

Non-Communicable Disease Risk Factor Survey Bangladesh 2010



Bangladesh Society of Medicine



**World Health
Organization**
Country Office for Bangladesh



N.C.D
Directorate General of Health Services



Ministry of Health & Family Welfare

Non-Communicable Disease Risk Factor Survey Bangladesh 2010



Bangladesh Society of Medicine



World Health
Organization
Country Office for Bangladesh



N.C.D
Directorate General of Health Services



Ministry of Health & Family Welfare

WHO Library Cataloguing-in-Publication data

Non-communicable disease risk factor survey, Bangladesh 2010

1. Chronic disease - prevention and control. 2. Risk factors. 3. Health surveys. 4. Sampling studies. 5. Diabetes Mellitus. 6. Hypertension. 7. Alcohol Drinking. 8. Tobacco, Smokeless. 9. Motor Activity. 10. Socioeconomic Factors. 11. Bangladesh. I. Bangladesh Society of Medicine. II. Ministry of Health & Family Welfare, Bangladesh. III. WHO Country Office for Bangladesh.

ISBN 978-92-9022-393-1

(NLM classification: WT 500)

© **World Health Organization 2011**

All rights reserved.

Requests for publications, or for permission to reproduce or translate WHO publications - whether for sale or for noncommercial distribution - can be obtained from Publishing and Sales, World Health Organization, Regional Office for South-East Asia, Indraprastha Estate, Mahatma Gandhi Marg, New Delhi 110 002, India (fax: +91 11 23370197; e-mail: publications@searo.who.int). The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters. All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use. This publication does not necessarily represent the decisions or policies of the World Health Organization.

Printed in Bangladesh



Minister
Ministry of Health & Family Welfare
Government of the People's Republic of Bangladesh

It is a great pleasure to have this report of the National Survey on Non-Communicable Disease (NCD) Risk Factors 2010 in Bangladesh. It is the product of a sincere effort of National Survey on NCD Risk Factors Bangladesh team.

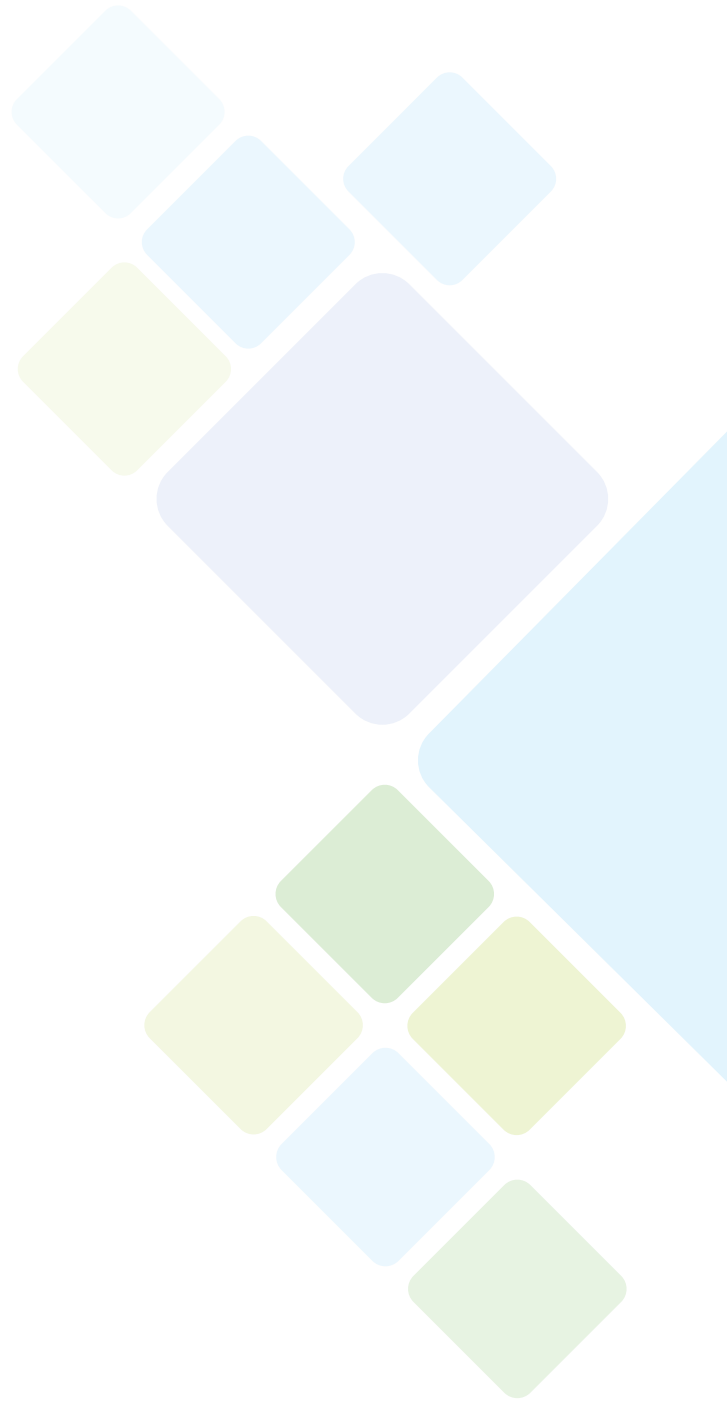
This survey was designed to produce internationally comparable data on NCD risk factors using a standardized questionnaire, sample design, data collection and management procedures.

The Directorate General of Health Services designated the Bangladesh Society of Medicine as the implementing agency for the survey. I am happy that they have completed the survey within the stipulated time. In this regard, I am also grateful to the World Health Organization for their extensive technical assistance.

The present Government is committed to building a "Digital Bangladesh" and the National Survey on NCD Risk Factors was the second ever national survey using electronic means of data collection. This brings Bangladesh one step closer toward a digital Bangladesh.

I trust that this report will contribute to the monitoring of the NCD prevention and control policy package in Bangladesh.

Professor Dr A.F.M. Ruhul Haque





**Advisor to
the Honorable Prime Minister of the
Government of the People's Republic of Bangladesh
(Health & Family Welfare and Social Welfare Ministry)**

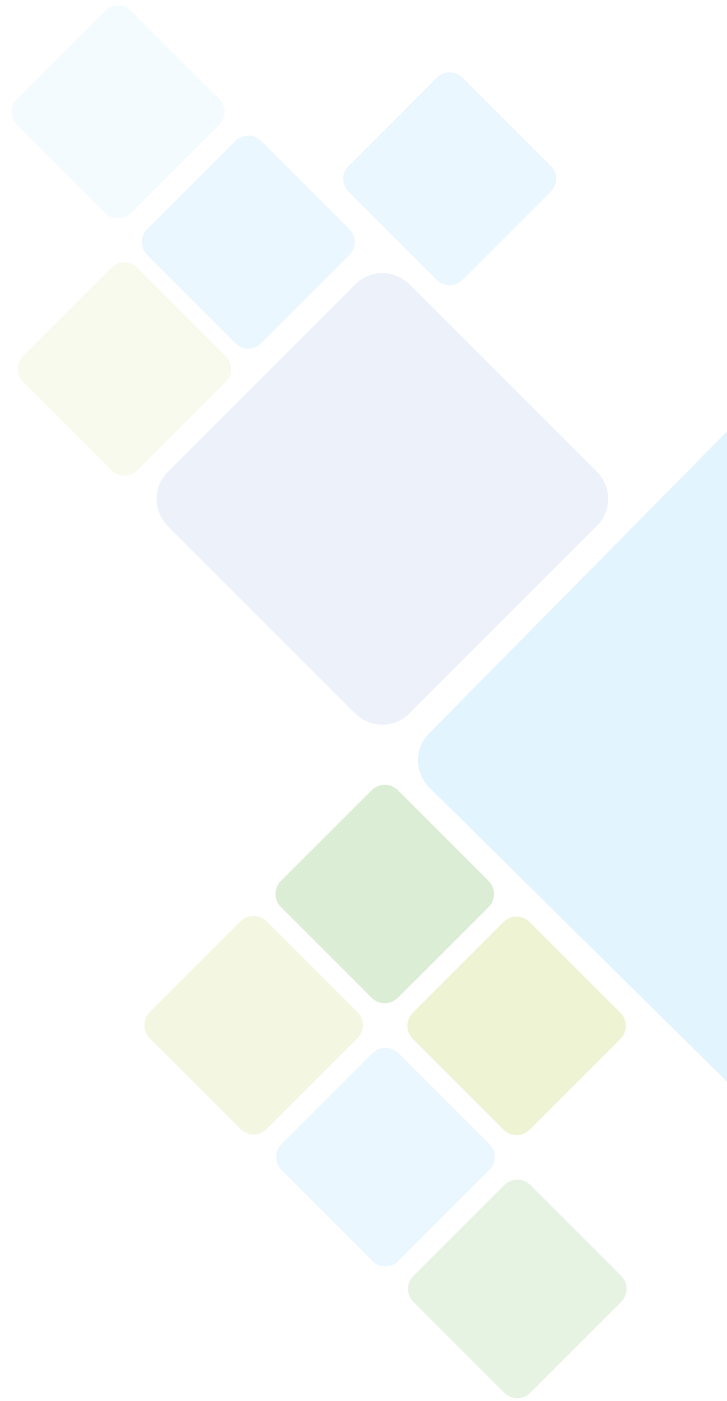
I feel proud that Bangladesh is one of the countries in the world that has undertaken a National Survey on NCD Risk Factors in 2010. It is one of the pioneering countries to complete the study using digital technology. This is towards fulfilling the Government's commitment to build a digital Bangladesh.

Surveillance and evaluation systems are an integral part of NCD control programme. The development of such a system is an obligation for the parties to the WHO Framework Convention on Tobacco Control (FCTC) and Global Strategy on Diet, Physical activity and Health. The National Survey on NCD Risk Factors 2010 will help us monitor the NCD and their risk factors for NCD control policies and programmes in Bangladesh.

I must thank the Bangladesh Society of Medicine for completing this challenging task in a timely manner despite many obstacles. In this regard, I would also like to thank the World Health Organization for their continuous support and technical assistance.

I hope the findings will help in monitoring the indicators of NCDs, WHO FCTC, as well as in monitoring implementation of the Global Strategy on Diet, Physical Activity and Health in Bangladesh.

Professor Dr Syed Modasser Ali





State Minister
Ministry of Health & Family Welfare
Government of the People's Republic of Bangladesh

I am pleased to know that the report of the National Survey on NCD Risk Factors Bangladesh 2010 is now being published after a successful completion of the survey.

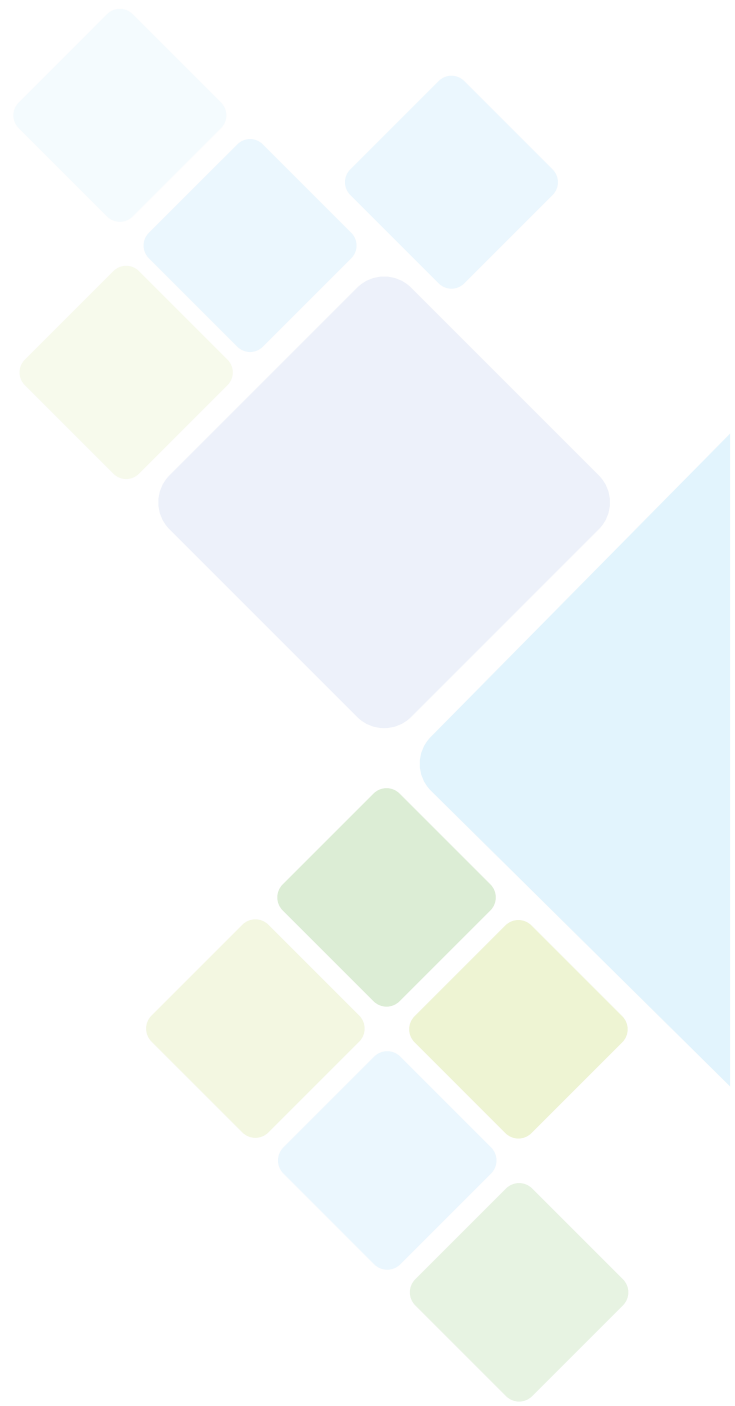
It is exciting to see that the survey covered the whole country, including some very hard-to-reach areas. The National Survey on NCD Risk Factor is a real example of the increasing digital capacity of Bangladesh. The sampling frame that has been established for this study can be used for future health-related studies in Bangladesh, which will make it possible to save time and resources.

I would like to thank Bangladesh Society of Medicine and the World Health Organization for their untiring efforts to conduct this study and publish this report.

I hope the findings of this study will guide implementation of the strategy on NCD prevention and control in Bangladesh.

Joy Bangla
Joy Bangabandhu

Dr Capt. (Retd.) Mozibur Rahman Fakir





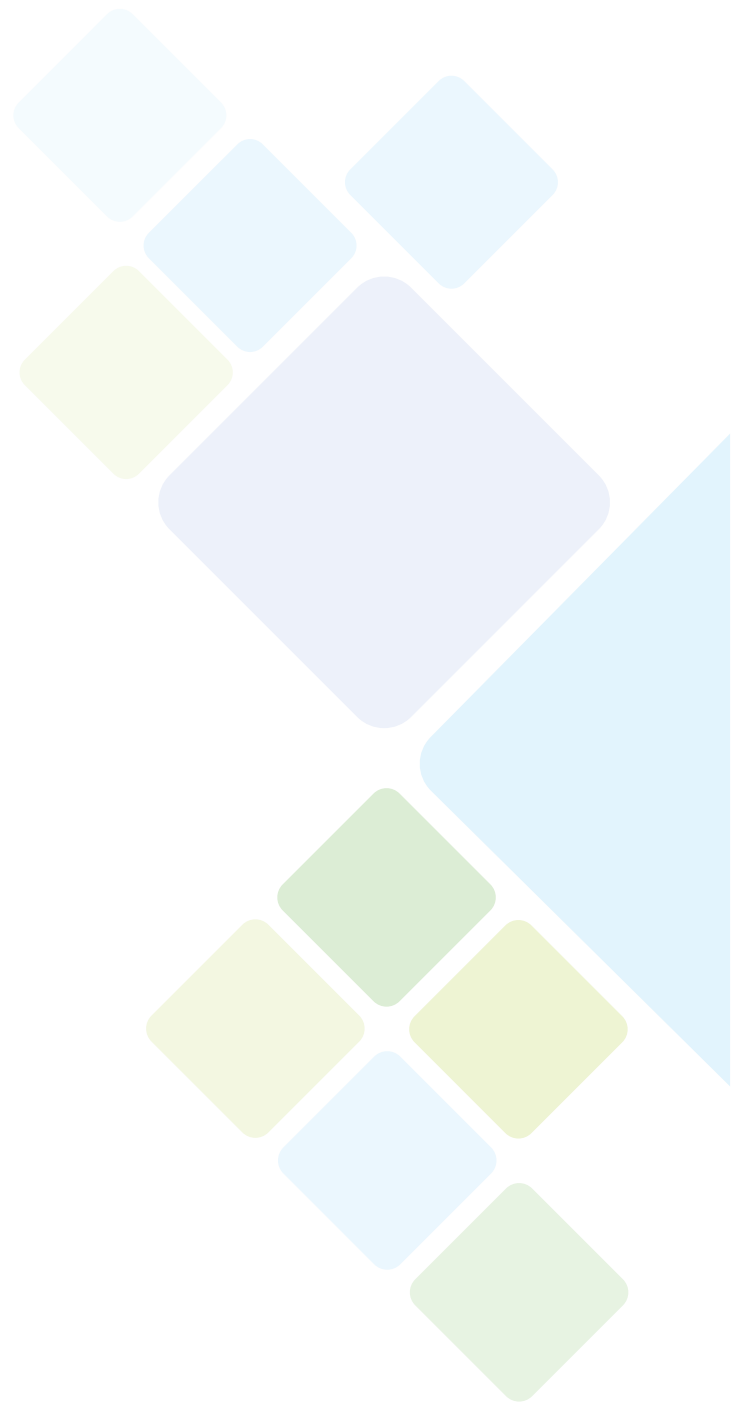
Secretary
Ministry of Health and Family Welfare
Government of the People's Republic of Bangladesh

I am very pleased to know that Bangladesh Society of Medicine have completed the National Survey on NCD Risk Factors successfully under guidance of the Directorate General of Health Services.

NCDs are causing serious harms to the society both in terms of health and economy. For effective control and prevention of NCDs, periodic prevalence data are required. I am sure that this report will provide us valuable information in this regard. I sincerely acknowledge the technical support provided by the World Health Organization for the survey.

I believe that substantial capacity among the professionals has been developed through this survey which will be helpful for doing further survey at national level.

Md. Humayun Kabir





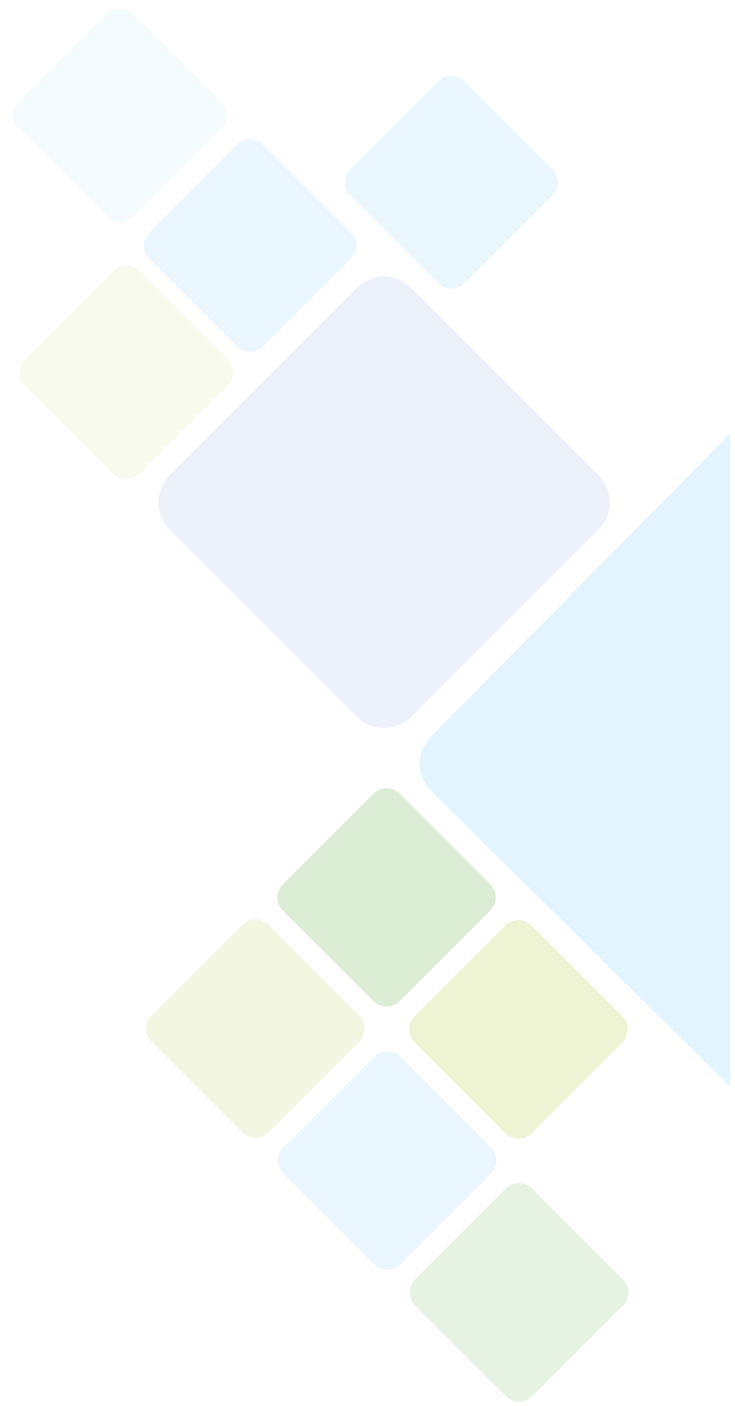
**Director General of Health Services
Government of the People's Republic of Bangladesh**

It gives me an immense pleasure to know that Bangladesh Society of Medicine has completed the National Survey on NCD Risk Factors maintaining the requisite quality. I thank the research team for successful completion of the survey.

Non-communicable diseases are the major health problem in developed countries. Nowadays it is becoming the leading cause of morbidity and mortality in developing countries also. I am sure the data from the National Survey on NCD Risk Factors will help us designing appropriate intervention programme for specific target groups.

I thank the World Health Organization for their technical support. I am happy to learn that substantial capacity building for doing large scale survey by using electronic data collection system has been done through this survey. This will take the present government's commitment for a digital Bangladesh a step ahead. I am grateful to Ministry of Health and Family welfare for providing leadership.

Professor Dr Khondhaker Md. Shefyetullah





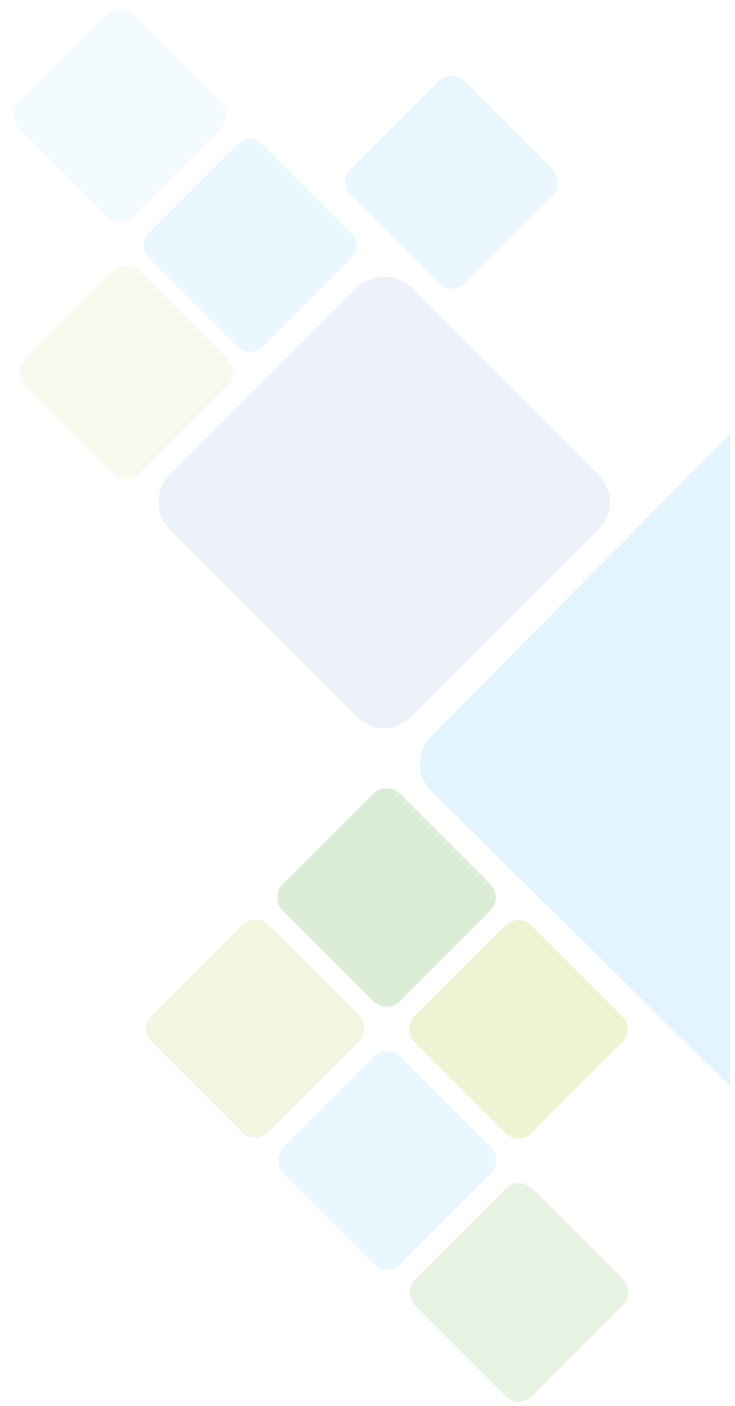
Non-communicable diseases (NCDs) are major causes of preventable deaths and disabilities. The National Survey on NCD Risk Factors provides information on the prevalence of important risk factors comparable across countries using standardized method.

I am pleased to see that National Survey on NCD Risk Factor in Bangladesh 2010 was completed successfully in spite of various limitations. I commend the Ministry of Health and Family Welfare for their leadership in conducting the survey. The Bangladesh Society of Medicine, the main implementing agency for the survey, did an excellent job using electronic data capture and transfer mechanism.

I am confident that this report will be useful in designing and implementing effective NCD control policies and programmes in Bangladesh.

