash among those respondents involved in road traffic crash in the past 12 months

Stratum	Women												
	n	% Alcoholic drink	95% CI	% fatigue / illness	95% CI	% excess speed	95% CI	% didn't use pedestrian route	95% CI	% external factor	95% CI	% Other	95% CI
Urban	29	1.8	0.0-4.7	13.7	0.0-30.0	21.4	6.4-36.4	0.6	0.0-1.8	13.5	0.0-28.2	49.1	28.2-69.9
Rural	35	17.1	0.0-34.5	2.5	0.0-7.8	10.3	0.0-21.6	#VALUE!	#VALUE!	5.7	0.0-14.5	64.4	38.7-90.2
TOTAL	64	10.2	0.0-21.2	7.5	0.0-15.8	15.3	5.7-24.9	0.3	0.0-0.8	9.2	1.3-17.1	57.5	41.0-74.1

Table 44. Cause of crash among those respondents involved in road traffic crash in the past 12 months

Stratum	Both Sexes												
	n	% Alcoholic drink	95% CI	% fatigue / illness	95% CI	% excess speed	95% CI	% didn't use pedestrian route	95% CI	% external factor	95% CI	% Other	95% CI
Urban	82	7.4	0.3-14.5	6.6	0.8-12.5	24.0	16.2-31.8	1.4	0.0-3.4	8.4	1.7-15.0	52.2	37.9-66.6
Rural	109	10.4	3.1-17.8	2.9	0.0-6.8	21.6	10.8-32.4	1.1	0.0-3.2	8.7	4.1-13.2	55.3	42.9-67.8
TOTAL	191	9.1	3.9-14.3	4.6	1.1-8.0	22.7	15.7-29.6	1.2	0.0-2.7	8.5	4.6-12.5	53.9	44.5-63.3

Table 45. Percentage of those receiving violent injuries caused by different persons

Stratum	Men														
	n	% Intimate partner	95% CI	% Parent	95% CI	% Child, sibling, or other relative	95% CI	% Friend or acquaintance	95% CI	% Stranger	95% CI	% Official or legal authorities	95% CI	% Other	95% CI
Urban	47	0.5	0.0-1.5	0.0	0.0-0.0	1.8	0.0-5.1	49.6	29.8-69.4	44.7	24.3-65.1	3.4	0.0-8.9	0.0	0.0-0.0
Rural	50	2.7	0.0-6.5	6.2	0.0-13.1	5.4	0.3-10.5	50.1	36.1-64.2	30.3	16.3-44.3	4.0	0.0-9.0	1.2	0.0-3.8
TOTAL	97	1.8	0.0-4.0	3.5	0.0-8.0	3.9	0.5-7.2	49.9	38.2-61.6	36.5	24.5-48.5	3.8	0.1-7.5	0.7	0.0-2.1

Table 46. Percentage of those receiving violent injuries caused by different persons

Stratum	Women													
	n	% Intimate partner	95% CI	% Child, sibling, or other relative	95% CI	% Friend or acquaintance	95% CI	% Stranger	95% CI	% Official or legal authorities	95% CI	% Other	95% CI	
Urban	30	21.6	10.1-33.1	14.7	1.0-28.4	21.1	0.1-42.1	41.5	22.5-60.6	0.0	0.0-0.0	1.1	0.0-3.4	
Rural	35	40.1	10.5-69.6	19.8	9.6-30.0	27.7	3.5-51.9	10.6	0.0-21.9	1.8	0.0-5.7	0.0	0.0-0.0	
TOTAL	65	30.3	13.9-46.8	17.1	8.5-25.7	24.2	8.2-40.2	26.9	12.7-41.1	0.9	0.0-2.7	0.6	0.0-1.8	

Table 47. Percentage of those receiving violent injuries caused by different persons

Stratum	Both Sexes														
	n	% Intimate partner	95% CI	% Parent	95% CI	% Child, sibling, or other relative	95% CI	% Friend or acquaintance	95% CI	% Stranger	95% CI	% Official or legal authorities	95% CI	% Other	95% CI
Urban	77	8.9	2.7-15.1	0.0	0.0-0.0	6.9	1.4-12.5	38.2	21.7-54.7	43.4	29.4-57.4	2.1	0.0-5.3	0.4	0.0-1.3
Rural	85	14.3	1.5-27.2	4.3	0.0-9.2	9.9	5.1-14.7	43.2	30.5-55.8	24.2	13.5-34.9	3.4	0.0-6.9	0.8	0.0-2.6