Dr Arun Bhadra Thapa

Acting WHO Representative to Bangladesh





Bangladesh Society of Medicine

**From the Desk of President
Bangladesh Society of Medicine**

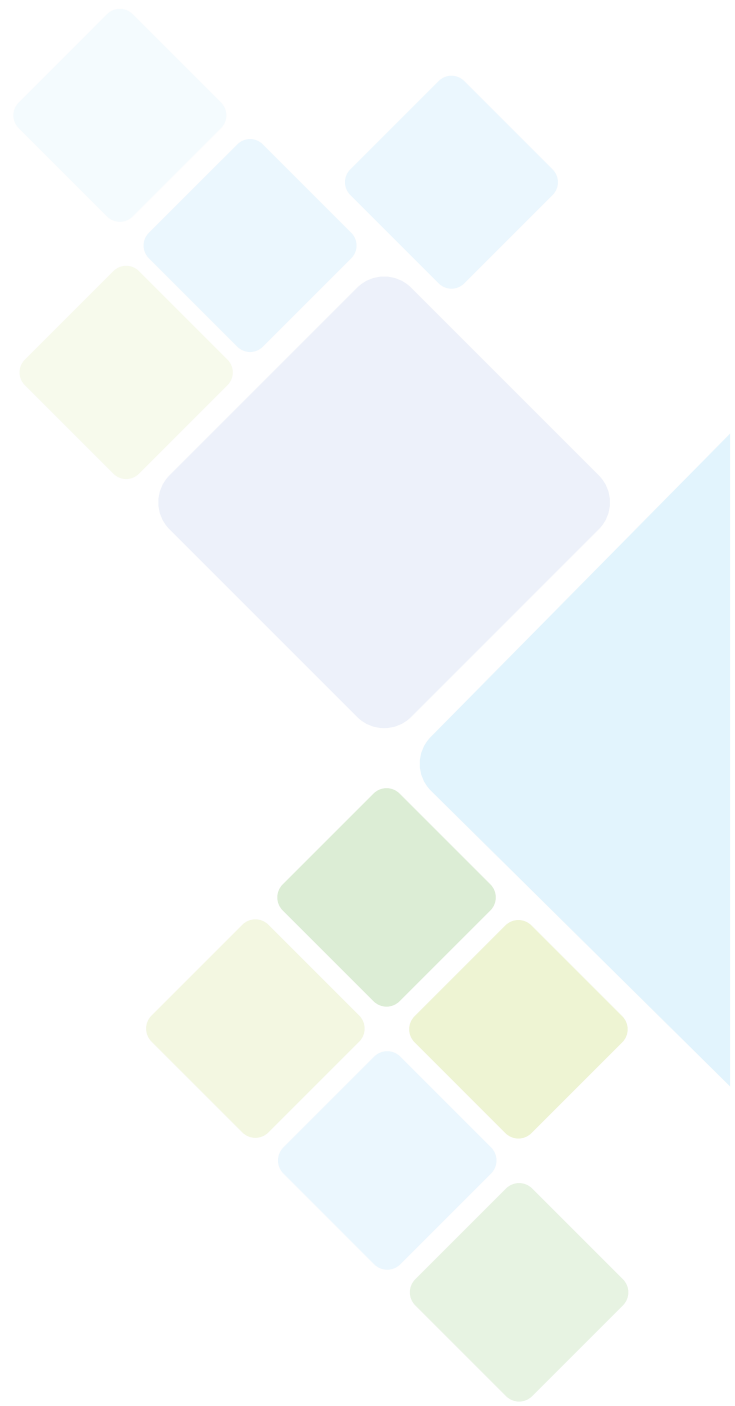
Bangladesh Society of Medicine (BSM) is the platform for the Internists working all over Bangladesh. This is the first time that the Internist under the banner of Bangladesh Society of Medicine has undertaken a task of doing a nationwide survey of NCD risk factors following the WHO STEPS strategy. I must congratulate the members of the Society, particularly those who have in spite of their routine clinical job, worked hard, spent time and ultimately could successfully complete the task. I believe through this survey BSM has developed capacity and has gathered the experience of using electronic machine for survey. Experience gained through this survey can be utilized for doing other surveys in future. After successful completion of this survey, now BSM can announce that they are capable of doing national level surveys.

In this connection I like to thank those, in particular WHO, who from the very beginning of the study had placed faith on BSM for getting quality data. I think BSM has proved that those who kept faith on us were not incorrect.

I must admire the Directorate General of Health Services for their unconditional support for our researchers. Finally I on behalf of BSM must acknowledge with gratitude the contribution of all the researchers, doctors, field workers, data collectors, data analyst and the people who responded to the survey.

I hope that BSM will continue to contribute to the field of research in a much broader spectrum and in a much better way.

Professor M A Jalil Chowdhury



STEERING COMMITTEE AND INVESTIGATORS

Steering Committee

1. Professor M A Kashem Khandaker, Department of Medicine, Dhaka Medical College
2. Professor M A Faiz, Department of Medicine, Sir Salimullah Medical College
3. Professor F M Siddiqui, Department of Medicine, Dhaka Medical College
4. Professor Emran Bin Yunus, Department of Nephrology, Chittagong Medical College
5. Professor Kazi Tariqul Islam, Department of Medicine, Dhaka Medical College
6. Professor Khan Abul Kalam Azad, Department of Medicine, Dhaka Medical College
7. Associate Professor Billal Alam, Department of Medicine, Dhaka Medical College

Investigators

Principal Investigator:

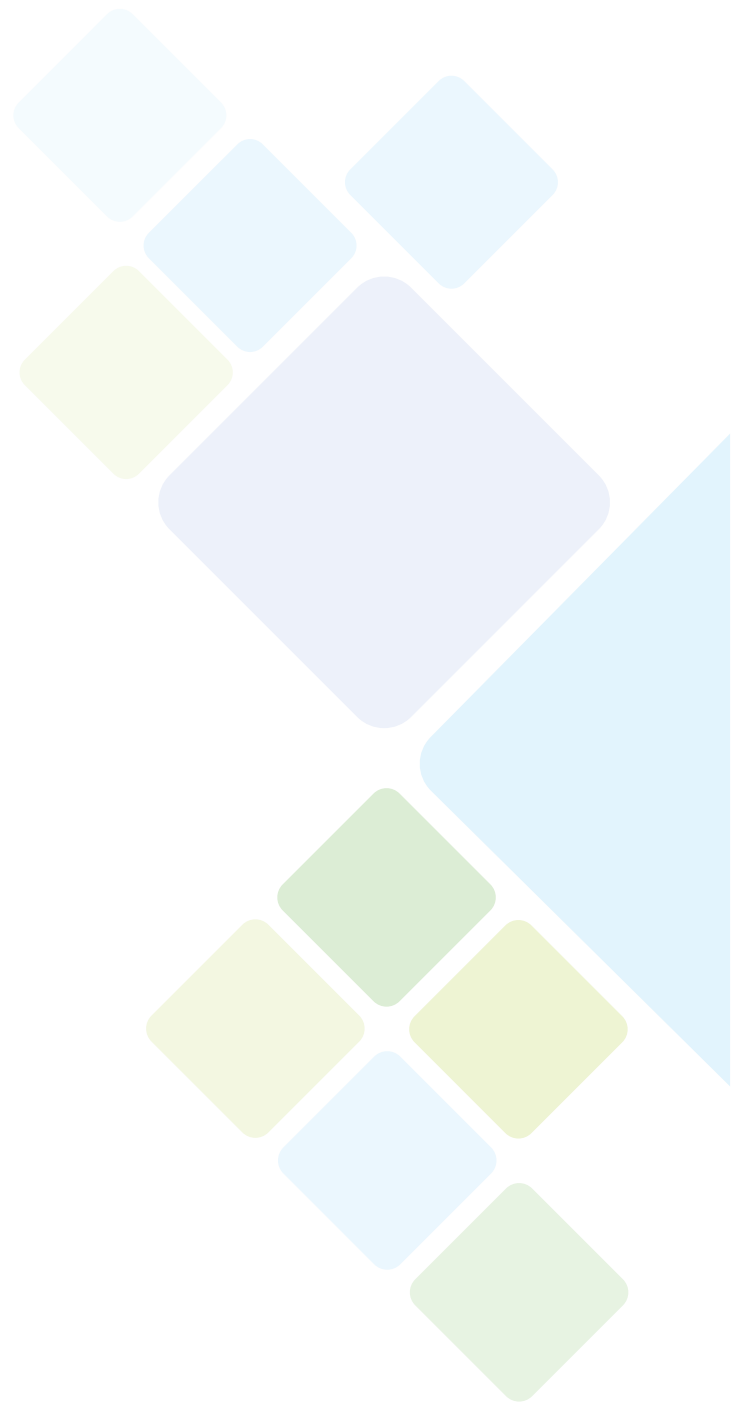
Professor Md. Mujibur Rahman, Department of Medicine, Shaheed Suhrawardy Medical College

Co-Principal Investigators:

1. Professor Md. Abdul Jalil Chowdhury, Department of Medicine, Bangabandhu Sheikh Mujib Medical University (BSMMU)
2. Professor H A M Nazmul Ahasan, Department of Medicine, Dhaka Medical College

Investigators:

1. Professor Md. Ridwanur Rahman, Shaheed Suhrawardy Medical College (Dhaka Division)
2. Professor Md. Mahtabuddin Hasan, Chittagong Medical College (Chittagong Division)
3. Professor Syed Rezaul Karim, Khulna Medical College (Khulna Division)
4. Professor Md. Zakir Hossain, Rangpur Medical College (Rajshahi Division)
5. Assistant Professor Rubina Yasmin, Dhaka Medical College (Sylhet Division)
6. Associate Professor Humayun Kabir, Sher-e-Bangla Medical College (Barisal Division)
7. Associate Professor Md. Shafiqul Islam, National Institute of Preventive and Social Medicine (NIPSOM)



CONTRIBUTORS TO THE REPORT

1. M Mostafa Zaman, World Health Organization
2. Md. Mujibur Rahman, Shaheed Suhrawardy Medical College
3. Md. Abdul Jalil Chowdhury, Bangabandhu Sheikh Mujib Medical University
4. Md. Ridwanur Rahman, Shaheed Suhrawardy Medical College
5. Mahfuzur Rahman Bhuiyan, Senior Research Physician, National Survey on NCD Risk Factors
6. Md. Nazmul Karim, World Health Organization
7. Md. Shafiqul Islam, National Institute of Preventive and Social Medicine
8. S M Mahbubus Sobhan, Research Physician, National Survey on NCD Risk Factors

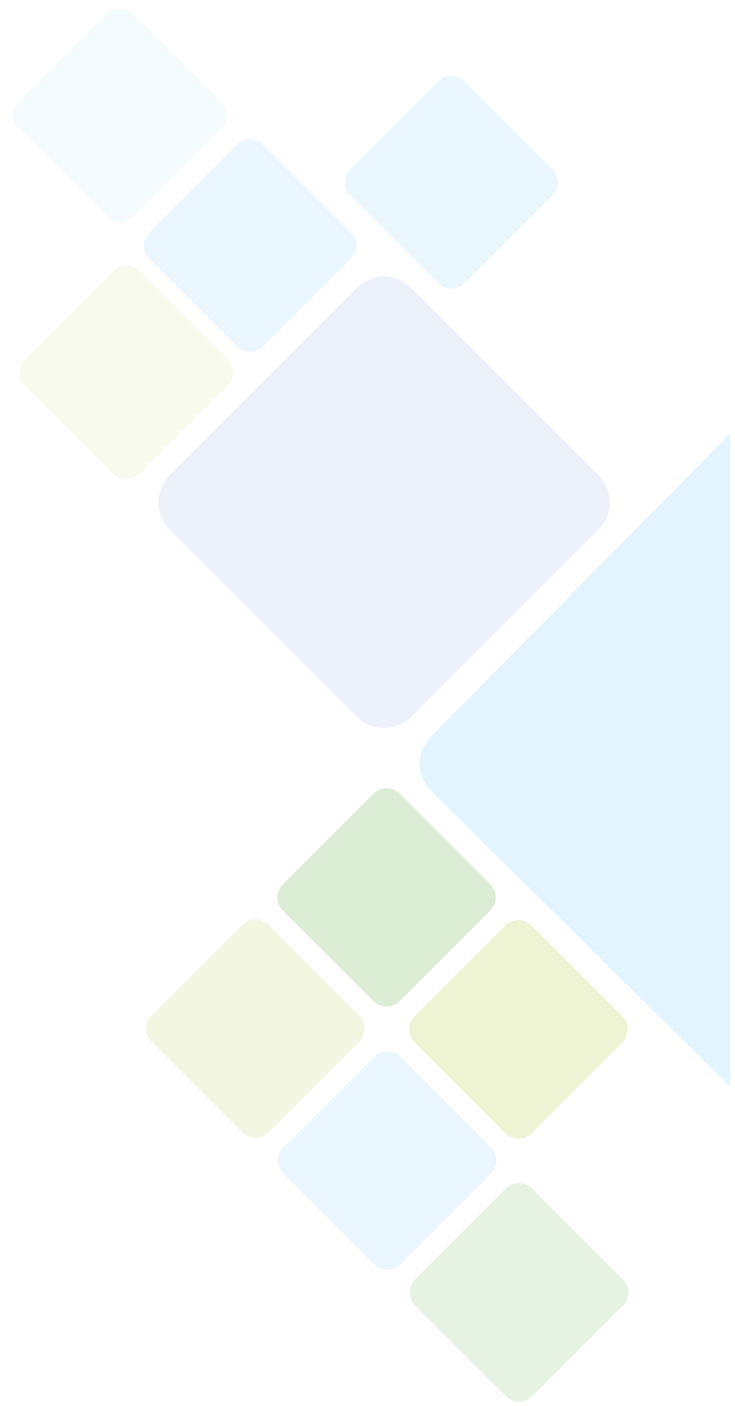
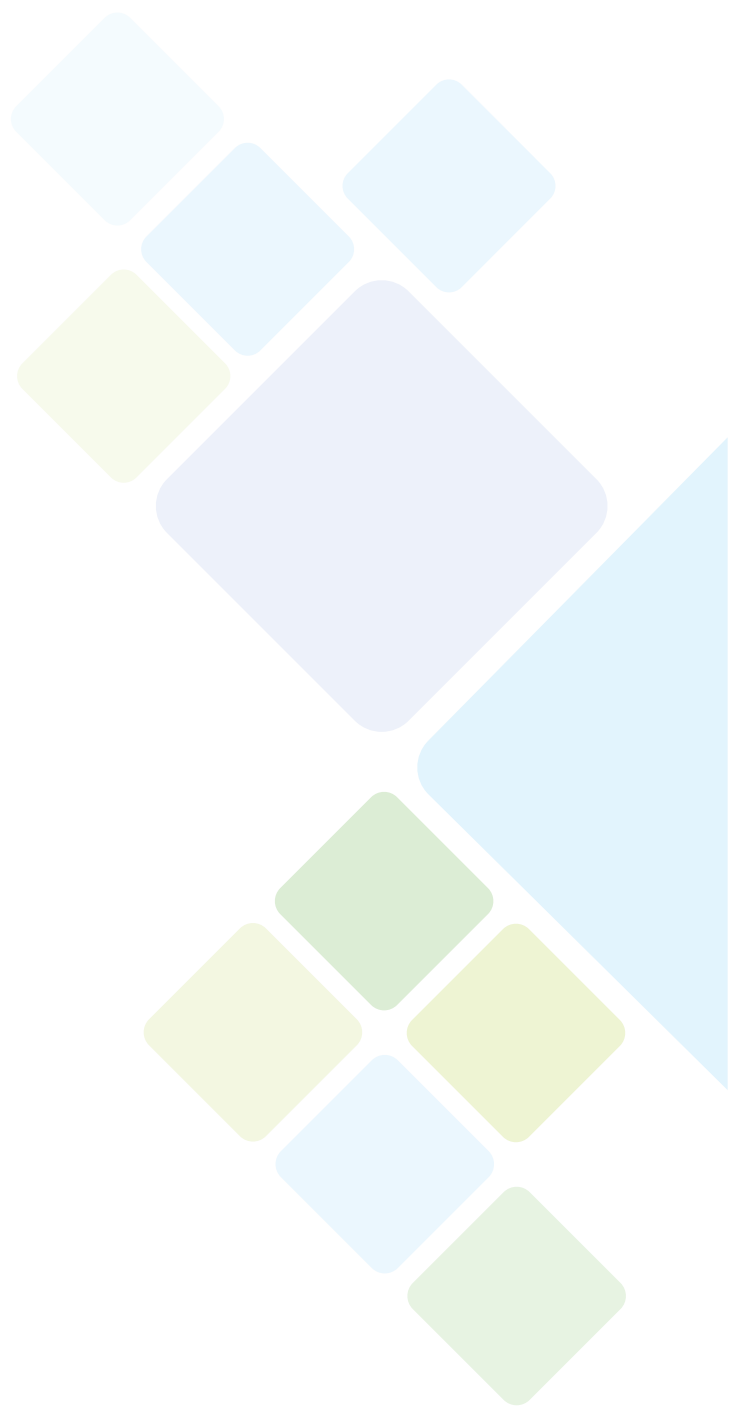


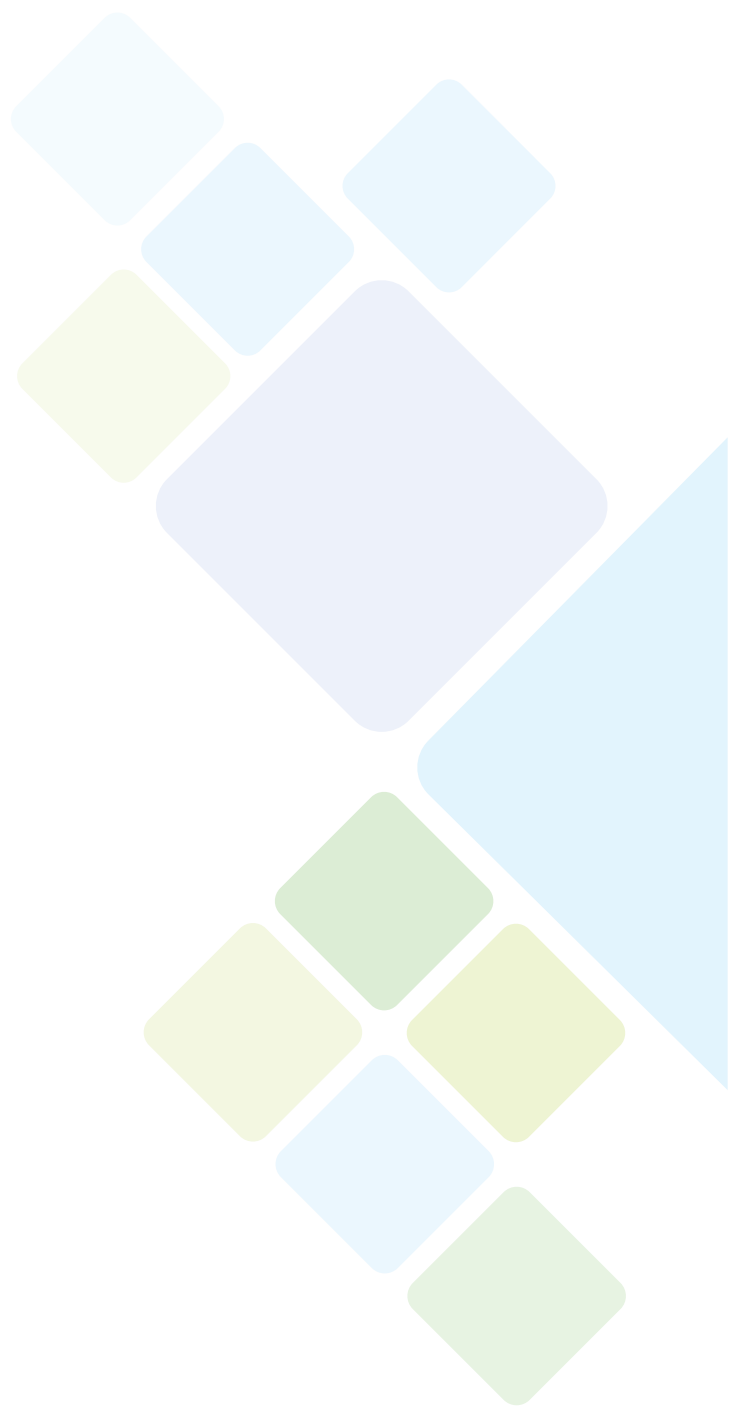
TABLE OF CONTENTS

List of acronyms	XXIII
List of text boxes	XXV
List of figures	XXVII
List of tables	XXIX
Preface	XXXIII
Executive summary	XXXV
1. Introduction	01
2. Objectives	03
3. Methods	05
4. Results	17
4.1 Socioeconomic background	17
4.2 Tobacco	17
4.3 Diet	19
4.4 Physical activity	20
4.5 Alcohol consumption	21
4.6 Obesity	22
4.7 Blood pressure	23
4.8 Diabetes mellitus	24
4.9 Socio-economic gradients and clustering of risk factors	24
5. Discussion	27
6. Policy recommendations	35
7. Acknowledgements	37
8. References	39
9. Appendices	
Appendix A: List of project staff	43
Appendix B: Survey questionnaire: English and Bangla	45
Appendix C: Showcards	81
Appendix D: Glossary of terms	87
Appendix E: Tables	91



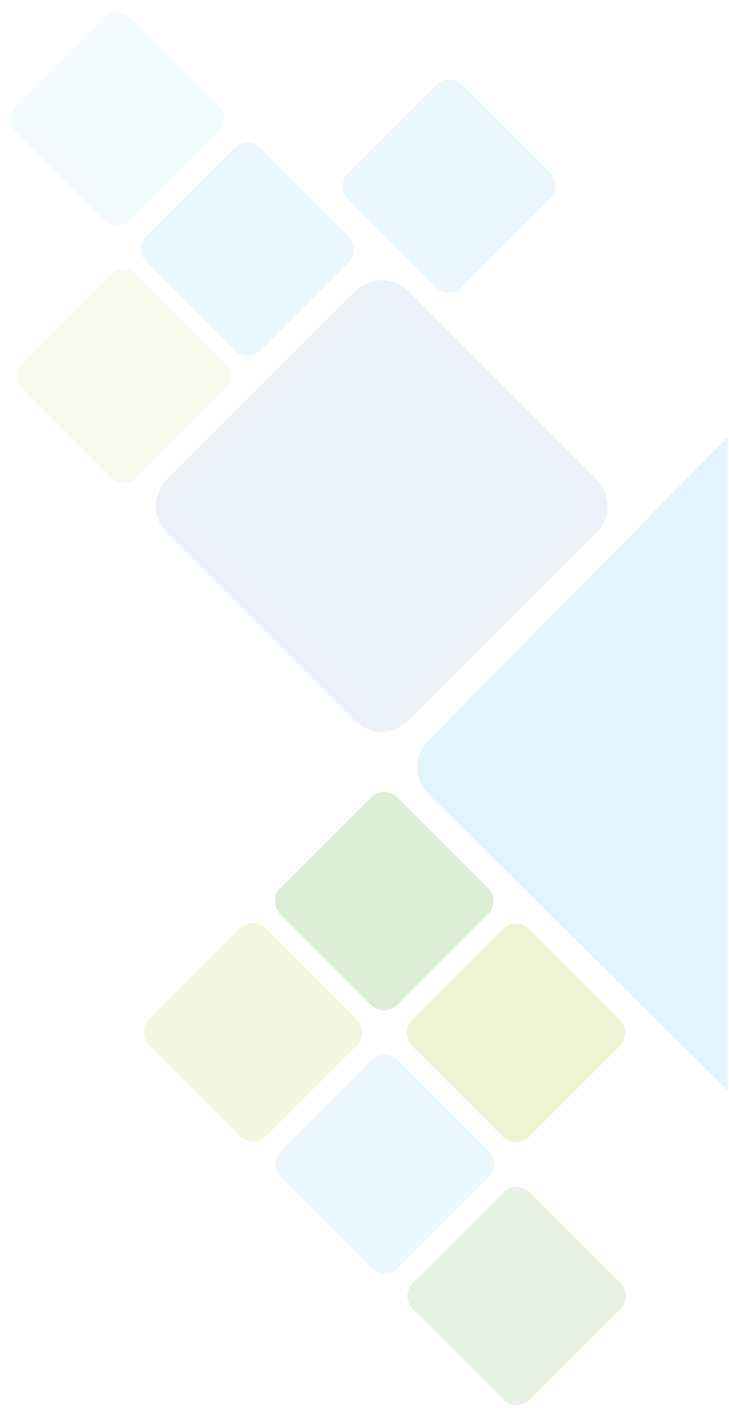
LIST OF ACRONYMS

BBS	Bangladesh Bureau of Statistics
BMI	Body mass index
BP	Blood pressure
BSM	Bangladesh Society of Medicine
COPD	Chronic obstructive pulmonary disease
CVD	Cardiovascular disease
DBP	Diastolic blood pressure
DM	Diabetes mellitus
GATS	Global Adult Tobacco Survey
MET	Metabolic equivalent
NCD	Non-communicable disease
PDA	Personal digital assistant
PSU	Primary sampling unit
SBP	Systolic blood pressure
SHS	Second hand smoke
SSU	Secondary sampling unit
FCTC	Framework Convention on Tobacco Control
STEPS	STEPwise Surveillance
WHO	World Health Organization



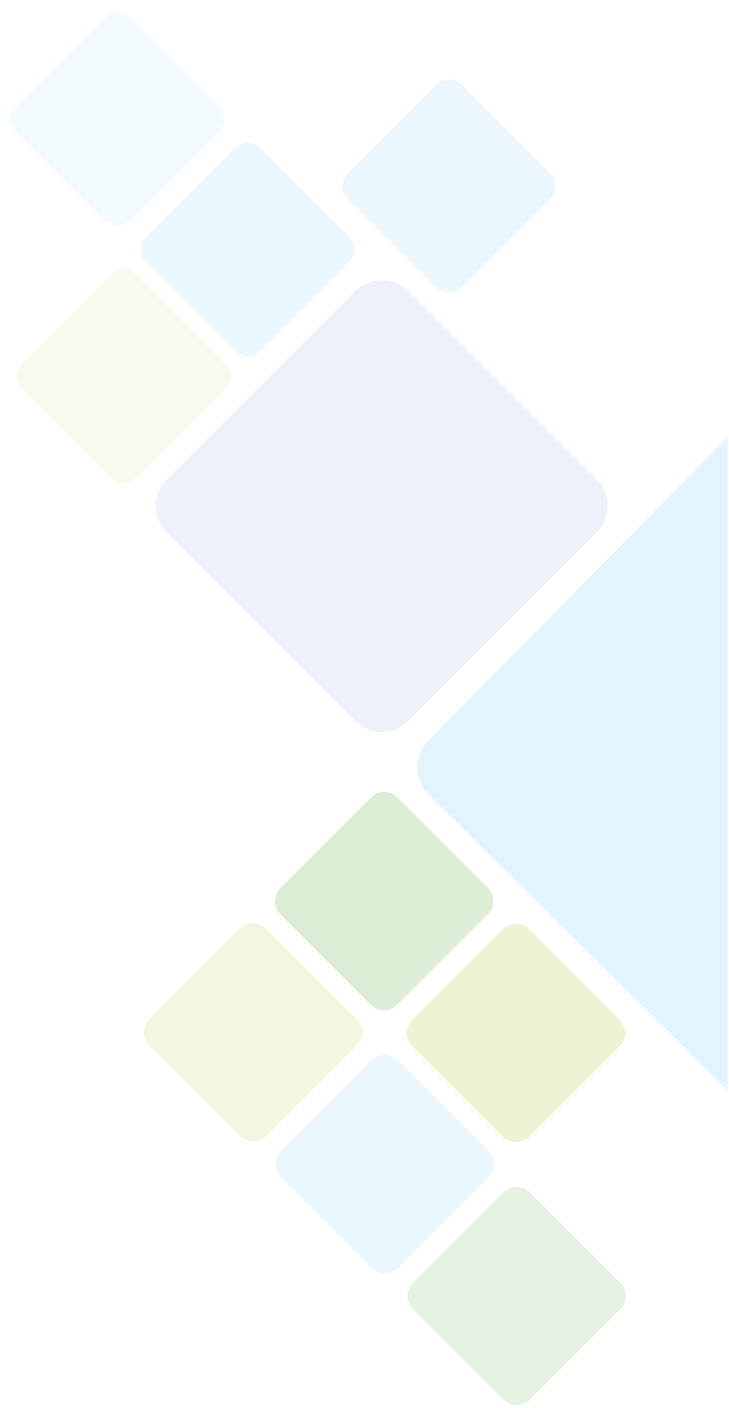
LIST OF TEXT BOXES

Box 1: Selection of primary sampling units (PSUs)	06
Box 2: Stages of sample selection and their techniques	06
Box 3: Summary results for overall response proportions	09
Box 4: Agreement between measurements by field investigators and quality control physicians	14
Box 5: Number of people (in millions) with selected risk factors among the adult population aged 25 years or above	27
Box 6: Comparison of GATS and NCD risk factor survey findings on current tobacco use for those aged 25 years or above	27



LIST OF FIGURES

Figure 1:	Study locations	08
Figure 2:	Sample map of a primary sampling unit	08
Figure 3:	Sample map of a secondary sampling unit	08
Figure 4:	Flowchart of digital data collection and transfer	08
Figure 5:	Prevalence of current tobacco use, smoking or smokeless forms, in rural and urban areas	18
Figure 6:	Prevalence of inadequate intake of fruit and/or vegetables (<5 servings/day) in rural and urban areas	19
Figure 7:	Prevalence of low physical activity (<600 MET - minutes) in rural and urban areas	20
Figure 8:	Percentage of people who drank at least one sip of alcoholic drink in past 30 days	21
Figure 9:	Percentage of people having BMI 25 (kg/m ²) or above in urban and rural areas	22
Figure 10:	Percentage of respondents with increased waist circumference (men ≥94 cm, women ≥80 cm) in urban and rural areas	22
Figure 11:	Prevalence of hypertension (blood pressure ≥140/90 mmHg or drug treatment) in urban and rural areas	23
Figure 12:	Prevalence of self reported (documented) diabetes in urban and rural areas	24
Figure 13:	Risk factor clustering across wealth quartiles	25
Figure 14:	Distribution of respondents with three or more risk factors in rural and urban areas	25



LIST OF TABLES

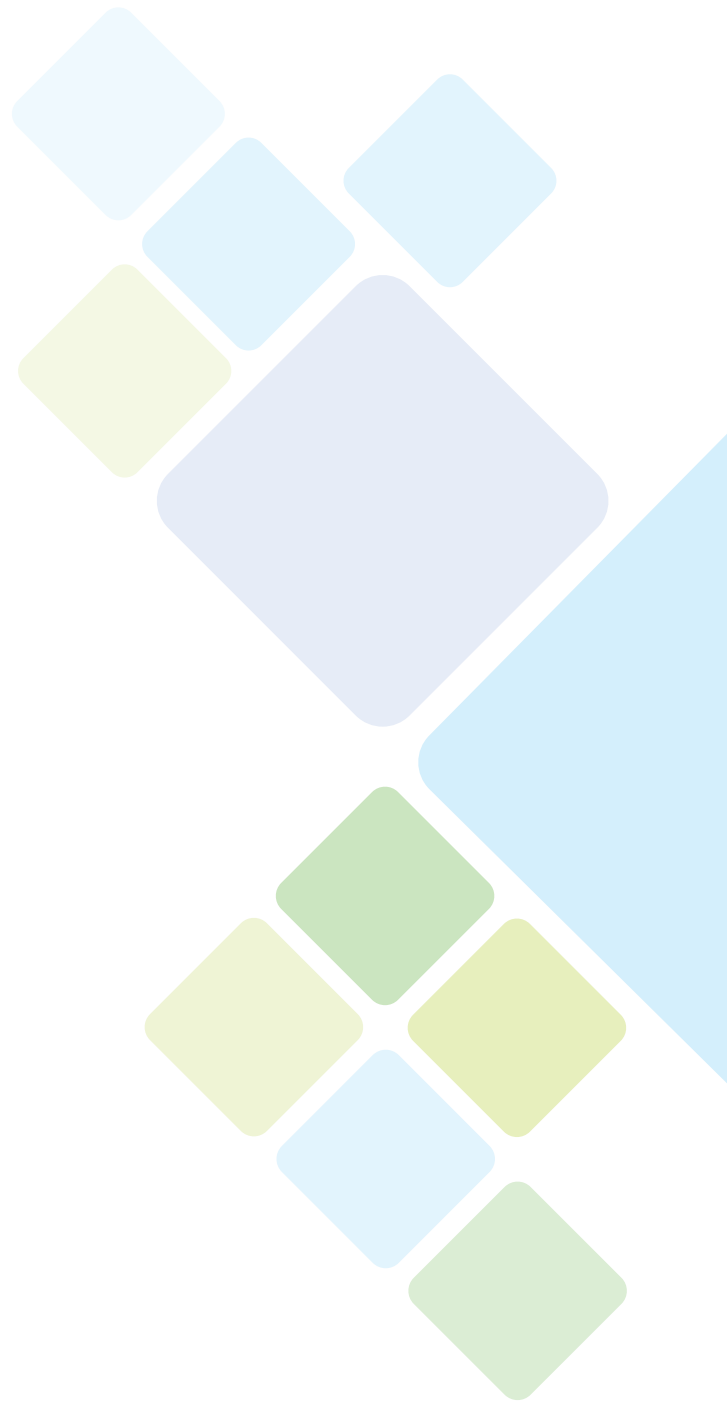
Table 1.1:	Distribution of the respondents by age, residence and sex	91
Table 1.2:	Level of education of respondents	92
Table 1.3:	Distribution of the respondents by principal occupation	93
Table 1.4:	Distribution of the respondents by wealth indices	94
Table 2.1:	Current smoking status (daily and non-daily) of the respondents	95
Table 2.2:	Age of initiation and duration of smoking (in years) of the daily smokers	96
Table 2.3:	Distribution of daily smokers by use of smoking tobacco products	97
Table 2.4:	Frequency of smoking per day of the daily smokers.	98
Table 2.5:	Distribution of the respondents by ex-daily smoking status	99
Table 2.6:	Prevalence of current and ex-use of smokeless tobacco among all respondents	100
Table 2.7:	Frequency of use of various tobacco products by daily smokeless tobacco users	101
Table 2.8:	Distribution of daily smokeless tobacco users by use of smokeless tobacco products	102
Table 2.9:	Distribution of the tobacco users by combination of smoking and smokeless tobacco use	103
Table 2.10:	Exposure to secondhand tobacco smoke of smokers and non smokers on one or more days in the past 7 days	104
Table 3.1:	Mean number of days and servings of fruit and vegetables consumption	105
Table 3.2:	Fruit consumption of the respondents on an average day (in servings)	106
Table 3.3:	Vegetables consumption of the respondents on an average day (in servings)	107
Table 3.4:	Consumption of fruit and/or vegetables on an average day (in servings)	108
Table 4.1:	Time (in minutes) spent in work, transport and leisure-related physical activity on an average day	109
Table 4.2:	Prevalence of no work, transport and leisure related physical activity	110

LIST OF TABLES (Cont.)

Table 4.3:	Proportion of work, transport and leisure activity contributing to total activity	111
Table 4.4:	Prevalence of non-engagement into vigorous or at least moderate physical activity irrespective of duration	112
Table 4.5:	Time (in minutes) spent in vigorous, moderate and sedentary activity on an average day	113
Table 4.6:	Distribution of the respondents by total (combination of work, transportation and leisure) physical activity categories	114
Table 5.1:	Distribution of the respondents by alcohol consumption status	115
Table 5.2:	Frequency of drinking among those who drank alcohol in the past 12 months	116
Table 5.3:	Number of occasions with at least one drink consumed on a drinking occasion in the past 30 days by current drinkers	117
Table 5.4:	Number of standard drinks consumed on a drinking occasion in the past 30 days by current drinkers	118
Table 5.5:	Prevalence of heavy episodic (binge) drinking in the past 30 days among current drinkers	119
Table 6.1:	Height (in cm), weight (in kg) and body mass index (in kg/m ²) of the respondents ..	120
Table 6.2:	Body mass index (BMI) categories of respondents	121
Table 6.3:	Mean waist circumference (in cm) of the respondents	122
Table 6.4:	Distribution of the respondents by waist circumference categories	123
Table 7.1:	Measurement of blood pressure and diagnosis of hypertension among respondents	124
Table 7.2:	Prevalence of use of blood pressure drugs prescribed by doctor or health worker among the hypertensive respondents	125
Table 7.3:	Distribution of the hypertensive respondents who received advice from a doctor or health worker for lifestyle modification	126

LIST OF TABLES (Cont.)

Table 7.4:	Hypertensives who have seen traditional healers for advice/treatment for raised blood pressure	127
Table 7.5:	Mean blood pressure (mmHg) among all respondents	128
Table 7.6:	Prevalence of high blood pressure among respondents at measurement during survey	129
Table 7.7:	Status of treatment and blood pressure control among previously diagnosed hypertensive respondents	130
Table 8.1:	Distribution of the respondents by measurement of blood glucose and diagnosis of diabetes	131
Table 8.2:	Diabetic respondents who are currently taking insulin or oral antidiabetic drugs	132
Table 8.3:	Diabetic respondents who received advice for lifestyle modification from a doctor or health worker	133
Table 8.4:	Distribution of the diabetic respondents who sought advice or treatment from traditional healers for diabetes	134
Table 9:	Distribution of the respondents by the number of risk factors	135



PREFACE

The STEPS survey of non-communicable disease (NCD) is the first ever population based national survey in Bangladesh. It is one of the pioneering STEPS survey in the world to be done using digital technology; Bangladesh Society of Medicine is a proud part of this history.

I gratefully admire and acknowledge the attitude of Directorate General of Health Services and Ministry of Health and Family Welfare towards us for their whole hearted support. I also acknowledge and sincerely express my gratitude to the WHO, for its technical support to the investigators team for smooth completion of the project. Specially I want to mention one name, Dr. M Mostafa Zaman, without active support of him and his team it would not be possible to complete the task in time with such a high quality.

I must convey my gratitude to the investigators team, research physicians, field interviewers, the IT specialists and above all the participants who spent their valuable time to provide data. I would like to extend my gratitude to the steering committee and other members of BSM for their whole hearted support and contributions to the survey. I also acknowledge and express my gratitude to the Principal and Director of Shaheed Suhrawardy Medical College and Hospital for their support and providing us with infrastructural facilities in their premises.

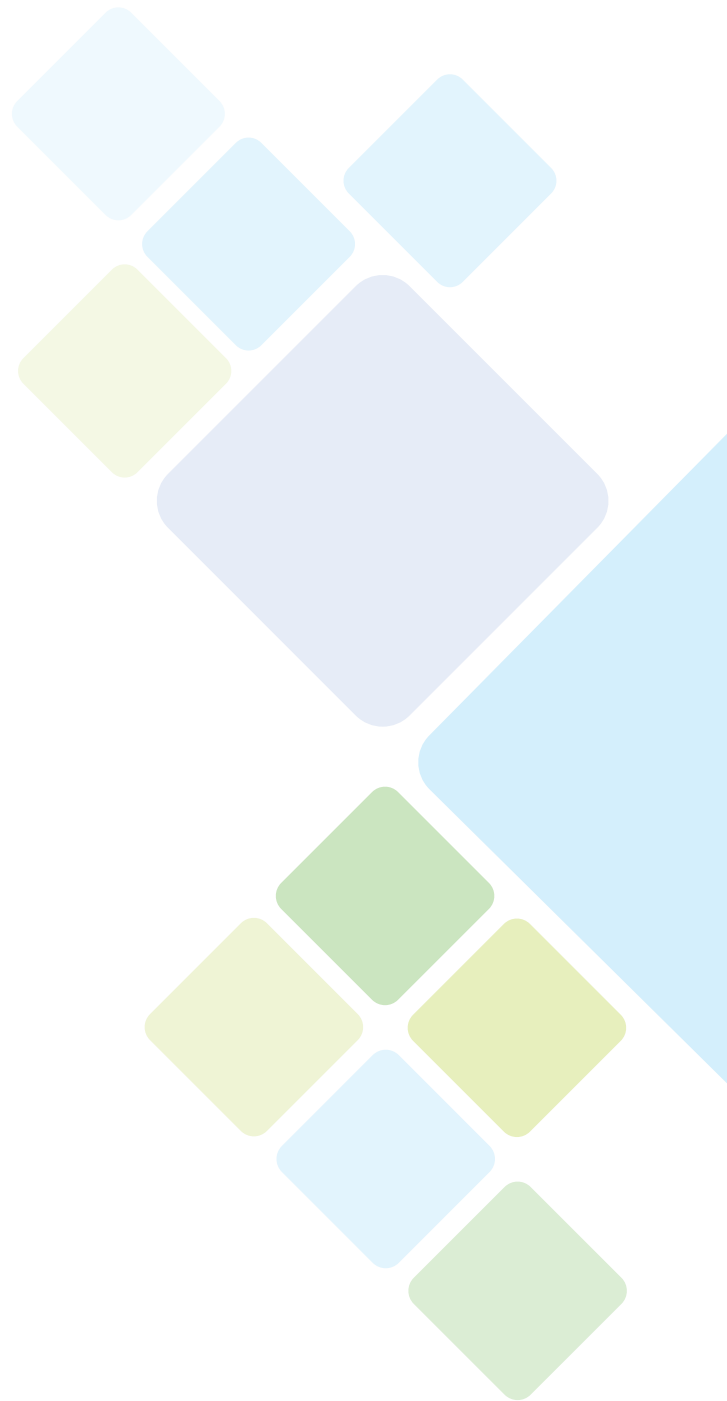
Because this survey has given nationally representative data on NCD risk factors, this report will help formulating the prevention strategy on NCDs in Bangladesh.



Professor Md. Mujibur Rahman

Department of Medicine, ShSMC

Secretary for Scientific Affairs, BSM & Principal Investigator



EXECUTIVE SUMMARY

The emerging pandemic of non-communicable diseases (NCDs) creates a new frontier for health professionals globally. Most of the forecasted increase in NCD prevalence and death rates can be accounted for by emerging NCD epidemics in developing countries. Bangladesh has been facing a dual burden of existing infectious diseases and escalating rise of NCDs like diabetes, heart disease, stroke, cancer, chronic respiratory disease, etc. For getting prepared for the challenge of these diseases, information regarding their distribution and determinants is indispensable. Their control could well be addressed through their common risk factors. Current nationwide survey was aimed at determining the distribution of NCD risk factors in Bangladeshi adult population.

METHODS

This national survey on NCD risk factors is a cross-sectional study and was carried out as part of the global endeavour to address major NCD risk factors. The survey was conducted from November 2009 to April 2010 and involved collection of data from a representative sample of men and women aged 25 years or above residing everywhere in Bangladesh.

The study adopted a multistage, geographically clustered, probability-based sampling approach and 2001 census sampling frame, the latest census in the country, was used. The primary sampling units (PSUs) considered for rural stratum were *mauza*, and for the urban stratum, PSUs were based on *mahalla*. One enumeration area from each of 200 *mauza* and 200 *mahalla* were identified and marked as secondary sampling unit (SSU). The ultimate sampling units were the household and one individual (equal number of men and women) residing in the selected household. Sampling of eligible individuals was done from a sample of households with one individual randomly selected per household. Each selected household was randomly assigned as a men or women household. Among the 400 PSUs data could be made available for 9 947 households. Out of them 9 275 respondents (93.3%) participated. Survey used a standardized questionnaire and physical measurements. The questionnaire for the survey was developed with minor adaptation of WHO STEPwise Surveillance (STEPS) questionnaire. All the core variables along with some expanded variables from step 1 were incorporated. From step 2 physical measurements (height, weight, waist circumference and blood pressure) were included. For each interviewee one household and one individual questionnaire were administered.

RESULTS AND COMMENTS

1. Population characteristics

Of 9 275 respondents of the survey 4 312 were men and 4 963 were women. Mean age was 42.4 years. They had 3 years of median schooling (5 years in men and 3 years in women). Interestingly (and encouragingly) equal percentage (11%) of men and women completed primary education. In men farmers made up 22.8%, 19.2% were small businessmen, 12% were day labourer and 11.8% non-government employee. In women, housewives made up 83.4% of the surveyed population.

2. Tobacco use

Overall prevalence of smoking was 26.2% (54.8% in men and 1.3% in women). The picture was similar in rural and urban residents. Twenty five per cent were daily smoker. On an average people started

smoking at 18.4 years of age, however around 34.6% respondents initiated smoking at or before the age of 15 years. Most smokers (67.7%) used manufactured cigarette. Overall consumption of smokeless tobacco was 31.7%. Its use in women (33.6%) was more than in men (29.4%). Consumption was higher in older age groups and this trend was more prominent in women. Smokeless tobacco use was slightly more in rural area (35.1%) compared to urban area (30.8%). Tobacco in combination of smoking and smokeless or in isolation was being used by half of the adult population (51%), man being the most users (70%) compared to women (34.4%). Moreover 42% non-smokers were exposed to second hand smoke at home (36%) or workplace (21%).

3. Fruit and vegetables intake

Survey population took fruit on an average 1.8 days a week. Frequency of vegetables consumption was particularly high in Bangladeshi population. They consumed vegetables in around 6.1 days a week (men 5.7 days and women 6.4 days). However in combination of fruit and/or vegetables it became 4 days a week. Quantity of intake was measured by servings of fruit (say one serving equal to a medium size banana or apple or equivalents) and vegetables (one cup for green leafy vegetables or half a cup for cooked vegetables). In spite of a satisfactory frequency, neither fruit nor vegetables consumption was adequate in quantity. The overall daily per capita consumption of fruit was 1.7 servings and of vegetables 2.3 servings against their minimum daily total requirement of 5 servings. Considering this as minimum recommended amount, 95.7% did not consume adequate fruit or vegetables on an average day.

4. Physical activity

Physical activity related to work, transportation and leisure time was assessed in terms of minutes that caused them breathless or feeling of palpitation. However continuous activity of at least ten minutes was taken into account to add up to the total minutes of activity for the day. Then the total duration was converted into metabolic equivalents (MET minutes/week). Based on MET minutes/week, 27% of the subjects fell into low physical activity category (<600), 20.2% fell into moderate physical activity category (600 – 3000) and 52.8% fell into high physical activity category (>3000). Women were generally less active but most of their METs were contributed by moderate activities irrespective of their area of residence. Work contributed more than half of the total activity (56%), around 31% was contributed by transport related activity and around 13% were contributed by the leisure time physical activity. One third (33%) of them usually do not engage into even moderate activity (such as brisk walking, household chores) and 62% people usually did not engage into any vigorous physical activities such as running, cycling, swimming, climbing, lifting heavy weights etc. High physical activity was more in rural men than their urban counterparts.

5. Alcohol consumption

Ninety four per cent adult in Bangladesh were lifetime abstainer of alcohol. Only 0.9% respondent consumed alcohol, even a single sip, in past 30 days. However overall 66.7% of the current alcohol consumers were binge drinkers (≥ 5 standard drink in men and ≥ 4 standard drinks in women) and almost all of them were men. On an average current drinkers went binge in 4.2 occasions in past 30 days.

6. Obesity

Based on body mass index (weight in Kg divided by height in meter squared) one fourth (25%) of the population were underweight ($BMI < 18.5 \text{ kg/m}^2$), 57% were normal weight and 18% were overweight

(BMI ≥ 25.0 kg/m²). Proportion of overweight in women (21.6%) exceeded the proportion of those in men (13%). Waist circumference is a measure of central obesity. Eight per cent men and 33.7% women (21.7% sexes combined) had increased waist circumference (≥ 94 cm in men and ≥ 80 cm in women). Higher prevalence of both central and general obesity in women may predispose them to an increased risk of NCDs.

7. Blood pressure

One third (32.9%) of the population never measured their blood pressure. The prevalence of self-reported (documented) hypertension was 12.5% (men 10.9% and women 13.9%). Prevalence of hypertension was related to age.

Overall 14.8% of the survey population was having hypertension (blood pressure $\geq 140/90$ mmHg) excluding medication; when history of anti-hypertensive drugs was considered this figure rose to 17.9% suggesting an existence of a huge number of undiagnosed cases in the population who are potentially at more risk of ill consequences. The prevalence of hypertension is more in urban area (19.9%) than in rural area (15.9%). Among those previously reported to have hypertension, 30% were found to be normotensive at measurement and 18% were normotensive on medication, 31% were hypertensive with medication and 21% were hypertensive and they did not take any medication. This clearly reflects the need for effective hypertension control programme for the population at large.

8. Diabetes mellitus

Blood glucose measurement was not included in this study. Documented history of diabetes was sought. Around 83% of participants never measured their blood glucose. About 3.9% of the people were previously diagnosed to have diabetes (men 4.3% and women 3.6%). Among them, 21% were receiving insulin and 61% oral anti diabetic drugs.

Number of people (in millions) with selected risk factors among the adult population aged 25 year or above*			
Risk factors	Men	Women	Both sexes
Current smoking	18.5	0.4	18.9
Smokeless tobacco use	9.9	11.3	21.2
Tobacco use (any form)	23.6	11.5	35.1
Low fruit/vegetable intake ^a	32.9	31.6	64.5
Low physical activity ^b	3.5	13.9	17.4
Obesity ^c	4.4	7.3	11.6
Abdominal obesity ^d	2.7	11.3	14.0
Hypertension ^e	6.2	5.8	12.0
Diabetes mellitus (documented)	1.4	1.2	2.7
* Based on projected 2008 population ^a < 5 servings/day, ^b < 600 MET-minutes per week, ^c BMI ≥ 25 kg/m ² , ^d Waist girth: men ≥ 94 cm, women ≥ 80 cm, ^e BP $\geq 140/90$ mmHg or medication			

9. Socioeconomic gradients and clustering of risk factors

Risk factors of NCDs have a tendency of clustering. There was hardly anyone without a risk factor. About 98.7% have at least one risk factor, 77.4% had two or more risk factors and 28.3% had 3 or more

risk factors. Participants were categorized into four quartiles based on wealth indices derived from household assets. Diabetes, hypertension, low physical activity and obesity were more in rich people but tobacco use, binge drinking, low fruit and vegetables intake were more in the poor. However when presence of three or more risk factors was considered, it is the higher socioeconomic groups that bear most of the brunt.

POLICY RECOMMENDATIONS

This first ever nationally representative survey in Bangladesh provides essential information on key indicators of NCD risk factors and creates an opportunity for policy makers, programme managers, and researchers to adopt interventions. Inadequate intake of fruit and vegetables, use of tobacco, low level of physical activity (specially in women), binge drinking among current drinkers, obesity (especially abdominal), high blood pressure and diabetes mellitus are fairly common in adults. Almost all adults (98.7%) have at least one risk factor and substantial proportion of people have two or more risk factors. Based on these findings, the specific recommendations are:

1. Population based approach using primary health care system for NCD prevention is warranted. Mass awareness through campaigns and school curricula is necessary.
2. Tobacco consumption is high even after five years of having a Tobacco Control Act. Adequate enforcement of the Act is necessary. Necessary amendment of the Act is also required to close all the loop holes in the tobacco control programme.
3. Strategies to promote accessibility and availability of fruit and vegetables round the year for all people should be formulated and implemented.
4. Appropriate measures should be undertaken, with emphasis on leisure time physical activity, to promote empowering environment for physical activity.
5. A large proportion of people do not measure blood pressure or blood glucose and, hence large proportion of hypertension and diabetes remain undetected. Primary health care system should be reoriented towards early detection and treatment of these common ailments.
6. Because there is hardly any nationally representative data on NCD risk factors, national surveys on health should consider inclusion of NCD risk factors.



1. INTRODUCTION

The rapid rise of non-communicable diseases (NCDs) represents one of the major health challenges to global development. NCDs were estimated to have contributed to almost 60% of deaths in the world and among them about 80% occur in the developing countries.¹ NCDs are already of major importance in developed countries and are rapidly becoming a major public health threat in the developing world. These diseases constituted 43% of the global burden of disease in 1999. Based on current trends, by 2020 they will account for 73% of deaths and 60% of the disease burden in the developing countries.²

The underlying cause of NCD epidemic is the increase in lifestyle related risk factors resulting from social and economic changes. In many countries the increasing impact of globalization has given momentum to this process.² Currently neighbouring India is also experiencing an epidemic of NCDs attributed to lifestyle changes resulting from urbanization.³

WHO report in 2002 identified unhealthy diet, physical inactivity, tobacco use, harmful use of alcohol, overweight, raised blood pressure, raised total cholesterol levels and raised blood glucose as the most prevalent NCD risk factors among the world population.⁴ Among the modifiable risk factors unhealthy diet, physical inactivity, alcohol and tobacco use are categorized into primary risk factors and overweight, raised blood pressure, raised total cholesterol levels and raised blood glucose are categorized as intermediate risk factors. Most population has been experiencing an increased prevalence of both primary and intermediate risk factors. Hypertension alone is the main risk factor for developing ischemic heart disease, stroke, heart and renal failures and peripheral vascular diseases.⁴

NCD associated risk factors are largely modifiable. Therefore, by identifying and preventing the risk factors, NCDs such as coronary heart disease and stroke would be prevented by 80%, cancer by 40% and type 2 diabetes by 90%. Projections by experts estimate that an annual reduction of chronic disease death rates by 2% in the next 10 years will account for 36 million lives be saved.⁵ In addition, one third of all cancers could be prevented by eating healthy food, maintaining normal weight and being physically active throughout the lifespan.⁶

Like many other countries, Bangladesh has been experiencing an epidemiological transition from communicable disease to NCDs.⁷ Among the NCDs, cardiovascular diseases (CVD), diabetes, chronic obstructive pulmonary disease (COPD) and cancers are most prevalent. With economic development and increased level of control and treatment of infectious diseases NCDs are becoming a major health problem in Bangladesh.⁸ However, representative national level data on NCDs and their risk factors are still inadequate in Bangladesh. Major established risk factors explain approximately 75% of the occurrence of coronary heart disease within populations.⁹ A few studies have so far reported prevalence of individual risk factors such as hypertension, smoking and dietary habit, from urban and rural populations.^{10,11} However only few of them are done recently,^{12,13} and showed a significantly increasing gradient in NCD prevalence.