Table 48. Percentage of respondents To whom you would apply in case of violence

Stratum	Men													
	n	% police	95% CI	% local authority	95% CI	% health worker	95% CI	% family members	95% CI	% friends	95% CI	% teacher	95% CI	
Urban	928	57.7	52.8-62.6	0.4	0.0-0.8	1.5	0.0-3.4	28.1	22.9-33.3	12.3	8.9-15.7	#VALUE!	#VALUE!	
Rural	1153	48.0	40.5-55.5	8.3	2.4-14.3	2.5	1.5-3.5	30.2	25.8-34.7	10.0	6.9-13.1	0.9	0.2-1.7	
TOTAL	2081	52.5	47.6-57.3	4.7	1.3-8.1	2.0	1.0-3.0	29.3	25.8-32.7	11.0	8.7-13.4	0.5	0.1-0.9	

Table 49. Percentage of respondents To whom you would apply in case of violence

Stratum	Women														
	n	% police	95% CI	% local authority	95% CI	% health worker	95% CI	% family members	95% CI	% friends	95% CI	% teacher	95% CI	% someone unfamiliar	95% CI
Urban	1483	49.7	43.0-56.3	1.4	0.3-2.5	0.7	0.3-1.1	41.4	36.3-46.4	6.8	4.8-8.8	0.1	0.0-0.2	0.0	0.0-0.0
Rural	1630	42.7	35.5-50.0	7.7	4.2-11.3	2.7	1.6-3.7	37.9	32.1-43.8	7.7	5.8-9.6	1.3	0.1-2.5	#VALUE!	#VALUE!
TOTAL	3113	46.3	41.3-51.3	4.4	2.5-6.4	1.7	1.1-2.3	39.7	35.8-43.6	7.2	5.8-8.6	0.6	0.0-1.2	0.0	0.0-0.0

Table 50. Percentage of respondents To whom you would apply in case of violence

Stratum	Both Sexes														
	n	% police	95% CI	% local authority	95% CI	% health worker	95% CI	% family members	95% CI	% friends	95% CI	% teacher	95% CI	% someone unfamiliar	95% CI
Urban	2411	53.4	48.0-58.8	0.9	0.2-1.7	1.1	0.2-2.0	35.1	30.5-39.7	9.4	7.4-11.4	0.0	0.0-0.1	0.0	0.0-0.0
Rural	2783	45.5	38.9-52.1	8.0	3.4-12.7	2.6	1.8-3.3	33.9	29.3-38.4	8.9	7.0-10.9	1.1	0.2-2.0	0.0	0.0-0.0
TOTAL	5194	49.4	45.0-53.8	4.6	2.0-7.1	1.8	1.2-2.5	34.5	31.2-37.7	9.1	7.7-10.5	0.6	0.1-1.0	0.0	0.0-0.0

ANNEX III
SURVEY INSTRUMENT

WHO STEPS INSTRUMENT FOR CHRONIC DISEASE RISK FACTOR SURVEILLANCE

MONGOLIA

Survey Information

Location and Date		Response	Code
1	Cluster/Centre/Village ID	_ _ _ _	I1
2	Cluster/Centre/Village name		I2
3	Interviewer ID	_ _ _ _	I3
4	Date of completion of the instrument	_ _ _ _ _ _ _ _ dd mm year	I4

Participant Id Number |_|_|_|_| |_|_|_|_| |_|_|_|_|

Consent, Interview Language and Name		Response	Code
5	Consent has been read and obtained	Yes 1	I5
		No 2 If NO, END	
6	Interview Language	Mongolian 1	I6
		Khazakh 2	
		Other 3	
7	Time of interview (24 hour clock)	_ _ : _ _ hrs mins	I7
8	Family Surname		I8
9	First Name		I9
Additional Information that may be helpful			
10	Contact phone number where possible		I10

Record and file identification information (I5 to I10) separately from the completed questionnaire.

Step 1 Demographic Information

CORE: Demographic Information			
Question	Response		Code
11 Sex (Record Male / Female as observed)	Male	1	C1
	Female	2	
12 What is your date of birth? Don't Know 77 77 7777	<input type="text"/> If known, Go to C4 dd mm year		C2
13 How old are you?	Years	<input type="text"/>	C3
14 In total, how many years have you spent at school or in full-time study (excluding pre-school)?	Years	<input type="text"/>	C4
EXPANDED: Demographic Information			
15 What is the highest level of education you have completed?	No formal schooling	1	C5
	Less than primary school	2	
	Primary school completed	3	
	Secondary school completed	4	
	High school completed	5	
	College completed	6	
	University completed	7	
	Post graduate degree	8	
16 What is your ethnic background?	Refused	88	C6
	Khalkh	1	
	Khazakh	2	
	Other	3	
17 What is your marital status?	Refused	88	C7
	Never married	1	
	Currently married	2	
	Separated	3	
	Divorced	4	
	Widowed	5	
	Cohabiting	6	
18 Which of the following best describes your main work status over the past 12 months? (USE SHOWCARD)	Refused	88	C8
	Government employee	1	
	Non-government employee	2	
	Self-employed	3	
	Non-paid	4	
	Student	5	
	Homemaker	6	
	Retired	7	
	Unemployed (able to work)	8	
	Unemployed (unable to work)	9	
19 How many people, including yourself, live in your household?	Number of people		X1
	Don't know	77	
	Refused	88	
20 How many people older than 18 years, including yourself, live in your household?	Number of people		C9
	Don't know	77	
	Refused	88	

EXPANDED: Demographic Information, Continued					
Question		Response		Code	
21	Taking the past year , can you tell me what the average earnings of the household have been? (RECORD ONLY ONE, NOT ALL 3)	Per week	<input type="checkbox"/>	Go to T1	C10a
		OR per month	<input type="checkbox"/>	Go to T1	C10b
		OR per year	<input type="checkbox"/>	Go to T1	C10c
		Refused	88		C10d
22	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: (READ OPTIONS)	£ 113,056	1		C11
		113,057-282,640	2		
		282,641 - 410,140	3		
		410,141 - 452,640	4		
		452,641-495,140	5		
		≥ 495,141	6		
		Don't Know	77		
Refused	88				

Step 1 Behavioural Measurements

CORE: Tobacco Use					
Now I am going to ask you some questions about various health behaviours. This includes things like smoking, drinking alcohol, eating fruits and vegetables and physical activity. Let's start with tobacco.					
Question	Response		Code		
23	Do you currently smoke any tobacco products , such as cigarettes, cigars or pipes? (USE SHOWCARD)	Yes	1		T1
		No	2 If No, go to T6		
24	Do you currently smoke tobacco products daily ?	Yes	1		T2
		No	2 If No, go to T6		
25	How old were you when you first started smoking daily?	Age (years)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	If Known, go to T5a	T3
		Don't know	77		
26	Do you remember how long ago it was? (RECORD ONLY 1, NOT ALL 3) Don't know 77	In Years	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	If Known, go to T5a	T4a
		OR in Months	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	If Known, go to T5a	T4b
		OR in Weeks	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		T4c
27	On average, how many of the following do you smoke each day? (RECORD FOR EACH TYPE, USE SHOWCARD) Don't Know 77	Manufactured cigarettes	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		T5a
		Hand-rolled cigarettes	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		T5b
		Pipes full of tobacco	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		T5c
		Cigars, cheroots, cigarillos	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		T5d
		Other	If Other, go to T5other, <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> else go to T9		T5e
		Other (please specify):	<input type="checkbox"/> <input type="checkbox"/> Go to T9		T5other

EXPANDED: Tobacco Use					
Question	Response		Code		
28	In the past, did you ever smoke daily?	Yes	1		T6
		No	2 If No, go to T9		
29	Do you currently use any smokeless tobacco such as [snuff, chewing tobacco, betel]? (USE SHOWCARD)	Yes	1		T9
		No	2 If No, go to T12		
30	Do you currently use smokeless tobacco products daily?	Yes	1		T10
		No	2 If No, go to T12		