To respond to the increased burden of NCDs, WHO put due emphasis on gathering information on NCDs and their risk factors, as they are necessary for designing prevention and control programme with specific goal and measurable outcome. Population specific data on risk factors are essential in

order to set priorities, develop targeted programmes on NCDs. Anticipating the NCD epidemic, WHO has initiated the worldwide STEPwise approach to Surveillance (STEPS) of risk factors for NCDs. STEPS focuses on the periodic collection of data on key risk factors associated with major NCDs which is indispensable for designing community based interventions to reduce risk factors in the population.¹⁴

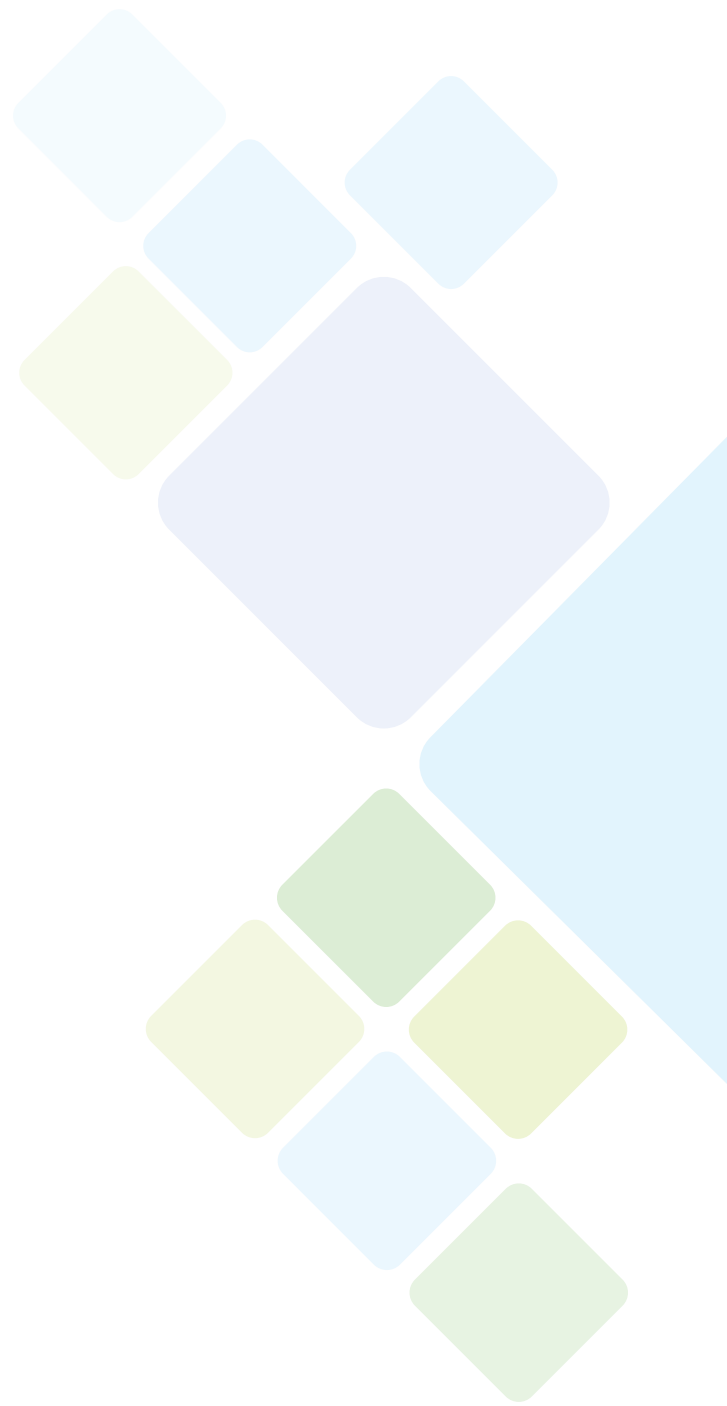
Prevalence of common NCDs are increasing and most of these NCDs share common preventable risk factors. Major risk factors of today will be the diseases of tomorrow. Therefore measuring risk factors for NCDs is an attempt to predict the future distribution of NCDs in a population and is vital for promoting disease prevention and control programmes.⁹ Therefore it is of prime importance to conduct a nationwide survey on NCD risk factors taking into account of national representatives.



2. OBJECTIVES OF THE STUDY

This survey is designed to have a nationally representative prevalence estimate of NCD risk factors of all non-institutionalized individuals of both sexes of 25 years and above following WHO STEPS. The main objectives of the study are -

1. To determine the distribution of the risk factors such as tobacco use, alcohol consumption, low fruit and vegetables intake, low physical activity, obesity, hypertension and diabetes mellitus.
2. To prepare a baseline data on NCD risk factors for planning, prevention and control activities of NCDs in Bangladesh.



3. METHODS

The NCD risk factor survey was designed to establish baseline information on the major risk factors for the action plan implemented within the integrated NCD prevention and control programme in Bangladesh. The survey was conducted using steps 1 and 2 of the WHO STEPwise approach for NCD surveillance taking into account local needs and resources available.

Definition of the study population

The target population for this survey includes all men and women aged 25 years or older. This target population includes all people who consider Bangladesh to be their primary place of residence. This definition included those individuals residing in Bangladesh even though they may not be considered a citizen of the country. The only people excluded from the study were those individuals:

- Visiting Bangladesh (e.g. tourists);
- Who indicated their primary place of residence as a military base or group quarters (e.g. a dormitory);
- Who were institutionalized-including people residing in hospitals, prisons, nursing homes and other such institutions.

In general, the target population of the study included individuals residing in all geographic areas of the country.

Sampling frame

For the study, an indirect cluster sampling frame was used to select the sample. The sampling frame used in the population census conducted by Bangladesh Bureau of Statistics (BBS) in 2001. Census 2001, latest census in the country, provided the measures of size of household. There were six divisions in Bangladesh which were the largest administrative units. Each division was divided into several districts (Zilla) and sub-districts (Upzilla). Within sub districts *mauzas* and *mahallas* were the smallest units with defined area in rural and urban areas respectively. It was decided that primary sampling units (PSUs) for rural stratum were *mauzas*, the smallest revenue rural geographic unit having jurisdiction list number for which census information was available with clear and updated boundaries. A *mauza* may be populated or depopulated. For the urban stratum, PSUs were based on *mahalla* which was the lowest urban geographic unit having identifiable boundaries. Households in this survey was defined according to BBS as "A dwelling in which persons either related or unrelated living together and taking food from the same kitchen".

According to the Census 2001, there were 64 407 PSUs (*mauzas and mahallas*) in Bangladesh which also included cantonment areas and depopulated areas such as areas with less than five households (Box 1). In the census data the PSUs were distributed in the rural areas, municipalities, other urban areas, Statistical Metropolitan Areas (SMA), cantonment areas and city corporation areas. Urban stratum was defined as the *mahallas* from municipality area, SMAs and city corporation areas. SMAs were the areas which had urban characteristics adjoining city corporation areas. Rural stratum includes *mauzas and mahallas* from rural area and other urban areas as other urban areas had characteristics similar to those of rural areas. Cantonment areas were not included in the sample frame and depopulated areas as defined by households (HH) less than five were deleted from the frame. Therefore final PSUs left for this survey was 58 755.

Box 1: Selection of primary sampling units (PSUs)									
Division	Total <i>mauzas</i> or <i>mahallas</i>			Sampled <i>mauzas</i> or <i>mahallas</i>			Sampled households /individuals*		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Barisal	2 837	394	3 231	15	5	20	420	140	560
Chittagong	6 866	1 623	8 489	35	39	74	980	1 092	2 072
Dhaka	13 521	3 365	16 886	54	98	152	1 512	2 744	4 256
Khulna	6 044	1 059	7 103	26	21	47	728	588	1 316
Rajshahi	15 472	2 416	17 888	58	31	89	1 624	868	2 492
Sylhet	4 541	617	5 158	12	6	18	336	168	504
Total	49 281	9 474	58 755	200	200	400	5 600	5 600	11 200

*Equal number of male and female HH/individuals

At the first stage 400 PSUs (200 urban and 200 rural) were selected with probability proportionate to size, followed by a random selection of a secondary sampling units (SSUs) per selected PSU. SSUs were based on enumeration areas (EA) from the Bangladesh Agricultural census 2008. These selected EAs were updated with mapping and listing. Typically these EAs were consisted of 200 household units in *mauzas* and 300 household units in *mahalla*. The explicit satisfaction used at the first stage of selection based upon urban (*mahalla*) and rural (*mauza*) designation of BBS. Each list of urban and rural geopolitical units was implicitly satisfied by division and within division by per cent literacy of women in each *mauza* and *mahalla*. At the third stage 28 households per PSUs were selected systematically within the listed household form and selected SSU (process shown in Box 2).

Box 2: Stages of sample selection and their techniques		
Stage	Selection	Technique
1	Selection of <i>mauzas</i> and <i>mahalla</i> (400 PSU;200 urban and 200 rural)	Probability proportional to size (PPS) based upon the total number of households in the 2001 census.
2	Selection of one SSUs from each <i>mauza</i> and <i>mahalla</i> (average HH of 200 in rural and 300 HH urban in each selected SSUs) from updated data of agriculture census 2008.	Simple random sampling based on Agriculture Census 2008.
3	Selection of 28 HH (half male and half female households) from each SSU	Systematic random sampling
4	Selection of eligible respondent from household roster	Simple random sampling (Kish method)

Sampling design features

The sampling design of this survey is based on the Global Adult Tobacco Survey (GATS) 2009 of Bangladesh.¹⁵ That particular design was developed by the joint effort of National Institute of Preventive and Social Medicine (NIPSOM), Bangladesh Bureau of Statistics (BBS), and Centers for Disease Control (CDC), and World Health Organization (WHO). The basic design is based on the sample design for GATS developed by CDC. Subsequently through workshops and seminars with BBS and other national experts, the sample design for Bangladesh was adopted. The electronic data collection programme used in this survey was adopted from the one developed by CDC and Research Triangle Institute (RTI) International for GATS.¹⁶

The sample for this survey was a multistage, geographically clustered, probability-based sample of households. Sampling of eligible individuals was done from a sample of households with one individual randomly selected per household. Each selected household was randomly assigned as a men or women household. Households assigned to the men group was with only men aged 25 years or more living in that household listed in the roster during the screening phase of interview and subsequently a men was selected randomly from that list. Similar procedure was used for selection of women respondent from a women household. The questionnaire was administered by interviewers and no proxy interview was allowed.

The sampling unit in each stage of selection refers to the entities that were selected for the survey. In this survey, the ultimate sampling units were the household and one individual residing within the selected household. Since, in general, up-to-date listings of all households in a country do not exist (housing structures are built and torn down every day) and because it would be too costly to select a simple random sample of households directly within a country, the sample has been designed to be selected using a multi-stage, geographically clustered design.

Sample size calculation

Using the prevalence of any form of tobacco consumption 43.3% among the population with 95% confidence interval and 3% margin of error, the minimum sample size was 1 048 (rounded to 1 050) required for effective analysis per group such as sex (male/female) and residence (urban/rural). This study was proposing national estimate in four groups according to gender and urban-rural areas and assumed a design effect of 2 for adjusting between-subject homogeneity in cluster. In this regard, a minimum of $(1\ 050 \times 4 \times 2)$ 8 400 respondents was needed; only one respondent per household was selected.

To estimate the final sample size of households following anticipated non-response rates at the household and individual level were considered. In this regard response rates reported in recently completed GATS¹⁵ was used for determining the inflation. Adjusting GATS household eligibility rate (90%), household response rate (97.7%), household screening rate (95%), individual eligibility rate (98%) and individual response rate (95.8% in both men and women) the targeted sample size was inflated to 11 200 . Based on number of PSU (400) an average of 28 $(11\ 200/400)$ households (later randomized to produce equal male and female households based on design specifications) per SSU were targeted.

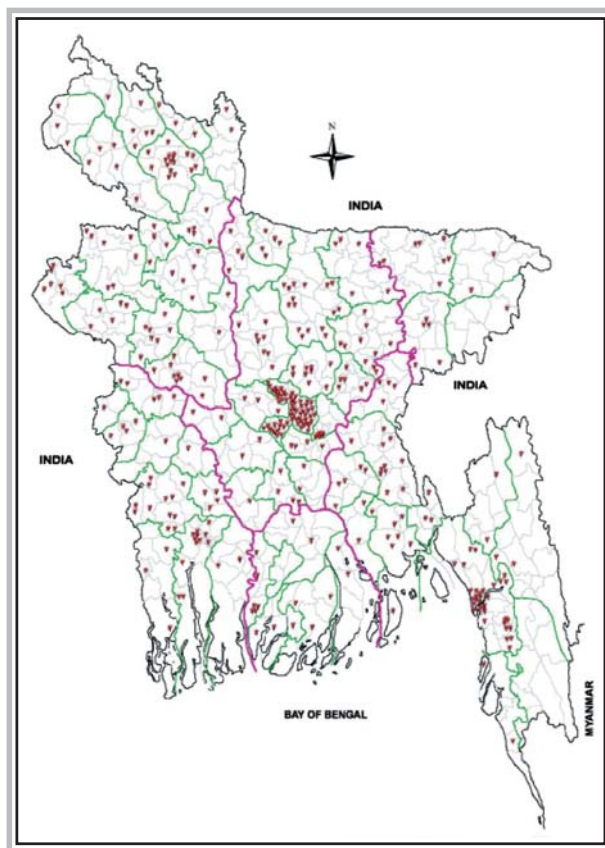


Figure 1: Study locations

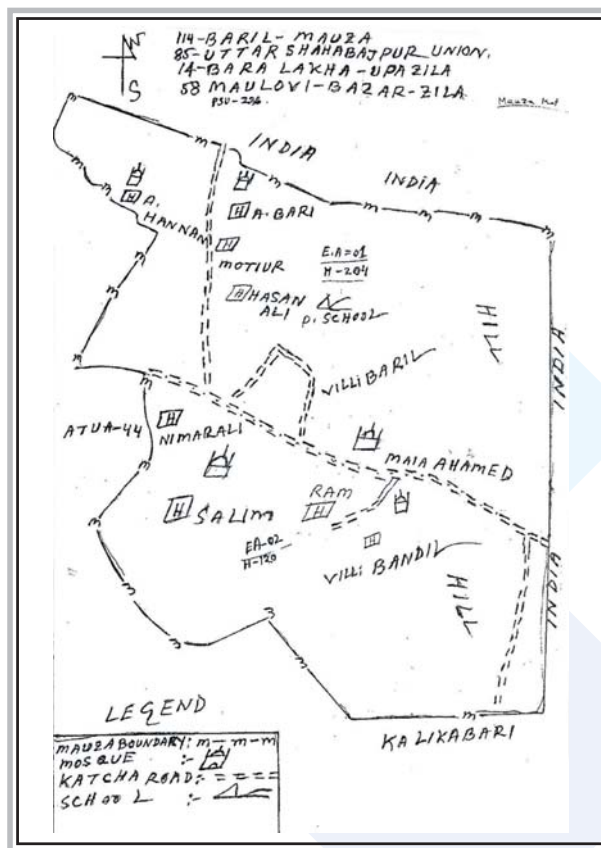


Figure 2: Sample map of a primary sampling unit

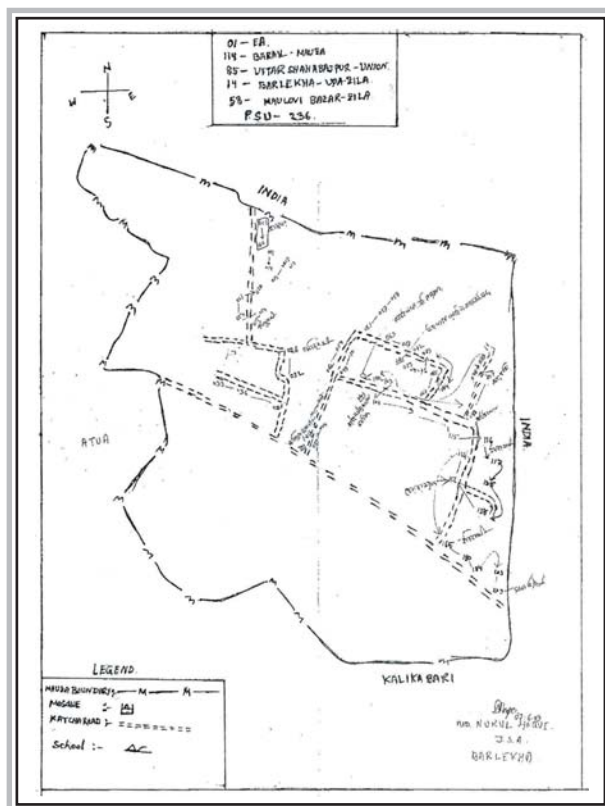


Figure 3: Sample map of a secondary sampling unit

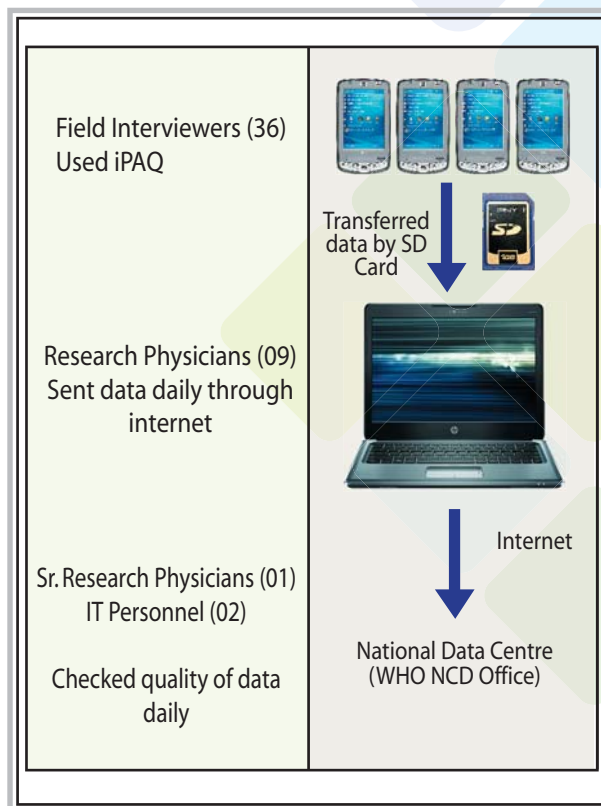


Figure 4: Flowchart of digital data collection and transfer

Response rate

Targeted size of the sample was 11 200 from 400 PSUs, out of them 9 947 (90.6%) households could be covered from 398 PSUs. Remaining 2 PSU could not be visited due to political unrest in hill tract region. Finally 9 275 (93.3%) individual questionnaires were completed out 9 947 household questionnaires.

Box 3: Summary results for overall response proportions							
	Residence						
	Urban		Rural		Total		
	Number	per cent	Number	per cent	Number	per cent	
<i>Selected households</i>							
Completed (HC)	4 974	88.8	4 973	88.8	9 947	88.8	
Household completed, no one selected (HCN)	234	4.2	309	5.5	543	4.8	
Household incomplete (HI)	8	0.1	8	0.1	16	0.1	
Household no screening respondent (HNS)	13	0.2	7	0.1	20	0.2	
Household refusal (HR)	35	0.6	2	0	37	0.3	
Household unoccupied/ vacant/demolished house	139	2.5	61	1.1	200	1.8	
Household address not a dwelling	4	0.1	5	0.1	9	0.1	
Household with person incapacitated (HPI)	5	0.1	4	0.1	9	0.1	
Household others (HO)	188	3.4	231	4.1	419	3.7	
Total households selected	5 600	100	5 600	100	11 200	100	
<i>Household response rate (%)*</i>	91.3%		90.0%		90.6%		
<i>Selected individuals</i>							
Completed (PC)	4 629	93.1	4 646	93.4	9 275	82.8	
Not eligible	1	0	0	0	1	0	
Ineligible, later determined	1	0	2	0	3	0	
Refusal (PR)	16	0.3	6	0.1	22	0.2	
Incapacitated (PI)	19	0.4	13	0.3	32	0.3	
Other (PO)	308	6.2	306	6.2	614	7.2	
Number of eligible individuals	4 974	100	4 973	100	9 947	100	
<i>Individual response rate (%)**</i>	93.1%		93.5%		93.3%		

*Household response rate (HRR) was calculated by:
$$\frac{[HC] \times 100}{[HC] + [HCN] + [HI] + [HNS] + [HR] + [HPI] + [HO]}$$

**Individual response rate (IRR) was calculated by:
$$\frac{[PC] \times 100}{[PC] + [PR] + [PI] + [PO]}$$

Data collection procedures

Data were collected by using structured questionnaire from WHO STEPS system by the trained field interviewers (see list of project staff in Appendix A). Updating of household listing, proper mapping of households for identification, repeated visits to selected households was taken to ensure a total response rate of 80% or more. Sample substitutions were not allowed as per sampling protocol. A maximum of one respondent per household was selected from households that completed the screening process. Nearly all members of the target population were sampled from their primary place of residence. Some individuals who were living at some location other than their "primary" home at the time the interviewer visited a household, for example college students who were staying in dormitories, families staying at their vacation homes, and labourers who were temporarily living at a farm during the harvest season. These individuals were sampled from the place they consider to be their primary place of residence. Consequently then,

- If a household was visited and the interviewer learned some people staying on that time at the dwelling unit considered the dwelling unit to be a vacation home and not their primary residence, then those individuals were not included in the roster for the household.
- If a household was visited and the interviewer learned some residents considered the dwelling unit to be their primary place of residence; however, they were not staying in the household, then those individuals were still included in the roster for the household.

Training of data collectors

The research physicians and field interviewers underwent a four day extensive training in Shaheed Suhrawardy Medical College Hospital (ShSMCH) on questionnaire, interview technique, physical measurement and blood pressure measurement,¹⁷ way of supervision and others. Training on physical measurement and blood pressure measurement was extensive to ensure minimal inter observer variation and to increase validity. All the investigators, personnel from health directorate, WHO and Director of ShSMCH and Principal of the medical college were involved in the training process. It is important to mention here that the interviewers were involved in the recently completed GATS.¹⁵ Therefore they already had acquaintance with PSUs and SSUs. Only the sampling of households is newly done to avoid or minimize repeat selections. Only the research physicians were new addition to the field team.

Study period

Data were collected from November 2009 to April 2010. Mapping listing, trained manpower and IT equipments including PDAs of GATS were used in this study.¹⁵

Survey instruments

Survey was done by using a standardized questionnaire and by doing physical examination. Questionnaire for this survey was developed by using steps I & II of WHO STEPS.¹⁴ All the core components of the questions along with some expanded questions were incorporated. (Appendix B); Questionnaire was translated into Bangla. Validation of the translated questionnaire was done. Physical examination was done according to standardized procedure by measuring height, weight, waist circumference, pulse and blood pressure. Relevant information were also obtained from medical records or other authentic documents as necessary from study population.

Fieldwork

Data were collected by nine field teams. Each team consisted of one research physician, two women and two men interviewers. Interviewers had at least a bachelor's degree. There was one IT personnel to assist the data collection. All the interviewers and research physicians were specially hired, taking into account their educational background, experience, computer skills and other relevant qualifications. There were total of 36 interviewers for data collection. Equal number of men (18) and women (18) interviewers were recruited to ensure the cultural sensitivity and quality of reporting by ensuring that women respondents were interviewed by women interviewers and men respondents by men interviewers.

Field interviewers were responsible for data collection on questionnaires using handheld devices (iPAQ). Research physicians were responsible for the overall operation of the field team. In addition research physicians conducted spot checks to verify information collected by interviewers and also to ensure the accuracy of household identification in the field as well as ensuring the measurement taken by the interviewers. Research physician also checked blood pressure of four respondents measured by four interviewers randomly and wherever necessary for validation of the data collection. Research physicians were also responsible for aggregation of the individual-level data to their laptops and forwarding the information through email to the National Data Center through secured system to a file transfer protocol (FTP) server on daily basis, IT personnel were responsible for providing technical support with respect to the concerns raised during fieldwork and trouble-shooting any issues with the handheld devices (see Figure 4).

Ascertainment of variables:

1. **Tobacco:** Information of tobacco was collected for both smoking and smokeless forms. Those who smoked or used smokeless tobacco in the past 30 days were considered as 'current' user. Daily users were asked about the initiation and duration of use by means of age and year(s) both. Frequency of use of products was asked. Question was asked if the respondents were exposed to second hand smoke in last seven days at their home or workplace (see Appendix C).
2. **Alcohol:** Alcohol consumption was measured by asking the respondents if they consumed ever, within past 12 months, and within past 30 days. They were also asked about the frequency of "standard" alcoholic drinking by number of occasion in past 12 months and in past 30 days. One standard alcoholic drink equals to 10 grams of ethanol and was measured by showing the pictorial showcards of different size drinking glasses (see Appendix D).
3. **Diet:** Respondents were asked for the number of days they ate fruit and vegetables in a typical week and on one of those days how many servings they ate these. One standard serving size equals to 80 grams. Servings were measured by showing the pictorial showcards or measuring cups (see Appendix C).
 - For raw green leafy vegetables, 1 serving = one cup;
 - For cooked or chopped vegetables, 1 serving = ½ cup;
 - For fruit (apple, banana, orange), 1 serving = 1 medium size piece;
 - For chopped, cooked and canned fruit, 1 serving = ½ cup; and
 - For juice from fruit, 1 serving = ½ cup.

4. Physical activities: According to WHO STEPS, physical activity is defined as any bodily movement produced by skeletal muscles that require energy expenditure. Physical activity was categorized into vigorous and moderate and sedentary activity. A vigorous-intensity activity was defined as any activity that causes large increase in breathing or heart rate, if continued for at least 10 minutes (e.g. running, carrying or lifting heavy loads, digging or construction work). Moderate-intensity activity was defined as any activity that causes small increase in breathing or heart rate, if continued for at least 10 minutes (brisk walking or carrying light loads). Physical activity related to work, transportation and leisure time was assessed in terms of minutes that caused them breathless or feel palpitation. However continuous activity of at least ten minutes was taken in to account to add up to the total minutes of activity for the day. Then the total duration was converted into metabolic equivalents (MET minutes/week). METs are commonly used to express the intensity of physical activities. MET is the ratio of a person's working metabolic rate relative to their resting metabolic rate. One MET is defined as the energy cost of sitting quietly and is equivalent to a caloric consumption of 1 kcal/kg/hour. It is estimated that compared with sitting quietly, a person's caloric consumption is three to six times higher when being moderately active (3-6 METs) and more than six times higher when being vigorously active (>6 METs). However for our study we have taken four times for moderate and eight times for vigorous-intensity activity than sedentary position (sitting quietly).

Physical activities were measured in the survey by asking the respondents about their weekly and daily vigorous and moderate activities during work and leisure time, activities related with transport and time spent in sedentary position. Respondents were asked for number of days they do vigorous and moderate activities in a typical week. In such a day, how much time they spent (in minutes) in these type of activities. Similarly they were asked about time spent on transport related activities. However, for sedentary position, directly spent time (in minutes) in a day was asked. All type of physical activities transferred in minutes per day. MET-minute was calculated according to the STEPS protocol as follows: one minute in sedentary position (sitting quietly) equal to 1 MET-minute. One minute in moderate and transport related activities equal to 4 MET-minutes and one minutes in vigorous activities equal to 8 MET-minutes. All MET-minutes for different forms of physical activities added together to get total physical activities MET-minutes. Then total activities were categorized in high, moderate and low type. Those who spent 3000 or more MET-minutes per week, they were involved in high category. Those spent between 600-3000 MET-minutes, they were involved in moderate physical activities. Rest of the respondents, those did not meet even moderate activities; they fall in low activity category.