31	(RECORD FOR EACH TYPE, USE SHOWCARD)	On average, how many times a day do you use	Snuff, by mouth	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	T11a
		Snuff, by nose	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	T11b	
		Chewing tobacco	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	T11c	
		Betel, quid	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	T11d	
		Other	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> If Other, go to T11other, else go to T13	T11e	
Don't Know 77	Other (specify)	<input type="checkbox"/> Go to T13	T11other		
32	In the past, did you ever use smokeless tobacco such as [snuff, chewing tobacco, or betel] daily?	Yes	1	T12	
		No	2		
33	During the past 7 days, on how many days did someone in your home smoke when you were present?	Number of days	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	T13	
		Don't know 77			
34	During the past 7 days, on how many days did someone smoke in closed areas in your workplace (in the building, in a work area or a specific office) when you were present?	Number of days	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	T14	
		Don't know or don't work in a closed area 77			
35	During the past 7 days, on how many days did someone smoke in an enclosed public area (inside a store, bus, etc.) when you were present?	Number of days	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	X2	
		Don't know 77			

CORE: Alcohol Consumption

The next questions ask about the consumption of alcohol.

Question	Response	Code	
36	Have you ever consumed an alcoholic drink such as beer, wine, spirits, fermented cider or [add other local examples]? (USE SHOWCARD OR SHOW EXAMPLES)	Yes 1 No 2 If No, go to D1	A1a
	37	Have you consumed an alcoholic drink within the past 12 months ?	Yes 1 No 2 If No, go to D1
38		During the past 12 months, how frequently have you had at least one alcoholic drink? (READ RESPONSES, USE SHOWCARD)	Daily 1
	5-6 days per week 2		
	1-4 days per week 3		
	1-3 days per month 4		
	Less than once a month 5		
39	Have you consumed an alcoholic drink within the past 30 days ?	Yes 1 No 2 If No, go to D1	A3
		40	During the past 30 days, on how many occasions did you have at least one alcoholic drink?
41	During the past 30 days, when you drank alcohol, on average , how many standard alcoholic drinks did you have during one drinking occasion? (USE SHOWCARD)		

42	During the past 30 days, what was the largest number of standard alcoholic drinks you had on a single occasion, counting all types of alcoholic drinks together?	Largest number Don't Know 77	<input type="text"/>	A6
43	During the past 30 days, how many times did you have for men: five or more for women: four or more standard alcoholic drinks in a single drinking occasion?	Number of times Don't Know 77	<input type="text"/>	A7

EXPANDED: Alcohol Consumption				
44	During the past 30 days, when you consumed an alcoholic drink, how often was it with meals? Please do not count snacks.	Usually with meals	<input type="text"/>	A8
		Sometimes with meals	<input type="text"/>	
		Rarely with meals	<input type="text"/>	
		Never with meals	<input type="text"/>	

CORE: Diet				
The next questions ask about the fruits and vegetables that you usually eat. I have a nutrition card here that shows you some examples of local fruits and vegetables. Each picture represents the size of a serving. As you answer these questions please think of a typical week in the last year.				
Question	Response		Code	
45	In a typical week, on how many days do you eat fruit ? (USE SHOWCARD)	Number of days Don't Know 77	<input type="text"/> If Zero days, go to D3	D1
46	How many servings of fruit do you eat on one of those days? (USE SHOWCARD)	Number of servings Don't Know 77	<input type="text"/>	D2
47	In a typical week, on how many days do you eat vegetables ? (USE SHOWCARD)	Number of days Don't Know 77	<input type="text"/> If Zero days, go to D5	D3
48	How many servings of vegetables do you eat on one of those days? (USE SHOWCARD)	Number of servings Don't know 77	<input type="text"/>	D4

EXPANDED: Diet				
49	What type of oil or fat is most often used for meal preparation in your household? (USE SHOWCARD) (SELECT ONLY ONE)	Olive oil	<input type="text"/>	D5
		Corn oil	<input type="text"/>	
		Sunflower oil	<input type="text"/>	
		Animal fat	<input type="text"/>	
		Dairy oil	<input type="text"/>	
		Margarine	<input type="text"/>	
		Other	<input type="text"/> If Other, go to D5 other	
		None in particular	<input type="text"/>	
		None used	<input type="text"/>	
		Don't know	<input type="text"/>	
Other	<input type="text"/>	D5other		

50	What type of meat is most often used for meal preparation in your household?	Beef	1	X3
		Mutton	2	
		Camel or goat	3	
		Chicken or duck	4	
		Horse	5	
		Marmot	6	
		Fish	7	
		Pork	8	
		Other	9 If Other, go to X4other	
		Don't know	77	
	Other	<input type="checkbox"/>	X4other	
51	On average, how many meals per week do you eat that were not prepared at a home? By meal, I mean breakfast, lunch and dinner.	Number Don't know 77	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	D6
52	On average, how long does it take your household to consume 500 g of salt?	Number of days Don't know 77	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	X4

CORE: Physical Activity

Next I am going to ask you about the time you spend doing different types of physical activity in a typical week. Please answer these questions even if you do not consider yourself to be a physically active person. Think first about the time you spend doing work. Think of work as the things that you have to do such as paid or unpaid work, study/training, household chores, harvesting food/crops, fishing or hunting for food, seeking employment. [Insert other examples if needed]. In answering the following questions 'vigorous-intensity activities' are activities that require hard physical effort and cause large increases in breathing or heart rate, 'moderate-intensity activities' are activities that require moderate physical effort and cause small increases in breathing or heart rate.

Question	Response	Code	
Work			
53	Does your work involve vigorous-intensity activity that causes large increases in breathing or heart rate like [carrying or lifting heavy loads, digging or construction work] for at least 10 minutes continuously? [INSERT EXAMPLES] (USE SHOWCARD)	Yes 1 No 2 If No, go to P 4	P1
54	In a typical week, on how many days do you do vigorous-intensity activities as part of your work?	Number of days <input type="checkbox"/>	P2
55	How much time do you spend doing vigorous-intensity activities at work on a typical day?	Hours : minutes <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> : <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> hrs mins	P3 (a-b)
56	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? [INSERT EXAMPLES] (USE SHOWCARD)	Yes 1 No 2 If No, go to P 7	P4
57	In a typical week, on how many days do you do moderate-intensity activities as part of your work?	Number of days <input type="checkbox"/>	P5

58	How much time do you spend doing moderate-intensity activities at work on a typical day?	Hours : minutes	▬▬ : ▬▬ hrs mins	P6 (a-b)
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Travel to and from places

The next questions exclude the physical activities at work that you have already mentioned. Now I would like to ask you about the usual way you travel to and from places. For example to work, for shopping, to market, to place of worship. [Insert other examples if needed]

59	Do you walk or use a bicycle (pedal cycle) for at least 10 minutes continuously to get to and from places?	Yes	1	P7
		No	2 If No, go to P 10	
60	In a typical week, on how many days do you walk or bicycle for at least 10 minutes continuously to get to and from places?	Number of days	▬	P8
61	How much time do you spend walking or bicycling for travel on a typical day?	Hours : minutes	▬▬ : ▬▬ hrs mins	P9 (a-b)

CORE: Physical Activity, Continued

Question	Response	Code		
Recreational activities				
<i>The next questions exclude the work and transport activities that you have already mentioned. Now I would like to ask you about sports, fitness and recreational activities (leisure), [Insert relevant terms].</i>				
62	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/carry water by bucket from river or well, pull water by gutter, carry stone & coal, heavy work related to dwelling] for at least 10 minutes continuously? [INSERT EXAMPLES] (USE SHOWCARD)	Yes	1	P10
		No	2 If No, go to P 13	
63	In a typical week, on how many days do you do vigorous-intensity sports, fitness or recreational (leisure) activities?	Number of days	▬	P11
64	How much time do you spend doing vigorous-intensity sports, fitness or recreational activities on a typical day?	Hours : minutes	▬▬ : ▬▬ hrs mins	P12 (a-b)
65	Do you do any moderate-intensity sports, fitness or recreational (leisure) activities that cause a small increase in breathing or heart rate such as brisk walking, [cycling, swimming, volleyball, dancing, jogging, carry heavy things of traditional dwelling, berrying or nutting] for at least 10 minutes continuously? [INSERT EXAMPLES] (USE SHOWCARD)	Yes	1	P13
		No	2 If No, go to P16	
66	In a typical week, on how many days do you do moderate-intensity sports, fitness or recreational (leisure) activities?	Number of days	▬	P14
67	How much time do you spend doing moderate-intensity sports, fitness or recreational (leisure) activities on a typical day?	Hours : minutes	▬▬ : ▬▬ hrs mins	P15 (a-b)

EXPANDED: Physical Activity

Sedentary behaviour

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

[INSERT EXAMPLES] (USE SHOWCARD)