5. Anthropometric measurements: Height, weight and waist circumference were measured to calculate their body mass index (BMI), thereby obesity. Height was measured by a portable height/length measuring scale to the nearest millimeter. Participants were asked to remove their footwear and head gear, if any, and stand on the board facing the interviewer, feet together, heels against the board, knees straight. Looking straight ahead and not to tilt head up and making sure that eyes were at the same level as the ear. Height was read in centimeter to the nearest millimeter. Weight was measured by a portable bathroom weighing scale (Tanita HA-621). The scale was put on a firm, flat surface. The participants were asked to remove footwear and wear light casual clothing, and stand still, face forward and place arms on the side. Waist circumference was measured by plastic measuring tape, maintaining privacy of the participants; in a separate room or area screened

off from other people. This was measured directly on the skin at the end of a normal expiration with the arms relaxed at the sides, at the midpoint between the lower margin of the last palpable rib and the top of the hip bone. Waist circumference was measured to nearest millimeter.

6. Blood pressure: For collecting information about high blood pressure, both self reported data and blood pressure measurements were taken. Blood pressure was measured using ordinary aneroid sphygmomanometers on the right arm while the participants were in sitting position and hand in resting on handle of the chair or some objects, after rested for at least 5 minutes. Korotkoff phase V was taken as diastolic blood pressure. Systolic and diastolic measurements were taken by means of mmHg. A second reading was taken after 2 minutes resting interval. Pulse was also measured before each time blood pressure was measured by means of beats per minutes. Mean of two measurements of blood pressure and pulse were used in the statistical analysis. Stage I Hypertension was defined as blood pressure $\geq 140/90$ mmHg and/or history of antihypertensive medication or any advice for controlling high blood glucose.

7. Diabetes: As this study did not include biochemical measurement, information of diabetes or raised blood glucose level was only collected by asking the respondents if any health personnel told them that s/he had diabetes or not. S/he was also asked if s/he measured blood glucose level earlier and/or received any medicine.

Quality control measurement

Senior research physician, survey investigators, IT personnel, staff from the Ministry of Health and Family Welfare (MoHFW), Directorate General of Health Services (DGHS) and World Health Organization, Bangladesh visited the field to monitor the data collection in order to ensure that standard quality control procedures were followed.

Both formative and global assessments by the quality control (QC) personnel were done. None of the nine QC observers reported any violation of SOP in measurement and data collection. The overall rating of interviewer's conduct and performance was found to be satisfactory based on indicators, behavior of interviewer, mode of measurement, maintenances of interview environment and mode of administration of the questionnaire.

Measurement data of four variables were collected by the QC personnel. Relevant field data were then extracted from the main data set in a different spreadsheet. In the current study blood pressure and anthropometric measurement were taken by trained field investigator and the quality control check was done by physician. Evidence suggests that effective training has the potential to minimize the difference in measurement by different rater irrespective of whether they are physician or not.¹⁷

Measurements by individual observer of the variables (SBP, DBP and height and waist circumference) and number of days with moderate or vigorous physical activity on an average week were found to be highly correlated in terms of Spearman rho coefficient (ranging from 0.933 to 0.998) across two independent measurements by two raters indicating highly significant agreement between two measurements.

Box 4: Agreement between measurement by field investigators and quality control physicians

Variables	Quality control persons (mean)	Field interviewer (mean)	Test statistics	P value
Systolic BP (mmHg)	132.9	131.3	0.977*	0.000
Diastolic BP (mmHg)	83.1	80.6	0.933*	0.000
Height (cm)	157.1	157.1	0.998*	0.000
Waist circumference (cm)	77.8	77.1	0.983*	0.000
Smokeless tobacco user (%)	52.2	52.2	0.826**	0.000
Moderate to vigorous physical activity (days/week)	3.9	3.9	0.954*	0.000

* Spearman r, ** Kappa

Number of days having moderate to vigorous physical activity in an average week was also in agreement ($r=0.954$). The inter-rater agreement for the raters of the smokeless tobacco was also highly significant ($k=0.826$).

Data processing and analysis

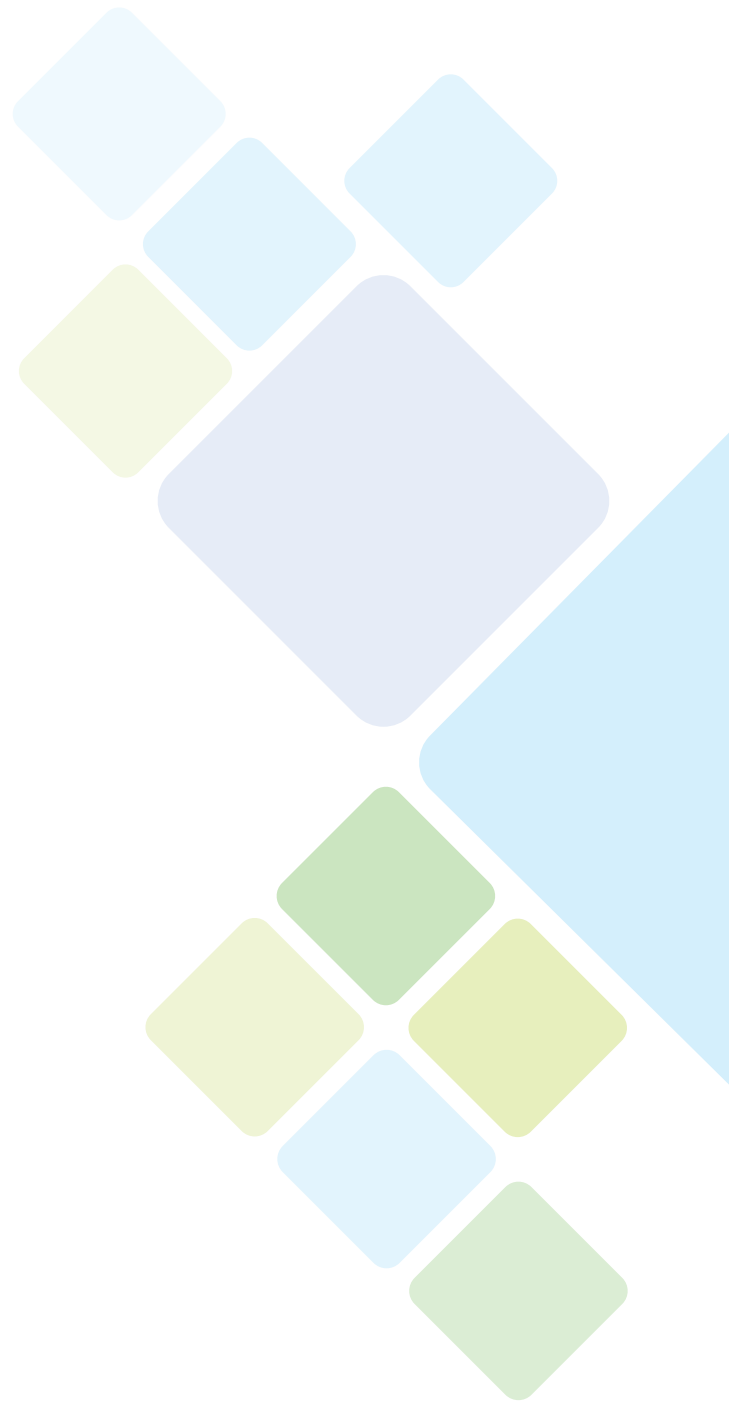
The aggregated data from the interviewers were sent to the FTP server by all research physicians on a daily basis using secured digital (SD) cards. IT personnel aggregated the data that they had received from all research physicians twice in a week and gave feedback to the field staffs if problem observed. Senior research physician cleaned the data and aggregated all the files to a single SDF file with the support of IT personnel (Figure 4). Then, using an aggregation module in GSS software and a statistical software SPSS version 16.0, the aggregated data was transposed to an analyzable raw data format that can be read by statistical software for further analysis and reporting.

Complex survey data analysis was performed to obtain population estimates and their 95% confidence intervals. The collected data used for assessment of prevalence of risk factor of NCD in population of Bangladesh. All analyses were done by using SPSS 16.0 version.

In this report an index of household economic status was created and used as background characteristics with information on household ownership of assets. It is an indicator of the level of wealth that is consistent with expenditure and income measures.¹⁸ The wealth index was constructed using principle component analysis of the household assets. Each asset was assigned a weight (factor score), and the resulting asset score were standardized in relation to normal distribution with mean zero and standard deviation one. Each household was then assigned a score for each asset. The scores were summed for each household. Individual were ranked according to the total score of the household in which they resided. The sample was then divided in to quartiles from one (lowest) to four (highest). A single asset index was developed for the whole sample; indices were not prepared for urban and rural population separately. Distributions of risk factors across the quartiles were then examined.

Ethical consideration

First of all, ethical clearance was obtained from the ethical committee of Bangladesh Medical Research Council (BMRC). The study was conducted maintaining all possible ethical considerations. Before data collection informed written consent of the study subject was obtained in conformity with the revised declaration of Helsinki. Detailed study related information was read out and explained in the local language from a printed handout. Informed consent form contained objectives and methods of the study, duration and frequency, clinical examination, risks and benefits of the study. Consent was taken in Bengali and interview was also conducted in Bengali. Finger impression was obtained from participants, who do not know how to sign. The respondents had a right to refuse to answer any question without providing the reason for their decisions and could withdraw from the study at any time. The information was dealt with highest confidentiality and used only for this study. Privacy of the respondents was maintained during data collection.



4. RESULTS

Results are presented in a descriptive manner for age and sex groups separately and combined. Data of key variables on urban-rural residential strata are plotted in figures for visual impression. Generally speaking risk factors are highly prevalent in Bangladeshi adult population.

4.1 Socioeconomic background

Of the 9 275 respondents, 4 312 (46.5%) were men (Table 1.1). Mean age was 42.4 years with standard deviation of 13.5 years. Half of them were from urban areas as stipulated in the study design. According to survey data in general Bangladesh doesn't have a well educated population, median years of schooling being 3 years (5 years in men and 3 years in women). Interestingly and encouragingly similar proportion of men and women have completed primary education, however more men (19.3%) have completed secondary school than women (11.2%) (Table 1.2). Almost 90% were Muslims which is similar to census data. Because the subjects were aged 25 years or older, 91% were currently married. Occupational groups were classical of Bangladeshi population (Table 1.3).

The wealth index was constructed using principal component analysis. Asset information was collected with the NCD survey questionnaire. The questionnaire covered information on household ownership of a 20 items. A single asset index was generated. According to the wealth index the survey population is found to be equally distributed in all four wealth quartiles from lowest to highest. The distribution is nearly persistent in both sexes (Table 1.4).

4.2 Tobacco

4.2.1 Smoking habit

The smoking status of the participants were categorized into 'current smoker' those who have smoked tobacco in past 30 days and 'daily smoker' those who smoke any tobacco products every day. Categorization of smoking status in such groups actually facilitates the addictive characteristics of tobacco.

Overall proportion of current smoker was 26.2% (men 54.8% and women 1.3%) (Table 2.1). Prevalence figures are a little higher in rural residents (Figure 5). Most current smokers were actually daily smoker and the proportion of non-daily smoker in men was only 0.8% (Table 2.1). Age specific distribution of smoking prevalence was almost homogeneous across age groups in men but increasing trend was observed in women (Table 2.1).

Mean age of initiation of smoking in the adult population was 18.4 years. Women on an average started smoking late (23.5 years) than men (18.3 years). Around 34.6% respondents initiated smoking at or before the age of 15 years (Table 2.2). The average duration of smoking in the survey population was 26 years (Table 2.2).

Around seven out of ten (67.7%) current smokers used manufactured cigarette. In men the percentage was (69.0%) much higher than in women (12.5%). The use of manufactured cigarette in survey population was highest in the youngest age group (79.8%) and lowest in the eldest age group (50%) (Table 2.3). This trend reflects a gradual shift of bidi smoking towards cigarette smoking. About four

out of ten (43.4%) smoked biri (men 42.7%, women 69.9%). Some people smoked both cigarette and biri. Daily cigarette smokers on an average smoked 9.5 cigarette sticks per day and daily biri smokers on an average smoked 12.8 sticks of biri per day (Table 2.4).

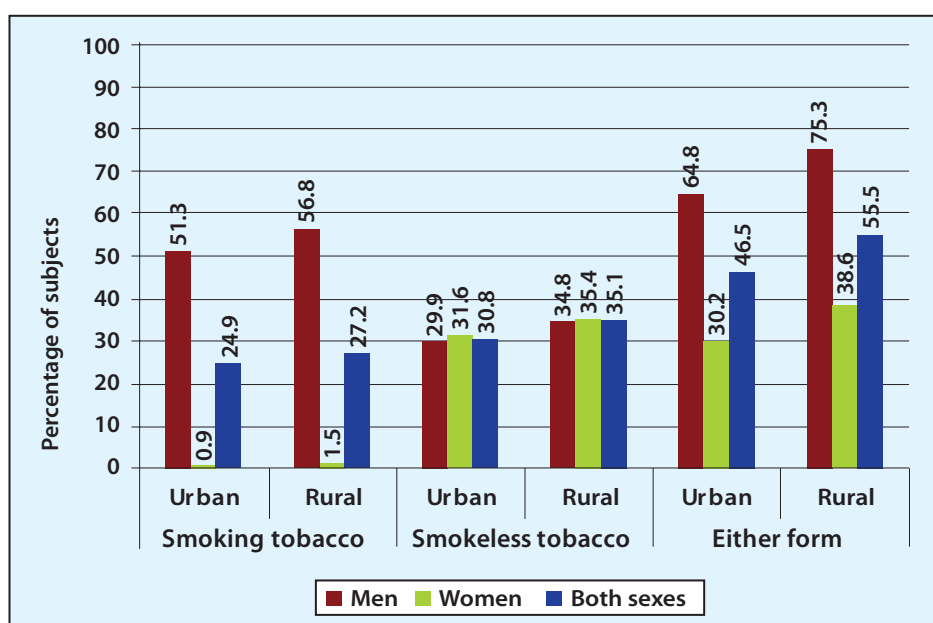


Figure 5: Prevalence of current tobacco use, smoking or smokeless forms, in rural and urban areas

In the survey population 7.5% were former daily smoker (Table 2.5). The proportion of former daily smoker was much higher in men (15.4%) than in women (0.7%). A generalized increase in the proportion of former daily smoker was evident across age. Proportion of former daily smoker was highest in eldest age group (30.4%).

4.2.2 Smokeless tobacco

Smokeless tobacco traditionally has not been emphasized for its harmful health effect in Bangladesh. It is considered to have equal potential to impair health and can lead to scores of chronic diseases. Overall consumption of smokeless tobacco in survey population was 31.7% (Table 2.6). More women (33.6%) were found to use smokeless tobacco than men (29.4%). Most smokeless tobacco users took it daily and only 1.6% was reported to be occasional users. Older people used smokeless tobacco more than young people. This trend was more apparent in women.

Around 3.3% were former user of smokeless tobacco and proportion of quitter were more in men (5.1%) than in women (1.8%) (Table 2.6). Smokeless tobacco use in general was slightly more in rural area (Figure 5). Among the smokeless tobacco users 66.3% used jarda, 33.5% used sada pata and 17.4% used gul. Alarmingly gul is found to be popular in younger people (Table 2.7). All these products were taken five to seven times a day (Table 2.8).

4.2.3 Tobacco use in any form

Seventy percent men used any form of tobacco and in women the proportion was around 34.4%. Over all (sexes combined) 51% consume either smoking or smokeless tobacco. Around 7.4% of the survey population used both the forms of tobacco, such practice was particularly high in men (14.1%)

compared to women (1.6%) (Table 2.9). In general tobacco use was more in rural area (55.5%) compared to urban area (46.5%) (Figure 5).

4.2.4 Exposure to second hand smoke

Second hand smoke (SHS) exposure in at least one day in past week in the home was reported by 38% population. In general the exposure is reported more by women (42%) than men (33%). Exposure to SHS in workplace was reported by 25% population (men 31% women 18%) (Table 2.10). In combination on an average half of men and women reported exposure to SHS in home or workplace. For non-smokers it was about 42% (men 39%, women 44%).

4.3 Diet

4.3.1 Fruit and vegetables

Eating pattern of the surveyed population was assessed by asking them about frequency of consumption of fruit and vegetables. Overall the survey population took fruit on an average 1.8 days in a week (men 1.7, women 1.9). Clearly the consumption of fruit was not enough in survey population. However, vegetables consumption was particularly better in Bangladeshi population. Survey population consumed vegetables in around 6.1 days in a week (men 5.7 days and women 6.4 days). Respondents ate fruit and/or vegetables overall 4 days in a week (men 3.7 and women 4.2 days) (Table 3.1).

To determine the quantity of fruit and vegetables intake serving size were asked (see glossary of terms). Mean per capita consumption of fruit was 1.7 servings per day. Average daily fruit consumption was low in both men (1.4 servings per day) and in women (1.9 servings per day). The survey findings underlined a suboptimal intake of fruit in Bangladeshi population. Although people in Bangladesh take vegetables almost every day, the amount was found to be low. Overall per capita daily consumption of vegetables in the survey population was 2.3 servings (men 2.1 and women 2.5).

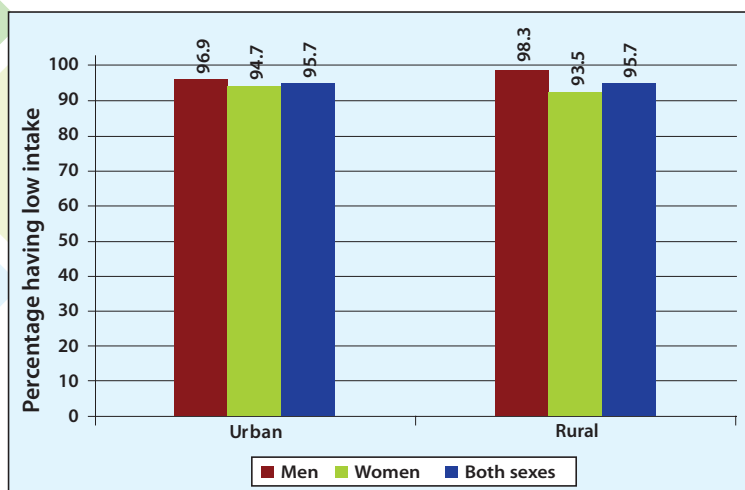


Figure 6: Prevalence of inadequate intake of fruit and/or vegetables (< 5 servings/ day) in rural and urban areas

In combination of fruit or vegetables it was 2 servings per day (men 1.8, women 2.2) (Table 3.1). About half of the people consumed less than two servings a day. Only 4.3% of the population consumed 5 or

more servings either of fruit or vegetables on an average day. The pattern of consumption was similar in both sexes (Table 3.4). There was no striking difference between rural and urban people in consumption of fruit or vegetables (Figure 6).

4.3.2 Type of oil or fat used for meal preparation:

In regard to the use of the type of oil most often used for food preparation at home, around 86% reported to use soybean oil and 12.6% mustard oil and 1% used palm oil for preparation of meal. As meal is prepared in home together for men and women, no sex difference should persist.

4.4 Physical activity

Activity time (that cause large increase in breathing or heart rate with absence of any definite heart pathology) was measured to assess the amount of individuals' physical activity level. On an average a person's total activity time was 177 minutes and the amount of time was almost 3 times in men (268 minutes) than women (98 minutes). The survey population spent 116 minutes for work related activity, around 45 minutes for travel and 16 minutes for leisure time activity. In general younger age groups were found to spend relatively more time for work related physical activity and the trend is persistent across sexes (Table 4.1).

Overall 45.7% of the survey populations were not engaged in work related physical activity (women 54.5%, men 35.5%), around 44.5% reported no transport related activity (men 21.5%, women 64.6%) and around 81.9% did not attend in any leisure time physical activity (Table 4.2).

The major bulk of the physical activity was usually contributed by work, transport and recreation related activity together. In our sample more than half of the total activity (56.2%) was contributed by work related activity, around 31% were contributed by transport related activity and around 13% were contributed by the leisure time physical activity (Table 4.3). Around 61.8% of the survey participant had never been engaged in vigorous physical activity and 32.7% not even in moderate physical activity (Table 4.4).

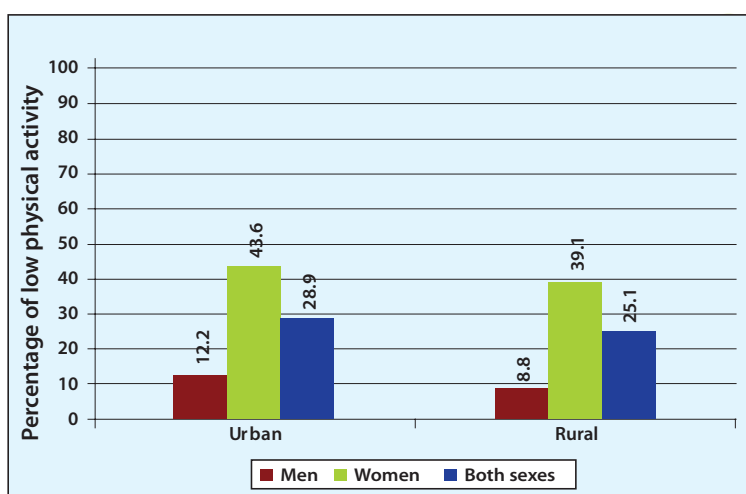


Figure 7: Prevalence of low physical activity (< 600 MET-minutes) in rural and urban areas

Men on an average spent four times more time in vigorous intensity activities (101 minutes) than women (25 minutes) and nearly double time in moderate intensity activity (167 minutes vs. 77

minutes). Both men and women spent similar amount of time although the amount of time spent for sedentary activity sharply increases with age in either sex (Table 4.5).

Physical activity data of three domains were combined to categorize individual's total physical activity status as is conventionally done. Analysis suggests overall 27% of the survey population fell into low physical activity category, 20.2% fell in to moderate physical activity category and 52.8% fell in to high physical activity category. Men were found to have higher level of physical activity than women (Table 4.6).

In general low physical activity was prevalent in 27% of the population (men 10.5%, women 41.3%). Men were more active than women both in rural and urban areas (Figure 7).

4.5 Alcohol consumption

Prevalence of alcohol consumption was assessed by status of usage and the consumption behavior. The consumption behavior of binge drinking was specially assessed due to its associated cardiovascular risk. In the survey population only 0.8% (men 1.5% and women 0.1%) were current drinker (drank in past 30 days). Inversely 95.6% never took alcohol (Table 5.1). Among the consumer of alcohol (who drank in past 12 months), around 4.2% were daily drinker (Table 5.2).

Current drinkers on an average had 5.8 occasions with at least one drink in past 30 days and consumed on an average 3.6 standard drinks on a drinking occasion (Table 5.3). Two third (66.7%) of the current alcohol consumers were binge drinkers (≥ 5 standard drinks/drinking day for men, ≥ 4 standard drinks/drinking day for women) and almost all of them were men.

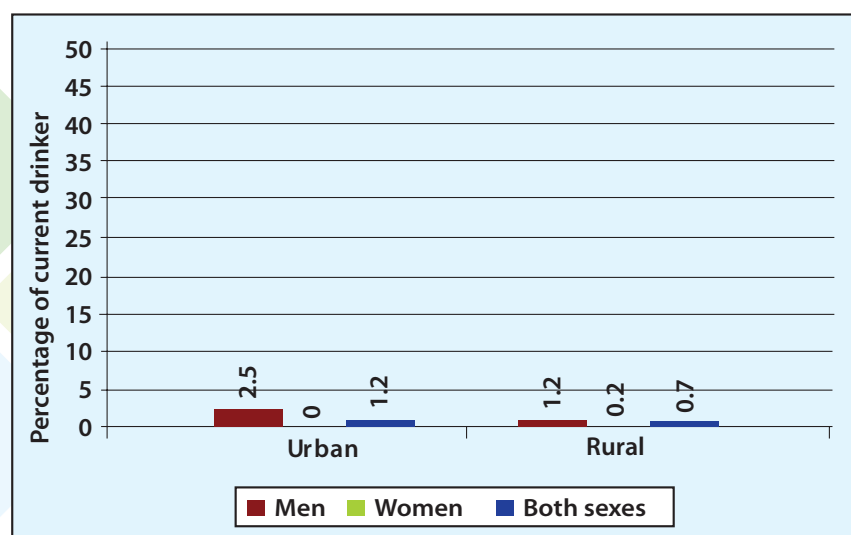


Figure 8: Percentage of people who drank at least one sip of alcoholic drink in past 30 days

On an average current drinkers went binge 4.2 occasions in past 30 days (Table 5.5). In general alcohol consumption was low in rural area; in male prevalence in rural area was almost half (Figure 8).

4.6 Obesity

4.6.1 Body mass index (BMI)

BMI reflects generalized obesity of individual, but it doesn't differentiate between solid masses like bones and muscles with fat. In general men (mean BMI 21) were lighter than women (mean BMI 22). About one fourth of the populations were underweight (BMI <18.5), 14.3% were overweight (BMI 25-29.9) and 3.6% were obese (BMI ≥30). Proportion of both overweight (men 11.1%, women 17%) and obesity (men 2.2%, women 4.9%) in women exceeded those in men. Prevalence of overweight and obesity together constituted 17.6% of the population, the prevalence was much higher in women (21.6%) than in men (13%). Generalized obesity was apparently high in the age group of 35-54 years in either sex. Generalized overweight (BMI ≥25) is more prevalent in urban area than the rural area (Figure 9).

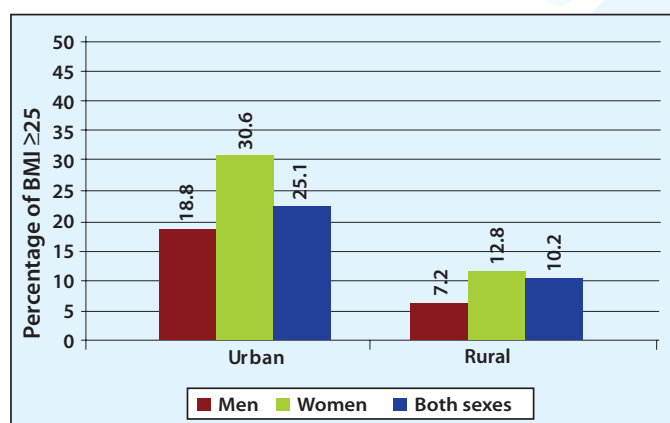


Figure 9: Percentage of people having BMI 25 (kg/m²) or above in urban and rural areas

4.6.2 Waist circumference

The measurement of waist circumference was done to assess the central obesity in survey population. Average waist circumference in men was 78 cm and in women 76 cm. Overall more than one in five among survey population was having increased waist circumference (men ≥94 cm, women ≥80 cm) and 8.9% had substantially increased (men ≥102 cm, women ≥88 cm) waist circumference. Proportion of women with both increased as well as substantially increased waist circumference outnumbered the proportions in men (Table 6.3 & 6.4). Proportion of survey population with increased waist circumference was more in urban area than in rural area (Figure 10).