68	How much time do you usually spend sitting or reclining on a typical day?	Hours : minutes	<table border="1"> <tr> <td> </td> <td>:</td> <td> </td> </tr> <tr> <td>hrs</td> <td></td> <td>mins</td> </tr> </table>		:		hrs		mins	P16 (a-b)
	:									
hrs		mins								

CORE: History of Raised Blood Pressure

Question	Response	Code
69	Have you ever had your blood pressure measured by a doctor or other health worker?	Yes 1
		No 2 If No, go to H6
70	Have you ever been told by a doctor or other health worker that you have raised blood pressure or hypertension?	Yes 1
		No 2 If No, go to H6
71	Have you been told in the past 12 months?	Yes 1
		No 2

EXPANDED: History of Raised Blood Pressure

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 past two weeks	Yes 1	H3a
		No 2	
72	Advice to reduce salt intake	Yes 1	H3b
		No 2	
	Advice or treatment to lose weight	Yes 1	H3c
		No 2	
	Advice or treatment to stop smoking	Yes 1	H3d
		No 2	
	Advice to start or do more exercise	Yes 1	H3e
		No 2	
73	Have you ever seen a traditional healer for raised blood pressure or hypertension?	Yes 1	H4
		No 2	
74	Are you currently taking any herbal or traditional remedy for your raised blood pressure?	Yes 1	H5
		No 2	

CORE: History of Diabetes

Question	Response	Code
75	Have you ever had your blood sugar measured by a doctor or other health worker?	Yes 1
		No 2 If No, go to M1
76	Have you ever been told by a doctor or other health worker that you have raised blood sugar or diabetes?	Yes 1
		No 2 If No, go to M1

77	Have you been told in the past 12 months?	Yes	1	H7b
		No	2	

EXPANDED: History of Diabetes

Are you currently receiving any of the following treatments/advice for diabetes prescribed by a doctor or other health worker?				
	Insulin	Yes	1	H8a
		No	2	
	Drugs (medication) that you have taken in the past two weeks	Yes	1	H8b
		No	2	
78	Special prescribed diet	Yes	1	H8c
		No	2	
	Advice or treatment to lose weight	Yes	1	H8d
		No	2	
	Advice or treatment to stop smoking	Yes	1	H8e
		No	2	
	Advice to start or do more exercise	Yes	1	H8f
		No	2	
79	Have you ever seen a traditional healer for diabetes or raised blood sugar?	Yes	1	H9
		No	2	
80	Are you currently taking any herbal or traditional remedy for your diabetes?	Yes	1	H10
		No	2	

Breast and Cervical Cancer

Question	Response	Code	
81	Do you have a family history of cancer in a first-degree blood relative? (e.g. mother, father, sister, brother, son, daughter)	Yes 1	X5
	No 2		
82	Have you ever had a cervical cancer examination?	Yes 1	X6
	No 2 If No, go to X11		
83	Have you ever had VIA test? (visual inspection of uterine cervix with acidic acid)	1 year or less 1	X6a
		Between 1 and 2 years 2	
		More than 2 years 3	
		Never 4	
		Don't know 77	
Breast and Cervical Cancer, continued			
Question	Response	Code	
84	Have you ever had a Pap smear test?	1 year or less 1	X6b
		Between 1 and 2 years 2	
		More than 2 years 3	
		Never 4	
		Don't know 77	

85	Have you ever had a breast cancer examination by a health care provider?	Yes	1	X7
		No	2 If No, go to X8	
86	Have you ever had a physical exam of the breasts?	1 year or less	1	X7a
		Between 1 and 2 years	2	
		More than 2 years	3	
		Never	4	
		Don't know	77	
87	Have you ever had a mammogram?	1 year or less	1	X7b
		Between 1 and 2 years	2	
		More than 2 years	3	
		Never	4	
88	How often do you perform breast self-exams?	1 year or less	1	X8
		Between 1 and 2 years	2	
		More than 2 years	3	
		Never	4	
		Don't know	77	

Violence and Injury

CORE: Injury

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

Question	Response	Code
89	All of the time	1
	Sometimes	2
	Never	3
	Have not been in a vehicle in past 30 days	4
	No seat belt in the car I usually am in	5
	Don't Know	77
	Refused	88
		V1

90	All of the time	1	V2
	Sometimes	2	
	Never	3	
	Have not been on a motorcycle or motor-scooter in past 30 days	4	
	Do not have a helmet	5	
	Don't Know	77	
	Refused	88	

104	Who would you directly contact if you were frightened for the safety of yourself or your family?	Police	1	X11
		Public administration staff	2	
		Doctor or other health worker	3	
		Family	4	
		Friends	5	
		Teacher	6	
		Strangers	7	
		Don't know	77	
	Refused	88		

Step 2 Physical Measurements

CORE: Height and Weight				
Question	Response		Code	
105	Interviewer ID		M1	
106	Device IDs for height and weight	Height		M2a
		Weight		M2b
107	Height	in Centimetres (cm)	M3	
108	Weight If too large for scale 666.6	in Kilograms (kg)	M4	
109	For women: Are you pregnant?	Yes	1 If Yes, go to M 8	M5
		No	2	
CORE: Waist				
110	Device ID for waist		M6	
111	Waist circumference	in Centimetres (cm)	M7	
CORE: Blood Pressure				
112	Interviewer ID		M8	
113	Device ID for blood pressure		M9	
114	Cuff size used	Small	1	M10
		Medium	2	
		Large	3	
115	Reading 1	Systolic (mmHg)		M11a
		Diastolic (mmHg)		M11b
116	Reading 2	Systolic (mmHg)		M12a
		Diastolic (mmHg)		M12b
117	Reading 3	Systolic (mmHg)		M13a
		Diastolic (mmHg)		M13b
118	During the past two weeks, have you been treated for raised blood pressure with drugs (medication) prescribed by a doctor or other health worker?	Yes	1	M14
		No	2	

EXPANDED: Hip Circumference and Heart Rate				
119	Heart Rate			
	Reading 1	Beats per minute	▬▬▬▬	M16a
	Reading 2	Beats per minute	▬▬▬▬	M16b
	Reading 3	Beats per minute	▬▬▬▬	M16c
120	Body Fat			X13

Physical Fitness Test

121	Has participant agreed to participate in fitness test? yes -1 no - 2, If no go to STEP2 END			X14
	Measure	Test	Result	Code
122	Power	Push up	Number of attempts in 1 minute ▬▬▬▬	X15
123	Speed	Running in place	Number of attempts within 15 seconds ▬▬▬▬	X16
124	Flexibility	Upward from sitting position (record only the highest number from two attempts)	Number ▬▬▬▬	X17
125	Balance	Standing on one leg	Duration ▬▬▬▬ seconds	X18
126	Tolerability	Deep breath in and out	Duration of breathing ▬▬▬▬ seconds	X19

Step 3 Biochemical Measurements

CORE: Blood Glucose				
Question	Response			Code
127	During the past 12 hours have you had anything to eat or drink, other than water?	Yes	1	B1
		No	2	
128	Technician ID		▬▬▬▬	B2
129	Device ID		▬▬▬▬	B3
130	Time of day blood specimen taken (24 hour clock)	Hours : minutes	▬▬▬ : ▬▬▬ hrs mins	B4
131	Fasting blood glucose Choose accordingly: mmol/l or mg/dl	mmol/l	▬▬▬ . ▬▬▬	B5
		mg/dl	▬▬▬▬ . ▬▬	
132	Today, have you taken insulin or other drugs (medication) that have been prescribed by a doctor or other health worker for raised blood glucose?	Yes	1	B6
		No	2	
CORE: Blood Lipids, Cholesterol				
133	Device ID		▬▬▬▬	B7
134	Total cholesterol Choose accordingly: mmol/l or mg/dl	mmol/l	▬▬▬ . ▬▬▬	B8
		mg/dl	▬▬▬▬ . ▬▬	
135	During the past two weeks, have you been treated for raised cholesterol with drugs (medication) prescribed by a doctor or other health worker?	Yes	1	B9
		No	2	

EXPANDED: Triglycerides and HDL Cholesterol					
136	Device ID				
137	Triglycerides Choose accordingly: mmol/l or mg/dl	mmol/l	□□□ . □□	B10	
		mg/dl	□□□□ . □		
138	HDL Cholesterol Choose accordingly: mmol/l or mg/dl	mmol/l	□□ . □□□	B11	
		mg/dl	□□□□ . □		
139	LDL Cholesterol Choose accordingly: mmol/l or mg/dl	mmol/l	□□ . □□□	X20	
		mg/dl	□□□□ . □		