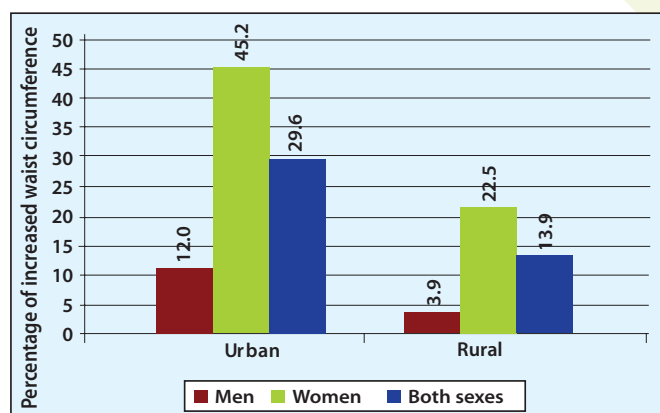


Figure 10: Percentage of respondents with increased waist circumference (men ≥94 cm, women ≥80 cm) in urban and rural areas

4.7 Blood pressure (BP)

Around one third (32.9%) never measured their BP and the proportion was much higher in men (44.5%) than in women (22.8%) (Table 7.1). Prevalence of self reported hypertension estimated in the survey population was 12.5%. It was greater in women and increased with age. More respondents in urban area reported hypertension than in rural area.

In the hypertensive population (self reported) overall 52.3% had been taking antihypertensive drug. In general use of the drug was more prevalent in older age groups. On an average more men (57.9%) were taking antihypertensive medication than the women (48.5%). The observation was consistent across age groups (Table 7.2). Overall two third of the hypertensive patients were advised to reduce salt intake by their physician, the observation was identical in both sexes. Around 41.8% of the respondents were advised to lose some weight, 36.5% were told to cease tobacco use and more than half were asked to raise physical activity level through exercise (Table 7.3). Among the known hypertensive patients 4.1% sought advice or remedy from traditional healers and 1.4% receiving herbal or traditional remedy. Men were found to seek both treatment from traditional healer and use herbal or traditional remedy more than women (Table 7.4).

In this survey BP was measured by trained observers. Mean systolic blood pressure was 121 mmHg in men, 119 mmHg in women and 120 mmHg in both sexes. Mean diastolic blood pressure was 78 mmHg for men, 75 mmHg for women and for both sexes 76 mmHg. A steady increasing trend in both systolic and diastolic BP were evident with age (Table 7.5).

Among survey population 14.8% were having stage I hypertension (BP \geq 140/90 mmHg) on measurement during survey. When subjects with medication were included the prevalence rose to 17.9%. Prevalence of hypertension tended to increase with age irrespective of whether subjects were on medication or not and this trend was persistent in both sexes. Upon measurement 5.5% of the survey populations were having stage II hypertension (BP \geq 160/100 mmHg). Prevalence of stage II hypertension also increased with age (Table 7.6).

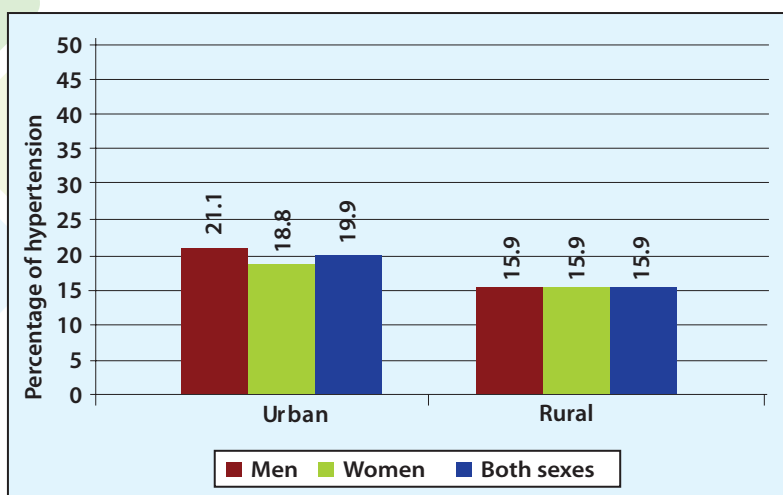


Figure 11: Prevalence of hypertension (blood pressure \geq 140/90 mmHg or drug treatment)

Among the people previously reported as hypertensive, 30.3% were found to be normotensive on measurement and 17.6% were normotensive on medication, 30.7% were hypertensive with medication

and 21.4% were hypertensive and not taking any medication. Uncontrolled BP was found more in women than men and the proportion seems to increase with age (Table 7.7). Prevalence of hypertension in general is more in urban area than in rural area (Figure 11).

4.8 Diabetes mellitus

As this survey did not conduct STEP 3 or biochemical measurement, diabetes status among survey population were assessed on documented evidence of receiving anti-diabetic medication. Around eighty three percent of the survey population never measured their blood glucose. Prevalence of self reported or documented diabetes was found to be 3.9% (men 4.3% and women 3.6%) (Table 8.1). In both sexes prevalence of diabetes is more in urban area than the rural areas (Figure 12).

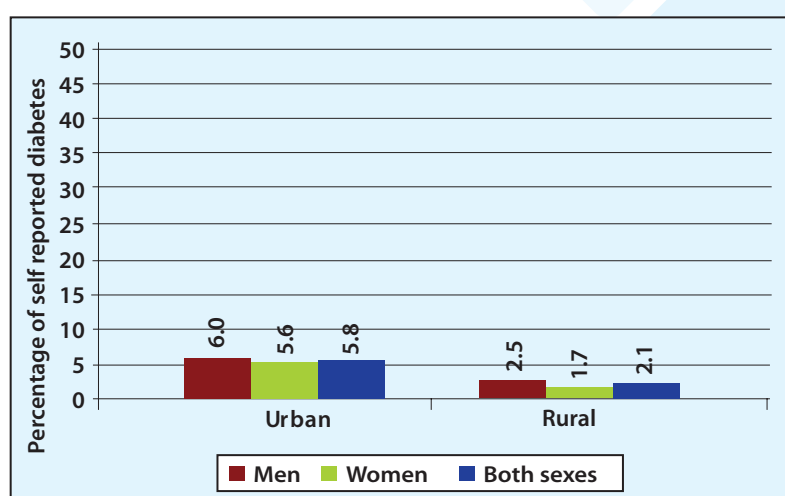


Figure 12: Prevalence of self reported (documented) diabetes in rural and urban areas

Among diabetic patients, 20.8% reportedly taking insulin and 61.1% were taking oral anti-hypoglycemic drug (Table 8.2). Sixty five per cent was taking either form of drug. Among the participants with a previous diagnosis of diabetes, along with drug treatment, most (90.1%) received advice on diet, two third were advised to lose some weight, 47.4% were asked to quit smoking, and 84.7% were advised to start or increase the amount of physical exercise (Table 8.3). Of all participants with known diabetes around 7.7% sought advice or remedy from traditional healers for diabetes, and 4.1% were currently taking herbal or traditional remedy (Table 8.4).

4.9 Socioeconomic gradients and clustering of risk factors

The participants were grouped into four quartiles according to household assets based on principal component analysis. Current alcohol drinking remained same across the socioeconomic quartiles possibly because of alcohol use by a very small proportion of people. Diabetes, hypertension, low physical activity and obesity increased with socioeconomic achievements. However the opposite was the picture for tobacco use, fruit and vegetable intake. As a result higher proportion of wealthier people was seen to have three or more risk factors concurrently. The features is almost similar in both rural and urban areas.

Around 98.7 percent of the survey population has at least one risk factor of NCD, around 77.4% had two or more risk factors and around 28.3% had 3 or more risk factors. More women (31.5%) were found

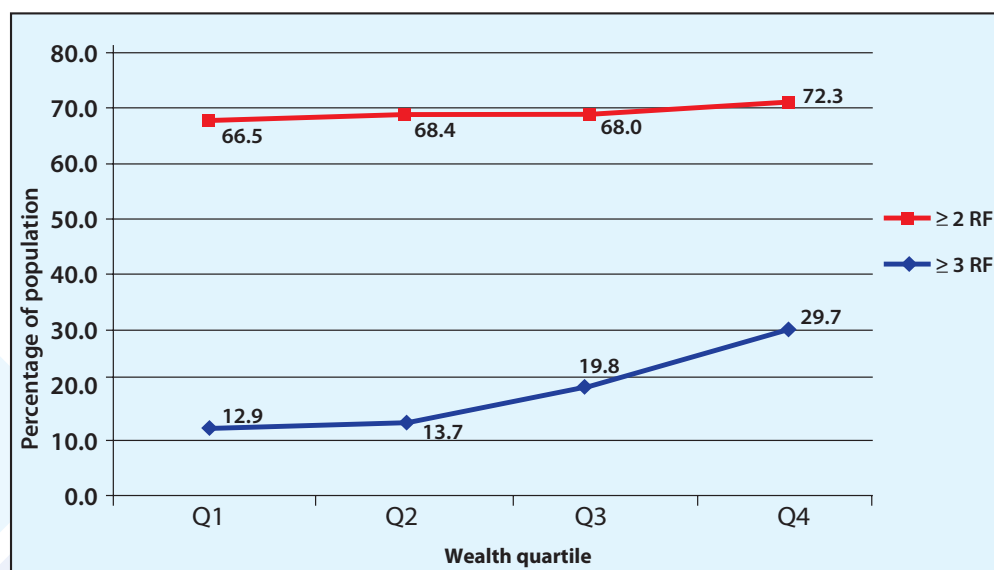


Figure 13: Risk factor clustering across wealth quartiles

to have three or more risk factors than men (24.7%) (Table 9). Figure 13 depicted a clear increasing trend of proportion of respondents with ≥ 3 risk factors with increasing wealth quartiles. However this trend was subtle in case of ≥ 2 risk factors.

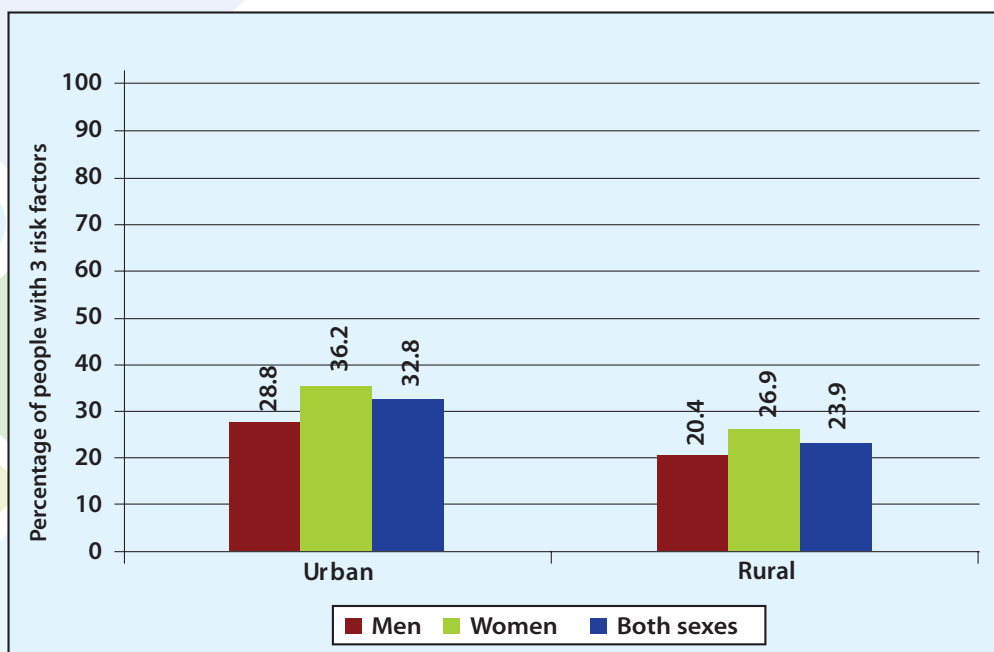
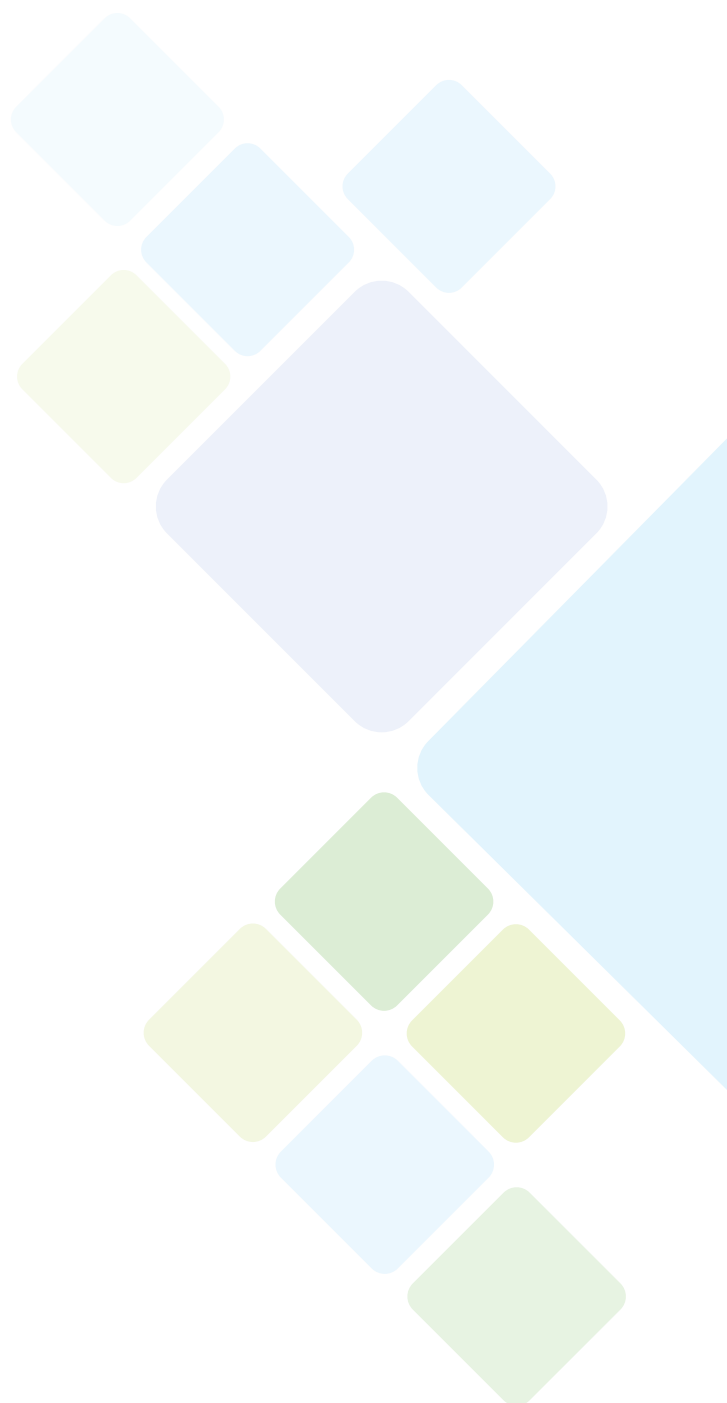


Figure 14: Distribution of respondents with three or more risk factors in rural and urban areas

The phenomenon of clustering was more in urban area (32.8%) compared to rural area (23.9%). This was true across sexes (Figure 14).



5. DISCUSSION

The current study is the first national survey on NCD risk factors in Bangladesh and it is one of the pioneering national survey of NCD risk factors done by using digital technology in the world. The data generated from this survey have reported a high prevalence of risk factors that poses a significant threat to Bangladeshi population. In specific terms a high prevalence of tobacco use, inadequate fruit and vegetables consumption and raised blood pressure were observed. The gender and socioeconomic differentials in several factors have also been identified. Further the survey result highlights the reversal of social gradient (higher occurrence of some risk factors in the low socioeconomic group) for a few NCD risk factors.

Box 5: Number of people (in millions) with selected risk factors among the adult population aged 25 year or above*

Risk factors	Men	Women	Both sexes
Current smoking	18.5	0.4	18.9
Smokeless tobacco use	9.9	11.3	21.2
Tobacco use (any form)	23.6	11.5	35.1
Low fruit/vegetable intake ^a	32.9	31.6	64.5
Low physical activity ^b	3.5	13.9	17.4
Obesity ^c	4.4	7.3	11.6
Abdominal obesity ^d	2.7	11.3	14.0
Hypertension ^e	6.2	5.8	12.0
Diabetes mellitus (documented)	1.4	1.2	2.7

* Based on projected 2008 population

^a<5 servings/day, ^b< 600 MET-minutes per week, ^c BMI ≥ 25 kg/m², ^d Waist girth: men ≥ 94 cm, women ≥ 80 cm,

^eBP $\geq 140/90$ mmHg or medication

Tobacco

Smoking is clearly a major threat for health; given that more than a quarter of the population is current smoker. A recent study conducted by WHO Bangladesh found that 41% of the eight killer diseases (heart attack, stroke, oral cancer, larynx cancer, lung cancer, Buerger's disease, tuberculosis and chronic obstructive pulmonary disease) are attributable to tobacco usage.¹⁹

Current survey findings are almost in line with recently completed GATS¹⁵ when the analysis was done for the same age group i.e. 25 years or above (Box 6). GATS was conducted in Bangladeshi people aged ≥ 15 years in 2009. However the current study is among people aged ≥ 25 years in 2010. Current findings are closer to the findings reported by WHO 2004 study¹⁹ also. Therefore our data suggest that tobacco consumption has reached a plateau. A declining trend is expected soon in Bangladesh.

Box 6: Comparison of GATS and NCD risk factor survey findings on current tobacco use for those aged 25 years or above*

	NCD RF 2010	GATS 2009
Smoker	26.2 (25.3, 27.1)	27.6 (26.1, 29.1)
Smokeless tobacco user	31.7 (30.7, 32.6)	35.7 (33.7, 37.8)
Tobacco user (any form)	51.0 (49.5, 52.5)	54.3 (52.3, 56.4)

* results are percentage (confidence interval)

Smoking in medical profession is notable in Bangladesh. Compared to 55% smoking in male adults in general population 33% male doctors of a tertiary level hospital smoke.²⁰ Absence of role model behaviour in medical profession is a matter of concern. However, this should be interpreted with caution because the doctor's study was reported in 1998. Unlike many other nations, it is notable in Bangladesh that the prevalence of smoking is very low among women (1.3%). In Bangladeshi society smoking among female is regarded impolite. Most women who smoked were mostly of low socioeconomic status or of very high society, which is actually very rare. The trend was persistent across rural and urban residents. Occasional smoking was very low, almost all the smokers actually smoked on daily basis. In men, age specific distribution of smoking prevalence was almost homogeneous. However increasing trend was evident in women with age. However this was a little low in participants above 65 years of age. This might be due to survival effect.

On an average smoking was generally being initiated in the late teenage years and women started smoking late compared to men. The alarming thing is that more than one third respondents initiated smoking at or before the age of 15 years. The major implication of such finding is that a large number of children can access tobacco during school age. These findings reflect the lack of regulation of cigarette or biri sales to minors. Strategies to lower the rates of smoking initiation during adolescence and efforts to promote smoking cessation are needed to lower the risk of disease among people who have adopted this behaviour.

The use of manufactured cigarette in survey population was around 80% in the youngest age and around half in the eldest age group. Type of tobacco has significantly been different across socioeconomic classes, manufactured and filtered cigarette were used by people of higher wealth quartile and biri was popularly used by low socioeconomic group and in rural area. Hukka is almost extinct but still popular to some rural elderly. Type of tobacco has significant implication on quality of exposure. For example biri tobacco is very crude and of low quality without any filter. Thromboangitis obliterans (Buerger's disease) has strongly been related to biri smoking in Bangladeshi population.²¹

Smokeless tobacco has not been emphasized for its harmful health effects. It is considered to have equal potential to impair health and can lead to scores of chronic diseases. Consumption of smokeless tobacco our population was 31.7%. Women were found to use more smokeless tobacco than men. Most smokeless tobacco users took it daily. Age stratified distribution showed a higher consumption among older age groups, however the trend was more apparent in women. Current smokeless tobacco use was more prevalent in rural areas compared to urban areas, particularly women used this form of tobacco more than men. Use of smokeless tobacco as a component of betel quid has a very high cultural acceptance in Bangladesh. Therefore culturally appropriate public awareness will be required. Considering serious health consequences of smokeless tobacco, relevant law should address it also.

Exposure to second hand smoke (SHS) is still very high in Bangladeshi people both at home and at workplaces. This is very unfortunate that more than 40% of the nonsmokers are exposed to second hand smoke even after five years of enactment of tobacco control law. Strict enforcement of smoke free provisions is essential. A very high level of public support in this regard should be used.²²

Fruit and vegetables

Diet and nutrition play a significant role in the prevention of many NCDs such as cardiovascular disease, diabetes, and many forms of cancer. It is suggested that diets high in saturated fat and salt, and low in fruit and vegetables are likely to be associated with the increased risk of heart disease, stroke, obesity and some cancers.²³ Strategies aimed at improving dietary habits therefore can play a key part in reducing early deaths from these diseases. 'Five-a-day' campaign is an important initiative adopted in England, the principal objective of the initiative is to increase consumption levels of a variety of different fruit and vegetables to at least five portions (400g) per day.²⁴ This is in accordance with dietary recommendations around the world, including those set out by the WHO.²⁵

Overall calorie intake at the population level in Bangladesh is not high but in certain affluent group excess energy intake is becoming evident. According to Bangladesh Bureau of Statistics²⁶ per capita energy intake in Bangladesh was 2 554 Kcal in 2000-2001, which is fairly good if the large gaps in the distribution could be minimized. Main problem is low intake fruit and vegetables by Bangladeshi population. While there is a steady increase in the per capita intake of rice, meat and fish from 1998 to 2001, intake of vegetables and fruit remained stable.²⁵ Bangladesh adults take fruit on average less than two days in a week. The survey findings underline a suboptimal intake of fruit by Bangladeshi population.

Number of days in a week with vegetables consumption is particularly high in Bangladeshi population, however the per capita daily consumption is found to be low (2.3 serving). Daily vegetables consumption should not be considered as a sign of health awareness among people of low income country like Bangladesh, rather it is poverty that incapacitates them to afford meat or fish and as a result they have to resort to low cost vegetables. Most people take vegetables as an adjunct to rice or other staple food. This explains why they don't take adequate amount of fruit or vegetables. If ≥ 5 servings of either fruit or vegetables consumption is considered adequate only 4.3% fell in to the category.

Dietary habits are often rooted in local and regional traditions. National strategies therefore need to be culturally appropriate and able to challenge cultural influence and to respond change over time. Promoting healthy diet requires a multi-sectoral approach. There is a need for close co-operation among health, agriculture and food industry sectors. Strategies for adoption of healthy diet include: marketing, advertising, sponsorship and promoting food products consistent with a healthy diet, fiscal policies that can influence price through taxation, subsidies or direct pricing encouraging healthy eating, development of dietary guidelines, education, communication for public awareness etc. Bangladesh should graduate in near future from "sweet" culture to "fruit" culture.

Physical activity

Low physical activity is considered as an important predictor of many chronic diseases, most notably heart disease, stroke, obesity, type 2 diabetes, some types of cancers, and osteoporosis²⁷. Beyond its role in the development of obesity, physical inactivity and associated poor cardio-respiratory fitness pose direct health risks²⁸. The global estimate for prevalence of physical inactivity among adults is 17%.²⁹ Our observed rate is 27%.

Current statistics on physical activity doesn't seem to be too alarming; however there are subgroups that are particularly at risk. Low physical activity is particularly more in women. In general women were found to be less active, particularly in urban area. In rural area while doing daily activity they have to do a lot of physical activity. However in the urban area mechanized work appliances limit most household activity. According to behavioral risk factor survey in 2006, around 57% of the rural and only 10 per cent of urban adults 'usually' had moderate physical activity.³⁰ However it was not a nationwide survey.

Leisure time physical activity is not popular in our population. Anecdotal evidence suggests that in Bangladesh, people in the rural area undergo fairly moderate physical activity because of their traditional lifestyle whereas in urban area it is very low. Unplanned urbanization is the major reason behind this difference. Collaboration with local governments (city corporations and municipalities) is necessary to promote physical activity.

Increasing physical activity in the population will require development of strategies that are suitable for various population segments and the establishment of partnerships between various sectors like, health, education, roads, planning, and transport etc. in order to ensure that these are effectively delivered. Removal of environmental barriers to physical activity will play an important enabling role which will complement strategies such as community-wide education and the development of recreation programmes. In a Muslim predominant community like Bangladesh, maintenance of physical activity for women is difficult. To some extent they remain restricted within the boundary of their households. In this regard an innovative strategy for uplifting physical activity of women, not conflicting with social and religious norms is required.

Alcohol

Consumption of alcohol is low in Bangladesh, due to sociocultural inhibition and the fact is reflected in the survey. The prevalence of current alcohol drinking is less than one per cent and only five per cent people ever tried alcohol in their life time. This is true across the wealth quartiles. Although the prevalence of alcohol consumption is low, the pattern of consumption among the current users suggests that 4% drink daily. Surprisingly two third of the current alcohol consumers are binge drinkers and almost all of them are men. On average current drinkers went binge more than four occasions in past one month.

A notable finding was that the average amount of alcohol consumed on each occasion by drinkers was very high. This pattern of binge drinking, which creates severe risks of injury and chronic health problems, needs to be addressed in alcohol misuse interventions. There are reports of illegal and informal production of alcohol. 'Tari' is a popular form of illegally brewed alcoholic drink in Bangladesh. Sometimes group alcohol poisoning are reported due to drinking of illegally produced alcoholic drink. Therefore significant measures on illegal production are needed. The prevalence of drinking among transport workers, such habit risks others' life too. The report of casualty by intoxicated drivers is not rare. Preventive measures are required to control accident related deaths and disabilities.

Obesity

Obesity is believed by a section of the society to be a positive attribute, an indicator of a person's good health and prosperity. Anecdotal evidence suggests that, in Bangladesh obesity is still not widely considered to be a health risk factor and in fact the converse, that losing weight is an indicator of

illness, is more likely to be believed. This indicates that raising public awareness about the harmful consequences of obesity is necessary in order to influence societal norms concerning body size. Prevention and management of obesity are major challenges, especially in developing countries, where obesity often coexists with underweight.³¹

a. Body mass index (BMI) (measure of generalized obesity)

According to survey data around one fourth of the population was underweight, 14% were overweight and four percent were obese based on BMI criteria. Proportion of both overweight and obese in women exceeds those in men, which may be a reflection of lower level of physical activity in women. No specific trend of obesity is apparent in the age distribution in either sex, however in both sexes obesity is found to be less prevalent in the older age groups. An important policy implication is that, the anthropologic background of inactivity of women in the Bangladesh population is worth investigating for shaping women's NCD risk reduction. Besides, use of the same cutoff for different ethnic group/populations warrants investigation. The cutoff used in the survey will need validation in future studies.

b. Waist circumference (measure of central obesity)

Waist circumference provides an indication about the central obesity and has been suggested to be a risk factor more specific to cardiovascular disease as visceral fat is considered as a predictor of morbidity and mortality. This alone provides similar information as waist-hip ratio. Like general obesity the central obesity was also more in women. Overall one in five had increased waist circumference. Recently waist circumference have been implicated with individual's propensity to develop NCDs. Higher prevalence of central and general adiposity in women indicates that women may be at a relatively increased risk of cardiovascular disease. This survey, therefore, identified large number of people with physical risk factors for NCDs that require immediate interventions and longer term monitoring as a priority measure in Bangladesh. It is noteworthy that central obesity is a special characteristic of south Asian population in general.³²

Blood pressure (BP)

Three in ten never measured their BP. In general women measured BP more than men. This might reflect a fact that women have the opportunity to measure BP during antenatal checkup. In urban area both men and women measured BP more than people in rural area. This is due to better availability of and accessibility to health care delivery system.

The overall prevalence of self reported hypertension is 12.5%. In the current survey prevalence of self reported hypertension is almost similar to previous studies. A population-based study done in the beginning of the decade found similar prevalence of hypertension (13%),³³ which was supportive to another population study in Bangladesh (12%).¹⁰ Recent studies done in rural community also suggested similar percentage.^{12, 13}

Hypertension is a disease of its own as well as a risk factor for other major disease such as stroke, coronary heart disease, heart failure and renal insufficiency. It is very common in Bangladeshi people but its detection and treatment status is far from adequate. We should have intensive programme for salt reduction because its consumption is very high in the country. Estimated per capita salt intake

based on salt production was 15.3 gm per day in 2001,³⁴ which is three times than a person requires for physiological functions of the body. This might be an important reason of high prevalence of hypertension in Bangladesh. A previous behavioural risk factor survey of NCDs in Bangladesh observed higher prevalence of table salt intake in both rural and urban areas. In rural area it was 92% and in urban area it was 46.3%.³⁰

Control of hypertension is essential for ensuring cardiac, cerebral and renal health. In this regard rational intake of prescribed antihypertensive drug, where indicated, is mandatory. In our population only half of the hypertensive subjects used antihypertensive drugs. To ensure wider coverage of treatment primary health care approach needs to be used to ensure adequate detection and treatment.

Around 14.8% of the survey population was diagnosed to have hypertension ($\geq 140/90$ mmHg) on measurement. Inclusion of those on medication increased the prevalence to 17.9%. Prevalence of hypertension increased with age irrespective of whether patient is on medication or not and the trend is persistent across sexes. A population based study¹² in rural Bangladesh conducted to see the prevalence of ischaemic heart disease observed similar prevalence (18.6%) of hypertension. Upon measurement 5.5% were found to have stage II hypertension ($\geq 160/100$ mmHg).³⁵ This warrants an aggressive detection and treatment at primary care level to save huge people from risk of ill consequences of hypertension.

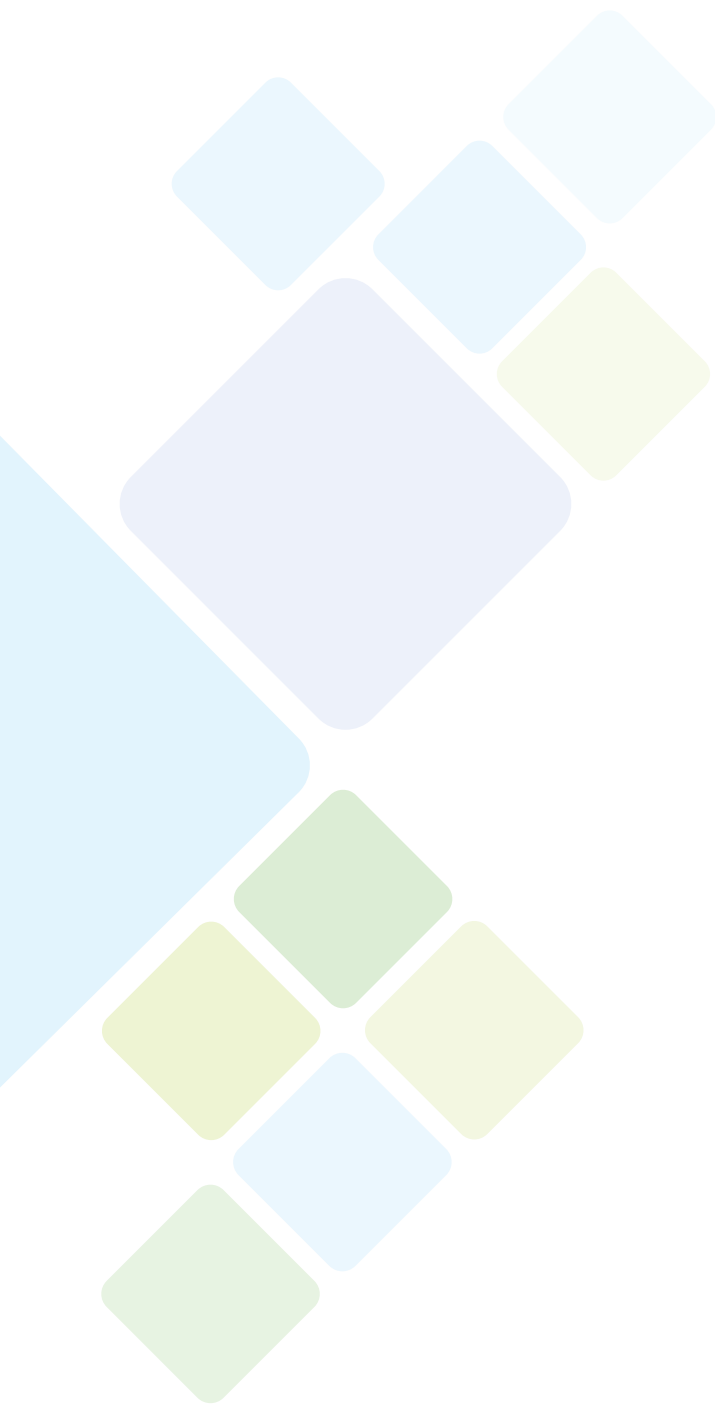
Diabetes

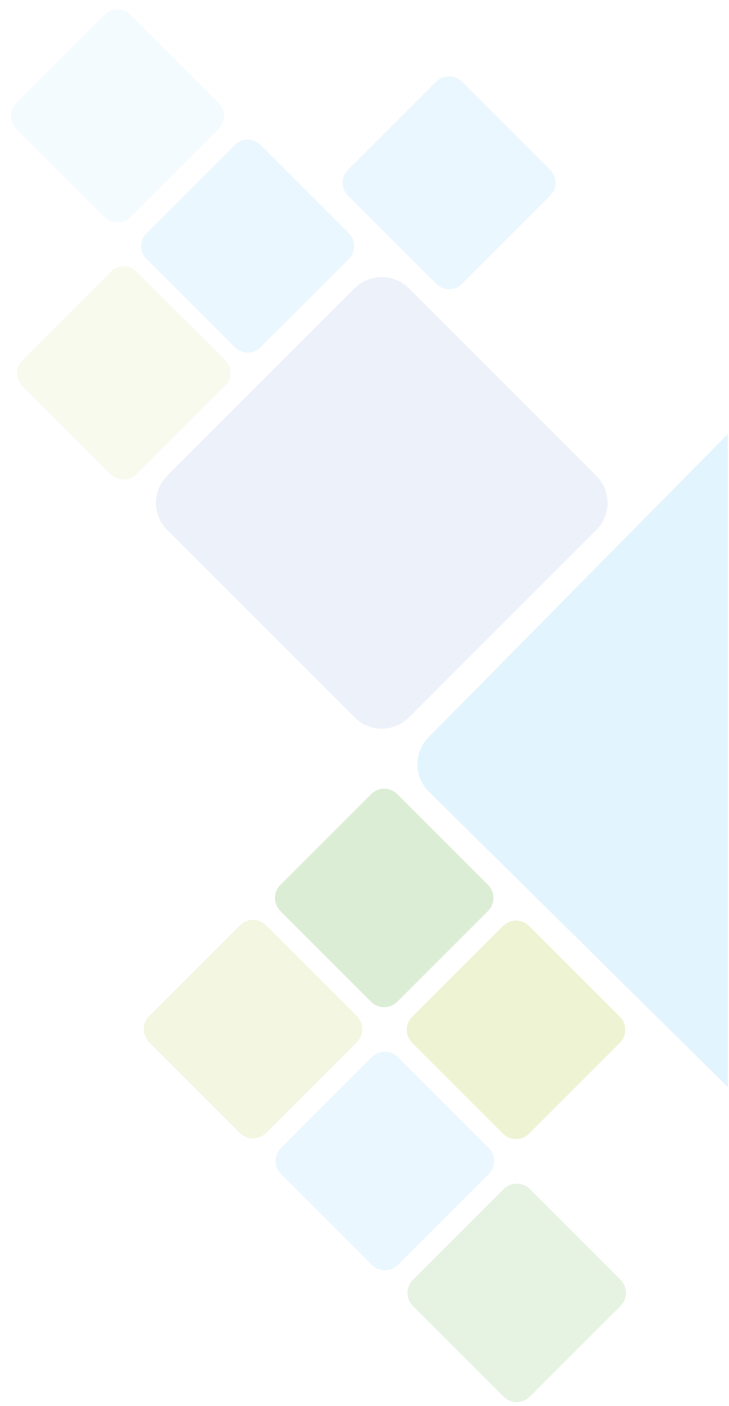
People here usually do not measure blood glucose level. Eighty three per cent of the survey population never measured their blood glucose. Considering the prevalence of diabetes among those who measured blood glucose was 3.9%. In men the percentage is slightly high. Population data in Bangladesh indicate an increasing trend in diabetes prevalence especially in urban areas. A higher prevalence of diabetes mellitus in the urban population was also observed compared with rural subjects by another population-based study.³⁶ As mentioned earlier, current study did not use blood glucose measurement. Addition of blood glucose data definitely would yield a higher prevalence of diabetes. There are lines of evidences that the prevalence of diabetes is rising in Bangladesh.³⁷ Possible explanation for this is the prevalence of recent sudden change in lifestyle. Behavioral risk factor survey reported 5% prevalence of diabetes in rural area.³⁰ In urban area the prevalence is just double (10%).³⁸ This could reflect the effect of unplanned urbanization that lacks in environment for physical activity, consumption of junk food and exposure to stressful life in cities. Therefore diabetes and cardiovascular disease prevention initiative in general should be developed in partnership with local governments for adopting healthy lifestyle friendly settings or environment for both men and women.

Clustering of risk factor

Risk factors of NCDs appear in clusters and a person may have several risk factors for single NCD or a single risk factor may actually result in several diseases. Presence of one risk factor in turn increases the likelihood of having other risk factors, showing a cluster phenomenon. The proportion of subjects with 3 or more risk factors increases along with higher economic quartiles. One study done in five Asian countries (Bangladesh, India, Indonesia, Thailand and Vietnam) reported high percentage of people with ≥ 3 NCD risk factors in rural population.³⁹ An Indian study reported similar

gradient in urban Indian population. Similar clustering of risk factors leading to metabolic syndrome have been reported from Bangladeshi clinic-based⁴¹ and community-based samples⁴² as well. This clustering issue in South Asian population needs extensive study for proper planning of NCD prevention at first hand.

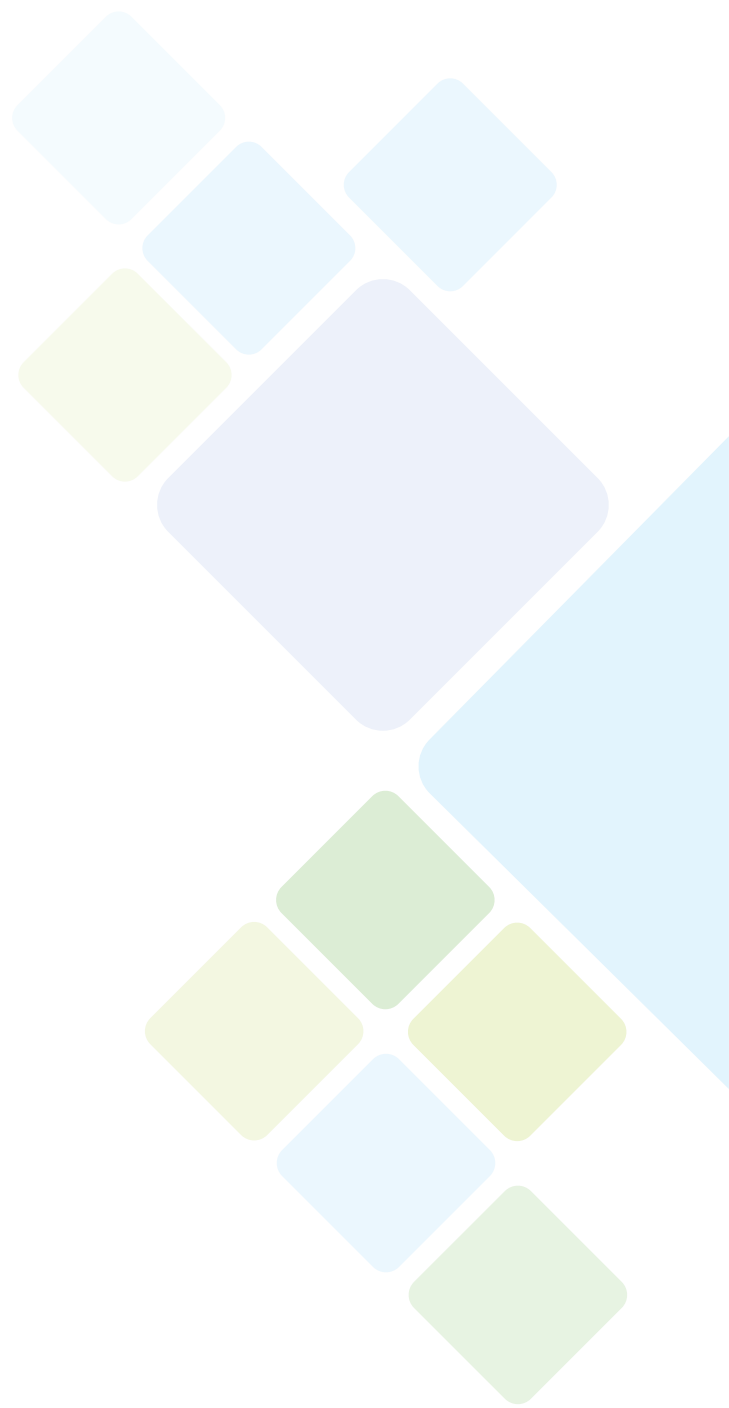




6. POLICY RECOMMENDATIONS

This first ever nationally representative survey in Bangladesh provides essential information on key indicators of NCD risk factors and creates an opportunity for policy makers, programme managers, and researchers to adopt interventions. Inadequate intake of fruit and vegetables, use of tobacco, low level of physical activity (specially in women), binge drinking among current drinkers, obesity (especially abdominal), high blood pressure and diabetes mellitus are fairly common in adults. Almost all adults (98.7%) have at least one risk factor and substantial proportion of people have two or more risk factors. Based on these findings, the specific recommendations are:

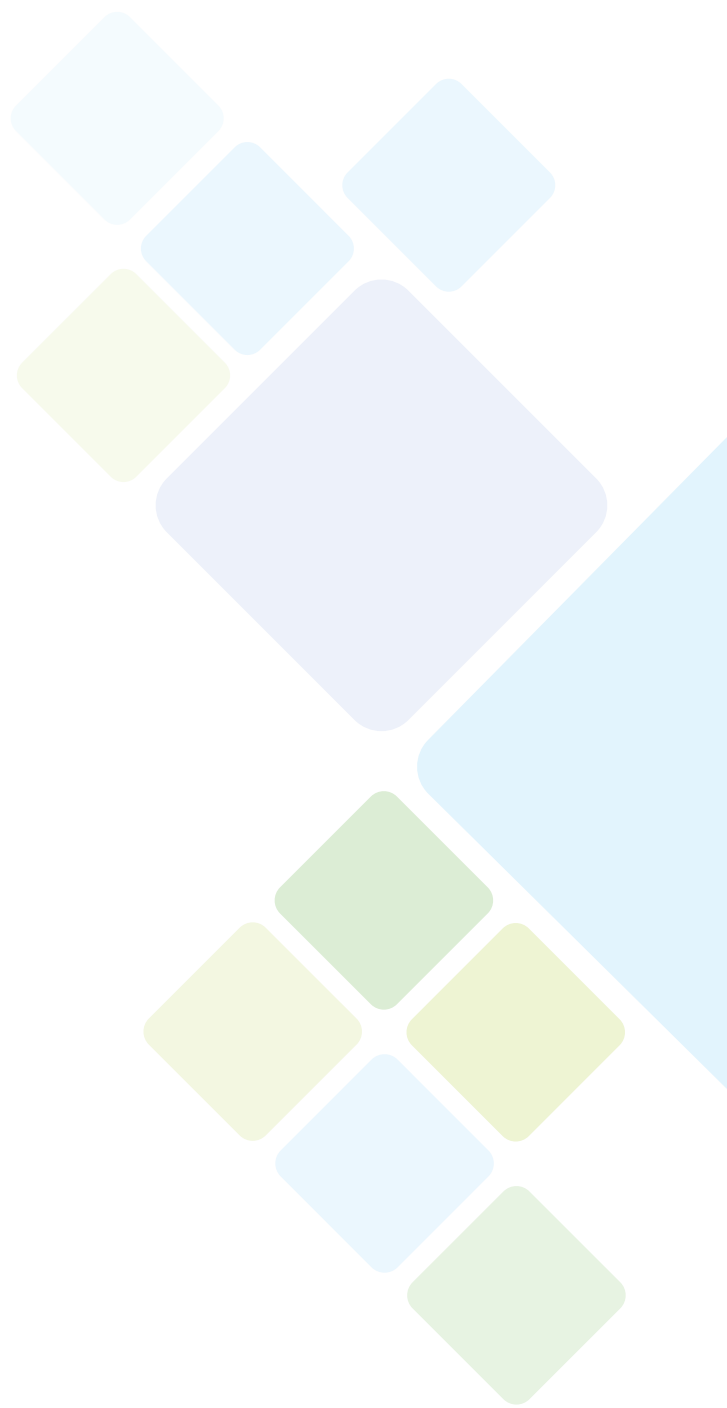
1. Population based approach using primary health care system for NCD prevention is warranted. Mass awareness through campaigns and school curricula is necessary.
2. Tobacco consumption is high even after five years of having a Tobacco Control Act. Adequate enforcement of the Act is necessary. Necessary amendment of the Act is also required to close all the loop holes in the tobacco control programme.
3. Strategies to promote accessibility and availability of fruit and vegetables round the year for all people should be formulated and implemented.
4. Appropriate measures should be undertaken, with emphasis on leisure time physical activity, to promote empowering environment for physical activity.
5. A large proportion of people do not measure blood pressure or blood glucose and, hence large proportion of hypertension and diabetes remain undetected. Primary health care system should be reoriented towards early detection and treatment of these common ailments.
6. Because there is hardly any nationally representative data on NCD risk factors, national surveys on health should consider inclusion of NCD risk factors.



7. ACKNOWLEDGEMENTS

The support, suggestions comments, and guidance, as applicable, provided by the following persons are duly appreciated and acknowledged.

- A. Quality control team:
- Professor Shah Monir Hossain
 - Professor M A Faiz
 - Dr Umar Khyyam
 - Professor Dr Khondhaker Md. Shefayetullah
 - Professor ABM Muksudul Alam
 - Mr Raisul Alam Mondal
 - Dr Md Humayun Kabir
 - Dr AKM Jafar Ullah
 - Dr M Mostafa Zaman
- B. Sampling frame for the survey:
- Bangladesh Bureau of Statistics
- C. Survey office in Dhaka:
- Professor ABM Muksudul Alam
 - Principal, Shaheed Suhrawardy Medical College
 - Dr A. K. M. Muzibur Rahman
 - Director, Shaheed Suhrawardy Medical College Hospital
- D. Training of the field worker:
- Dr Sohel Reza Choudhury, NHF
- E. Accommodation for the field team:
- Civil Surgeons and UHFPOs of 62 districts and NIPORT
- F. Technical reviewers of the report:
- Professor Hajera Mahtab, BIRDEM
 - Professor Mahmudur Rahman, IEDCR
 - Professor Louis Wilhelmus Niessen, ICDDR,B
 - Dr Jerzy Leowski, WHO, SEARO
 - Dr Samira Asma, CDC, USA
 - Dr Krishna Mohan Palipudi, CDC, USA
 - Professor Dr Abul Kalam Azad, MIS, DGHS
 - Dr Sohel Reza Choudhury, NHF
 - Mr Md Ahsanul Alam, NIPORT
 - Dr AKM Jafar Ullah, DGHS
 - Dr Leanne Margaret Riley, WHO, HQs

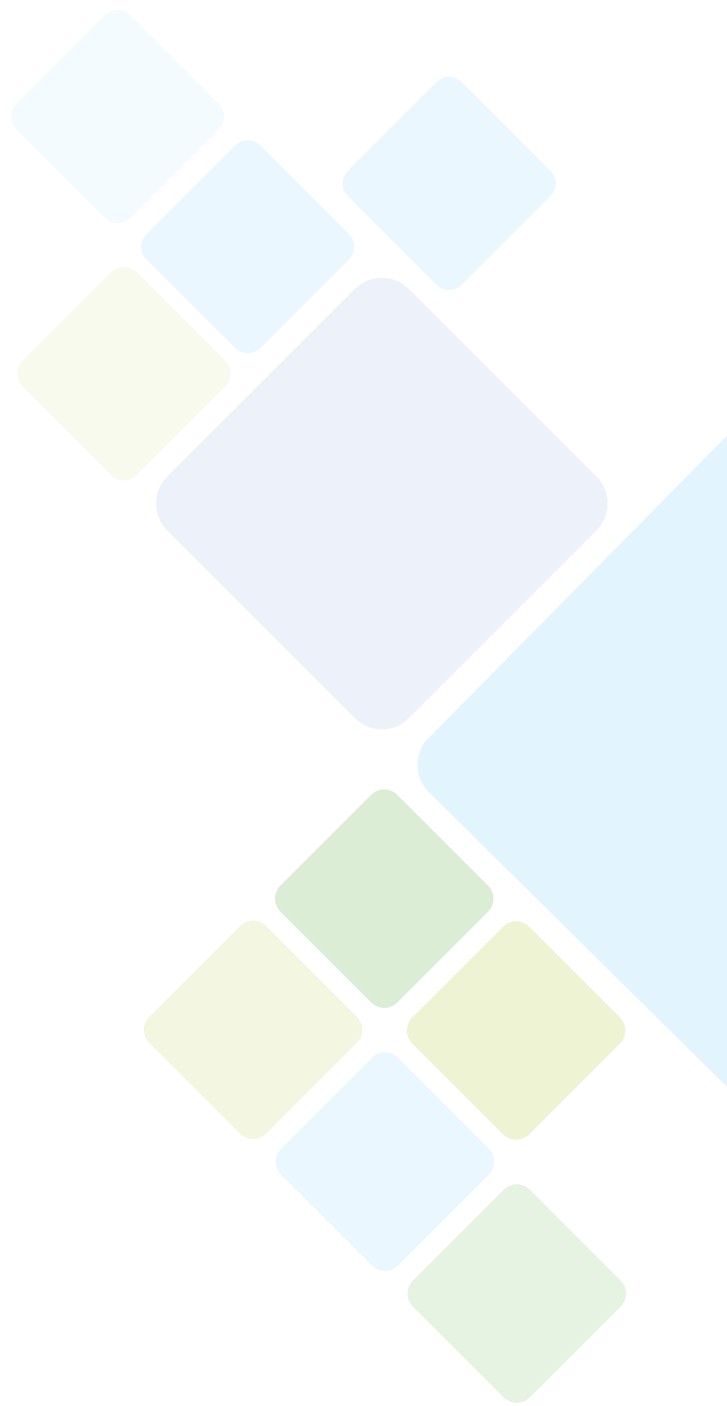


8. REFERENCES

1. World Health Organization. Global status report on noncommunicable diseases 2010. WHO Geneva 2011.
2. World Health Organization. WHO NCD Surveillance Strategy. Available at http://www.who.int/ncd_surveillance/strategy/en/print.html. accessed on 22 Oct 2010
3. Reddy KS, Shah B, Varghese C, Ramadoss A. Responding to the threat of chronic diseases in India. *Lancet* 2005;366:1744-49.
4. World Health Organization. World Health Report 2002: Reducing risks, promoting healthy life. WHO Geneva 2003.
5. World Health Organization. Preventing chronic diseases: a vital investment, WHO Geneva 2005.
6. World Health Organization. Mongolian STEPS Survey on the prevalence of noncommunicable disease risk factors 2006. WHO Geneva 2007.
7. Karar ZA, Alam N, Streatfield PK. Epidemiological transition in rural Bangladesh, 1986-2006. *Global Health Action*, North America 2009; 2. Available at <http://www.globalhealthaction.net/index.php/gha/article/view/1904> accessed on 29 Jan 2011
8. World Health Organization. Health profile of Bangladesh. WHO Bangladesh 2003. Available at http://www.whoban.org/country_health_profile.html accessed on 22 Oct 2010.
9. Magnus P, Beaglehole R. The real contribution of the major risk factors to the coronary epidemics: time to end the "only-50%" myth. *Arch Intern Med* 2001;161:257-60.
10. Zaman MM, Rouf MA. Prevalence of hypertension in a Bangladeshi adult population. *J Hum Hypertens* 1999;13:547-49.
11. Islam N, Islam MN, Khanam K. Smoking habit among Bangladesh secretariat staff. *Bangladesh Med Res Counc Bull* 1990;16:62-69.
12. Zaman MM, Ahmed J, Chowdhury SR, Numan SM, Parvin K, Islam MS. Prevalence of ischemic heart disease in a rural population of Bangladesh. *Indian Heart Journal* 2007;59:239-41.
13. Karim MN, Hossain M, Faruquee MH, Chaklader MA, Yasmin N. Prevalence of non communicable diseases in rural Bangladesh. *State University of Bangladesh Journal of Public Health* 2010;2:32-42.
14. Bonita R, de Courten M, Dwyer T, Jamrozik K, Winkelmann R. Surveillance of risk factors for noncommunicable diseases: The WHO STEPwise approach summary. WHO Geneva 2001.
15. World Health Organization. Global adult tobacco survey, Bangladesh report 2009. WHO Dhaka 2009.
16. Global Tobacco Surveillance System, Global adult tobacco survey. Programmer's guide to general survey system 2009.
17. Zaman MM, Yoshike N. Video-Instruction for blood pressure measurement. *Regional Health Forum* 2003;7:63-65.
18. Rutstein, SO, Johnson K. The DHS Wealth Index. DHS comparative reports No. 6. Calverton, Maryland: ORC Macro 2004.

19. Zaman MM, Nargis N, Perucic AM, Rahman K (editors). Impact of tobacco-related illnesses in Bangladesh. SEARO, WHO, New Delhi 2007.
20. Azad KAK, Chowdhury MAJ, Saha AK, Patwary MI & Rafiquddin AKM. Doctors as smoker. Bangladesh J Medicine 1998;9:44-46.
21. Rahman M, Chowdhury AS, Fukui T, Hira K, Shimbo T. Association of thromboangiitis obliterans with cigarette and bidi smoking in Bangladesh: a case-control study. International Journal of Epidemiology, 2000;29:266-70.
22. Palipudi KM, Sinha DN, Choudhury S, Zaman MM, Andes L, Asma S. Exposure to tobacco smoke among adults in Bangladesh. Indian Journal of Public Health, 2011;55:210-19.
23. Department of Health, UK. Nutritional aspects of cardiovascular disease. HMSO. London 1994.
24. National health archive UK. The school fruit and vegetable scheme, 5-A-DAY programme. available at: <http://www.dh.gov.uk/PolicyAndGuidance/HealthSocialCareTopics/FiveADay/fs/en> Accessed on 22 Oct 2010.
25. World Health Organization. Diet, nutrition and the prevention of chronic diseases: Report of a joint WHO/FAO expert consultation. WHO technical report series 916. Geneva 2003.
26. Bangladesh Bureau of Statistics. Ministry of Planning. Government of Bangladesh. Health and demographic survey. Dhaka 2002.
27. Chakravarthy MV, Joyner MJ, Booth FW. An obligation for primary care physicians to prescribe physical activity to sedentary patients to reduce the risk of chronic health conditions. Mayo clinic proceedings, 2002;77:165-73.
28. Stevens J, Evenson KR, Thomas O, Cai J, Thomas R. Associations of fitness and fatness with mortality in Russian and American men in the lipids research clinics study. International Journal of Obesity Related Metabolic Disorder 2004;28:1463-70.
29. Mathers CD, Loncar D. Projection of global mortality and burden of disease from 2002 to 2030. Plos medicine, 2006;3:e442.
30. Rahman M, Rahman M, Flora MS, Akhtar SFU, Hossain S. Behavioral risk factors of non communicable diseases in Bangladesh report 2006.
31. World Health Organization. Obesity: preventing and managing the global epidemic. Report on a WHO consultation. WHO technical report series 894. WHO Geneva 2000.
32. Yajnik CS, Yudkin JS. The Y-Y paradox. Lancet. 2004;363:163.
33. Zaman MM, Yoshiike N, Rouf MA, Syeed MH, Khan RH, Haque S, Mahtab H, Tanaka H. Cardiovascular risk factors: distribution and prevalence in a rural population of Bangladesh. Journal of Cardiovascular Risk 2001;8:103-08.
34. Nishtar S. Preventing coronary heart disease in south Asia. SAARC cardiac society guideline and recommendations. SAARC cardiac society heartfile. Islamabad 2002.

35. Chobanian AV, Barkis GL, Black HR, Cushman WC, Green LA, Izzo JL. Seventh report of the joint national committee on prevention detection evaluation and treatment of high blood pressure. *Hypertension* 2003;42:1206-52.
36. Hussain A, Rahim MA, Azad Khan AK, Ali SM, Vaaler S. Type 2 diabetes in rural and urban population: diverse prevalence and associated risk factors in Bangladesh. *Diabetic Medicine* 2005;22:931-36.
37. Rahim MA, Akhtar H, Khan AKA, Sayeed MA, Ali SMK, Vaaler S. Rising prevalence of type 2 diabetes in rural Bangladesh: A population based study. *Diabetes research and clinical practice* 2007;77:300-05.
38. Sayeed MA, Banu A, Khanam PA, Mahtab H and Azad Khan AK. Prevalence of hypertension in Bangladesh: effect of socioeconomic risk on difference between rural and urban community. *Bangladesh Medical Research Council Bulletin* 2002;28:07-18.
39. Ahmed SM, Hadi A, Razzaque Abdur, Ashraf A, Juvekar S, Ng N, Uraiwan K, Soonthornthada K, Minh HV, Bich TH. Clustering of chronic non-communicable disease risk factors among selected Asian populations: levels and determinants. *Global Health Action* 2009;2:68-75.
40. Reddy KS, Prabhakaran D, Jeemon P, Thankappan KR, Joshi P, Chaturvedi V, Ramakrishnan L, Ahmed F. Educational status and cardiovascular risk profile in Indians. *Proceedings of National Academy of Science of the USA* 2007;104:16263-68.
41. Siddique MA, Sultan MAU, Haque S, Zaman MM, Ahmed CM, Rahim MA and Salman M. Clustering of metabolic factors among the patients with essential hypertension. *Bangladesh Medical Research Council Bulletin* 2008;34:71-75.
42. Zaman MM, Ahmed J, Choudhury SR, Numan SM, Islam MS, Parvin K. Prevalence of metabolic syndrome in rural Bangladesh women. *Diabetes care* 2006;29:1456-57.



9. APPENDICES

Appendix A

List of Project Staff

Senior Research Physician

Dr Mahfuzur Rahman Bhuiyan

Research Physicians

Dr Sheikh Mohammad Mahbubus Sobhan

Dr Abdullah Al Mamun

Dr Eusha Ahmed Fidalillah Ansary

Dr Abdullah Al Imran

Dr Md. Ahad Bakas

Dr Aftab Rassel

Dr Tapas Kanti Majumder

Dr Debashish Roy

Dr Ziaul Islam Chowdhury

IT Specialists

A. B. M. Kamruzzaman

Md. Hasanuzzaman Khan

Male Interviewers

Md. Mahfuzur Rahman

Md. Mizanur Rahman

Iqbal Hossain

Shariful Islam

Md. Zahidul Haque

Aftabuddin

Md. Kamal Hossain

Md. Atiqur Rahman

Omar Faruq Sarkar

Md. Khorshed Alam Bhuiyan

Md. Abdur Rab Sardar

Md. Obaidul Haque

Md. Alauddin Choudhury

Subas Broto Chakma

Ataur Rahman Masud

ANM Khairul Bashar

Shah Md. Mamun Hossain

AKM Rajibul Amin

Female Interviewers

Tahmina Ferdows

Mahmuda Begum

Afroza Khatun Sheuly

Marjina Khanam

Monjura Parveen

Mahbuba Khatun

Arfia Naz

Mukta Roy

Dilara Islam

Nazmoon Nahar

Shamim Ara

Shilpy Akter

Shamima Sultana

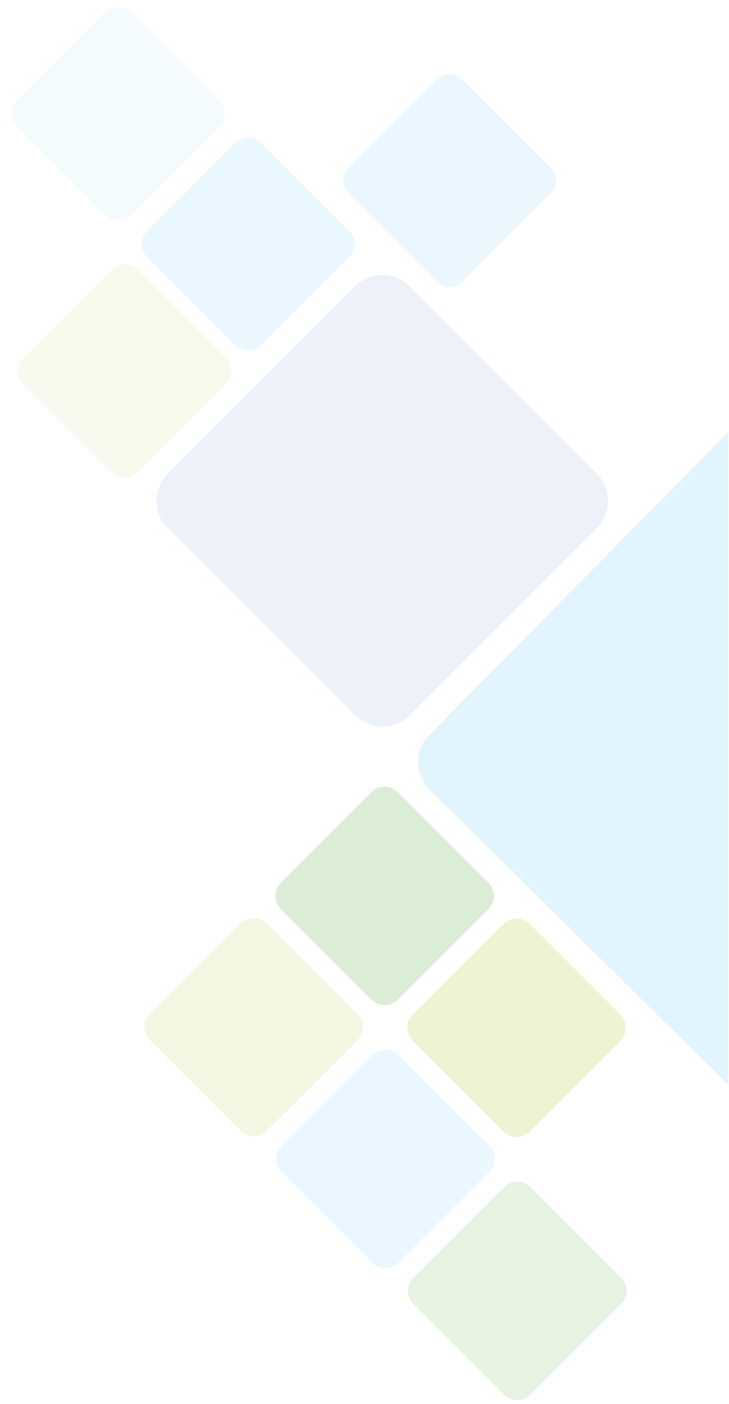
Farhana Khan

Nasima Akter

Asma Akter

Kafura Alam

Syeda Afroza Sultana



National Survey on NCD Risk Factors Bangladesh

Bangladesh Society of Medicine,
Directorate General of Health Services and World Health Organization, Bangladesh

Survey Information

Location and Date		Response	Code
1	PSU ID	<input type="text"/>	I1
2	PSU name	<input type="text"/>	I2
3	Interviewer ID	<input type="text"/>	I3
4	Date of completion of the questionnaire	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> dd mm year	I4

Participant Id Number <input type="text"/>			
Consent, Interview Language and Name		Response	Code
5	Whether Consent has been obtained?	Yes 1 No 2 if NO, END	I5
6	Interview Language	English 1 Bangla 2	I6
7	Time of interview (24 hour clock)	<input type="text"/> : <input type="text"/> hrs mins	I7
8	Name of Interviewee	<input type="text"/>	I8
Additional Information that may be helpful			
10	Telephone/Mobile number	<input type="text"/>	I10

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

Participant Identification Number

Household Information

Time of Household interview
(24 hour clock)

:
Hour Minute

[For Interviewer: The household screening respondent must be 18 years of age or older and you must be confident that this person can provide accurate information about all members of the household]

[if needed, verify the age of the household screening respondent to make sure He/she is 18 years of age or older]

Introduction: National Survey on Non Communicable Diseases Risk Factors is an important survey being conducted by the Ministry of Health and Family Welfare throughout Bangladesh and your household has been selected to participate. All houses selected were chosen from a scientific sample and it is very important to the success of this project that each participates in the survey. All information gathered will be kept strictly confidential. I have a few questions to find out who in your household is eligible to participate.

HH1. First, I'd like to ask you a few questions about your household. In total, how many persons live in this household, anyone who considers this household their primary place of residence last night?

Persons

HH2. How many of these household members are 25 years of age or older?

Persons

HH3. How many (male/female) household members are 25 years of age or older?

Persons

HH4. I now would like to collect information about the (males/females) that live in this household who are 15 years of age or older. Let's start listing the (males/females) from oldest to youngest.

[Ask the following questions and record answers in table below]

- What is this person's full name?
- What is this person's age? [If respondent doesn't know, probe for an estimate]
- Record gender

Participant Identification Number

		<input type="text"/> <input type="text"/>		
	a. Name	b. Age	c. Gender	
			Male	Female
1	<input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> 1	<input type="text"/> 2
2	<input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> 1	<input type="text"/> 2
3	<input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> 1	<input type="text"/> 2
4	<input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> 1	<input type="text"/> 2
5	<input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> 1	<input type="text"/> 2
6	<input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> 1	<input type="text"/> 2
7	<input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> 1	<input type="text"/> 2
8	<input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> 1	<input type="text"/> 2
9	<input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> 1	<input type="text"/> 2
10	<input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> 1	<input type="text"/> 2

HH5. Household roster number of the selected eligible (male/female)

HH6. Fill in questionnaire ID number

Questionnaire ID number: _____ - _____

Participant Identification Number

Step 1 Demographic Information

CORE: Demographic Information			
Question		Response	Code
11	Sex	Male 1 Female 2	C1
12	What is your date of birth? (Don't Know 77 77 7777)	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> if known, Go to C4 dd mm year	C2
13	How old are you?	Years <input type="text"/> <input type="text"/> <input type="text"/>	C3
14	In total, how many years have you spent at school or in full-time study (excluding less than Class 1 and pre-school)?	Years <input type="text"/> <input type="text"/>	C4

EXPANDED: Demographic Information			
15	What is the highest level of education you have completed?	No formal schooling 1 Less than primary school 2 Primary school completed 3 Secondary school completed 4 Higher Secondary school completed 5 College/University completed 6 Post graduate degree completed 7 Refused 88	C5
16	What is your religion ?	Islam 1 Hinduism 2 Christianity 3 Buddhism 4 Others 5 Refused 88	C6
17	What is your marital status ?	Never married 1 Currently married 2 Separated 3 Divorced 4 Widowed 5 Refused 88	C7

Participant Identification Number

EXPANDED: Demographic Information			
18	Which of the following best describes your main work status over the past 12 months?	Government employee 1 Non-government employee 2 Business (small) 3 Business (large) 4 Farming (Land owner & farmer) 5 Agricultural worker 6 Industrial worker 7 Daily laborer 8 Other self-employed 9 Student 10 Homemaker/ Housework 11 Retired 12 Unemployed, able to work 13 Unemployed, unable to work 14 Other (specify) 15 Refused 88	C8

Note: Question 19 of STEPs questionnaire is dropped.

Participant Identification Number

EXPANDED: Demographic Information, Continued			
Question	Response		Code
20 Please tell me whether this household or any person who lives in the household has the following items:			
a. [Electricity?]	yes 1 no 2 <input type="checkbox"/> Don't know 77 Refused 88		C10a
b. [Flush toilet?]	yes 1 no 2 <input type="checkbox"/> Don't know 77 Refused 88		C10b
c. [Land phone?]	yes 1 no 2 <input type="checkbox"/> Don't know 77 Refused 88		C10c
d. [Mobile?]	yes 1 no 2 <input type="checkbox"/> Don't know 77 Refused 88		C10d
e. [Television?]	yes 1 no 2 <input type="checkbox"/> Don't know 77 Refused 88		C10e
f. [Radio?]	yes 1 no 2 <input type="checkbox"/> Don't know 77 Refused 88		C10f
g. [Refrigerator?]	yes 1 no 2 <input type="checkbox"/> Don't know 77 Refused 88		C10g
h. [Private car?]	yes 1 no 2 <input type="checkbox"/> Don't know 77 Refused 88		C10h
i. [Motor cycle?]	yes 1 no 2 <input type="checkbox"/> Don't know 77 Refused 88		C10i
j. [Washing machine?]	yes 1 no 2 <input type="checkbox"/> Don't know 77 Refused 88		C10j
k. [Bicycle?]	yes 1 no 2 <input type="checkbox"/> Don't know 77 Refused 88		C10k

Participant Identification Number

	l. [Sewing machine?]	yes 1 no 2 Don't know 77 Refused 88	<input type="text"/>	C10l
	m.[Almirah/ wardrobe?]	yes 1 no 2 Don't know 77 Refused 88	<input type="text"/>	C10m
	n. [Table?]	yes 1 no 2 Don't know 77 Refused 88	<input type="text"/>	C10n
	o. [Bed or cot?]	yes 1 no 2 Don't know 77 Refused 88	<input type="text"/>	C10o
	p. [Chair or Bench?]	yes 1 no 2 Don't know 77 Refused 88	<input type="text"/>	C10p
	q. [Watch or Clock?]	yes 1 no 2 Don't know 77 Refused 88	<input type="text"/>	C10q
21	a. What is the main material of the roof of main house? (record observation) Katcha (bamboo/straw)..... 1 Tin.....2 Cement/concrete/tiles.....3 Other.....4 Don't know/can't tell77		<input type="text"/>	C11a
	b. What is the main material of the wall of main house? (record observation) Jute stick/bamboo/clay..... 1 Wood.....2 Brick/Cement.....3 Tin.....4 Other.....5 Don't know.....77		<input type="text"/>	C11b
	c. What is the main material of the floor of main house? (record observation) Soil/bamboo/clay..... 1 wood.....2 Cement/concrete.....3 Other.....4 Don't know.....77		<input type="text"/>	C11c

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
22 Do you currently smoke any tobacco products , such as cigarettes, cigars or pipes? (USE SHOWCARD)	Yes 1 <input type="checkbox"/>	No 2 <i>If No, go to T6</i>	T1
23 Do you currently smoke tobacco products daily ?	Yes 1 <input type="checkbox"/>	No 2 <i>If No, go to T6</i>	T2
24 How old were you when you first started smoking daily?	Age (years) Don't know 77 <input type="text"/> <i>If Known, go to T5a</i>		T3
25 Do you remember how long ago it was? (RECORD ONLY 1, NOT ALL 3) Don't know 77	In Years <input type="text"/> <i>If Known, go to T5a</i>		T4a
	OR in Months <input type="text"/> <i>If Known, go to T5a</i>		T4b
	OR in Weeks <input type="text"/>		T4c
26 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="text"/>		T5a
	Biris <input type="text"/>		T5b
	Hukkah/Dhaba <input type="text"/>		T5c
	Pipes full of tobacco <input type="text"/>		T5d
	Hand-rolled cigarettes <input type="text"/>		T5e
	Cigars, cheroots, cigarillos <input type="text"/>		T5f
	Other (If Other, go to T5 other, else go to T9) <input type="text"/>		T5g
	Other (please specify and go to T9): <input type="text"/>		T5 other

Participant Identification Number

EXPANDED: Tobacco Use			
Question	Response	Code	
27	In the past, did you ever smoke daily ?	Yes 1 No 2 <i>If No, go to T9</i>	T6
28	How old were you when you stopped smoking daily ?	Age (years) Don't know 77 <input type="text"/> <input type="text"/> <i>If Known, go to T9</i>	T7
29	How long ago did you stop smoking daily? (RECORD ONLY 1, NOT ALL 3) Don't Know 77	Years ago <input type="text"/> <input type="text"/> <i>If Known, go to T9</i>	T8a
		OR Months ago <input type="text"/> <input type="text"/> <i>If Known, go to T9</i>	T8b
		OR Weeks ago <input type="text"/> <input type="text"/>	T8c
30	Do you currently use any smokeless tobacco such as zarda, sadapata, gul, snuff? (USE SHOWCARD)	Yes 1 No 2 <i>If No, go to T12</i>	T9
31	Do you currently use smokeless tobacco products such as zarda, sadapata, gul, snuff daily ?	Yes 1 No 2 <i>If No, go to T12</i>	T10
32	On average, how many times a day do you use (RECORD FOR EACH TYPE, USE SHOWCARD) Don't Know 77	Snuff, by mouth <input type="text"/> <input type="text"/>	T11a
		Snuff, by nose <input type="text"/> <input type="text"/>	T11b
		Chewing tobacco <input type="text"/> <input type="text"/>	T11c
		Betel, quid <input type="text"/> <input type="text"/>	T11d
		Other <input type="text"/> <input type="text"/> <i>If Other, go to T11 other, else go to T13</i>	T11e
		Other (specify) <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <i>Go to T13</i>	T11other
33	In the past , did you ever use smokeless tobacco such as zarda, sadapata, gul, snuff daily ?	Yes 1 No 2	T12
34	During the past 7 days, on how many days did someone in your home smoke when you were present?	Number of days Don't know 77 <input type="text"/> <input type="text"/>	T13
35	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 Don't know or don't work in a closed area 77 <input type="text"/> <input type="text"/>	T14

Participant Identification Number

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 local wine, beer, wine, spirit?	Yes 1 No 2 <i>If No, go to D1</i>	A1a
37	Have you consumed an alcoholic drink within the past 12 months ?	Yes 1 No 2 <i>If No, go to D1</i>	A1b
38	During the past 12 months, how frequently have you had at least one alcoholic drink? (<i>READ RESPONSES, USE SHOWCARD</i>)	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	A2
39	Have you consumed an alcoholic drink within the past 30 days ?	Yes 1 No 2 <i>If No, go to D1</i>	A3
40	During the past 30 days, on how many occasions did you have at least one alcoholic drink?	Number <input type="text"/> <input type="text"/> Don't know 77	A4
41	During the past 30 days, when you drank alcohol, on average , how many standard alcoholic drinks did you have during one drinking occasion? (<i>USE SHOWCARD</i>)	Number <input type="text"/> <input type="text"/> Don't know 77	A5
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 <input type="text"/> <input type="text"/> Don't Know 77	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 <input type="text"/> <input type="text"/> Don't Know 77	A7

Note: Question 44 & 45 of STEPs questionnaire are dropped.

Participant Identification Number

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	
46 In a typical week, on how many days do you eat fruit ? (USE SHOWCARD)	Number of days <input type="text"/> <input type="text"/> If Zero days, go to D3 Don't Know 77	D1	
47 How many servings of fruit do you eat on one of those days? (USE SHOWCARD)	Number of servings <input type="text"/> <input type="text"/> Don't Know 77	D2	
48 In a typical week, on how many days do you eat vegetables ? (USE SHOWCARD)	Number of days <input type="text"/> <input type="text"/> If Zero days, go to D5 Don't Know 77	D3	
49 How many servings of vegetables do you eat on one of those days? (USE SHOWCARD)	Number of servings <input type="text"/> <input type="text"/> Don't know 77	D4	

EXPANDED: Diet			
50	What type of oil or fat is most often used for meal preparation in your household? (USE SHOWCARD) (SELECT ONLY ONE)	Vegetable oil 1 Lard 2 Butter or ghee 3 Palm oil 4 other 5 If Other, go to D5 other None in particular 6 None used 7 Sunflower oil 8 Mustard oil 9 Dalda 10 Don't know 77	D5
		Other (Specify) <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	D5other
51	On average, how many meals per week do you eat that were not prepared at home? By meal, I mean breakfast, lunch and dinner.	Number <input type="text"/> <input type="text"/> Don't know 77	D6

Participant Identification Number

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. 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		
52	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, harvesting for at least 10 minutes continuously?	<div>Yes 1</div> <div>No 2 If No, go to P4</div> <div>P1</div>
53	In a typical week, on how many days do you do vigorous-intensity activities as part of your work?	<div>Number of days <input type="text"/></div> <div>P2</div>
54	How much time do you spend doing vigorous-intensity activities at work on a typical day?	<div>Hours : minutes <input type="text"/> : <input type="text"/></div> <div>hrs mins</div> <div>P3 (a-b)</div>
Now I would like to ask you about the time you spend doing moderate-intensity activity		
55	Does your work involve moderate-intensity activity that causes small increases in breathing or heart rate such as brisk walking or carrying light loads for at least 10 minutes continuously? (USE SHOWCARD)	<div>Yes 1</div> <div>No 2 If No, go to P7</div> <div>P4</div>
56	In a typical week, on how many days do you do moderate-intensity activities as part of your work?	<div>Number of days <input type="text"/></div> <div>P5</div>
57	How much time do you spend doing moderate-intensity activities at work on a typical day?	<div>Hours : minutes <input type="text"/> : <input type="text"/></div> <div>hrs mins</div> <div>P6 (a-b)</div>
Travel to and from places		
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.		
58	Do you walk or use a bicycle (pedal cycle) for at least 10 minutes continuously to get to and from places?	<div>Yes 1</div> <div>No 2 If No, go to P10</div> <div>P7</div>
59	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?	<div>Number of days <input type="text"/></div> <div>P8</div>
60	How much time do you spend walking or bicycling for travel on a typical day?	<div>Hours : minutes <input type="text"/> : <input type="text"/></div> <div>hrs mins</div> <div>P9 (a-b)</div>

Participant Identification Number

CORE: Physical Activity, Continued			
Question		Response	Code
Recreational activities			
Now I would like to ask you about sports, fitness and recreational activities (leisure)			
61	Do you do any vigorous-intensity sports, fitness or recreational (<i>leisure</i>) activities that cause large increases in breathing or heart rate like running, playing ha-du-du or football for at least 10 minutes continuously? (USE SHOWCARD)	Yes 1 No 2 If No, go to P13	P10
62	In a typical week, on how many days do you do vigorous-intensity sports, fitness or recreational (<i>leisure</i>) activities?	Number of days <input type="text"/>	P11
63	How much time do you spend doing vigorous-intensity sports, fitness or recreational activities on a typical day?	Hours : minutes <input type="text"/> : <input type="text"/> hrs mins	P12 (a-b)
Now I would like to ask you about the time you spend doing moderate-intensity activity outside your work			
64	Do you do any moderate-intensity sports, fitness or recreational (<i>leisure</i>) activities that cause a small increase in breathing or heart rate such as brisk walking, cycling, swimming, playing volleyball and dariabandha for at least 10 minutes continuously? (USE SHOWCARD)	Yes 1 No 2 If No, go to P16	P13
65	In a typical week, on how many days do you do moderate-intensity sports, fitness or recreational (<i>leisure</i>) activities?	Number of days <input type="text"/>	P14
66	How much time do you spend doing moderate-intensity sports, fitness or recreational (<i>leisure</i>) activities on a typical day?	Hours : minutes <input type="text"/> : <input type="text"/> 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.			
67	How much time do you usually spend sitting or reclining on a typical day?	Hours : minutes <input type="text"/> : <input type="text"/> hrs mins	P16 (a-b)

Participant Identification Number

CORE: History of Raised Blood Pressure			
Question		Response	Code
68	Have you ever had your blood pressure measured by a doctor or other health worker?	Yes 1	H1
		No 2 <i>If No, go to H6</i>	
69	Have you ever been told by a doctor or other health worker that you have raised blood pressure or hypertension?	Yes 1	H2a
		No 2 <i>If No, go to H6</i>	
70	Have you been told in the past 12 months?	Yes 1	H2b
		No 2	

EXPANDED: History of Raised Blood Pressure			
71	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	
	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	
72	Have you ever seen a healer other than allopathic such as homeopathic, ayurvedic, herbalist, traditional healers and others for raised blood pressure or hypertension?	Yes 1	H4
		No 2	
73	Are you currently taking any herbal or traditional remedy for your raised blood pressure?	Yes 1	H5
		No 2	

Participant Identification Number

CORE: History of Diabetes			
Question		Response	Code
74	Have you ever had your blood sugar measured by a doctor or other health worker?	Yes 1 No 2 <i>If No, go to M1</i>	H6
75	Have you ever been told by a doctor or other health worker that you have raised blood sugar or diabetes?	Yes 1 No 2 <i>If No, go to M1</i>	H7a
76	Have you been told in the past 12 months?	Yes 1 No 2	H7b

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

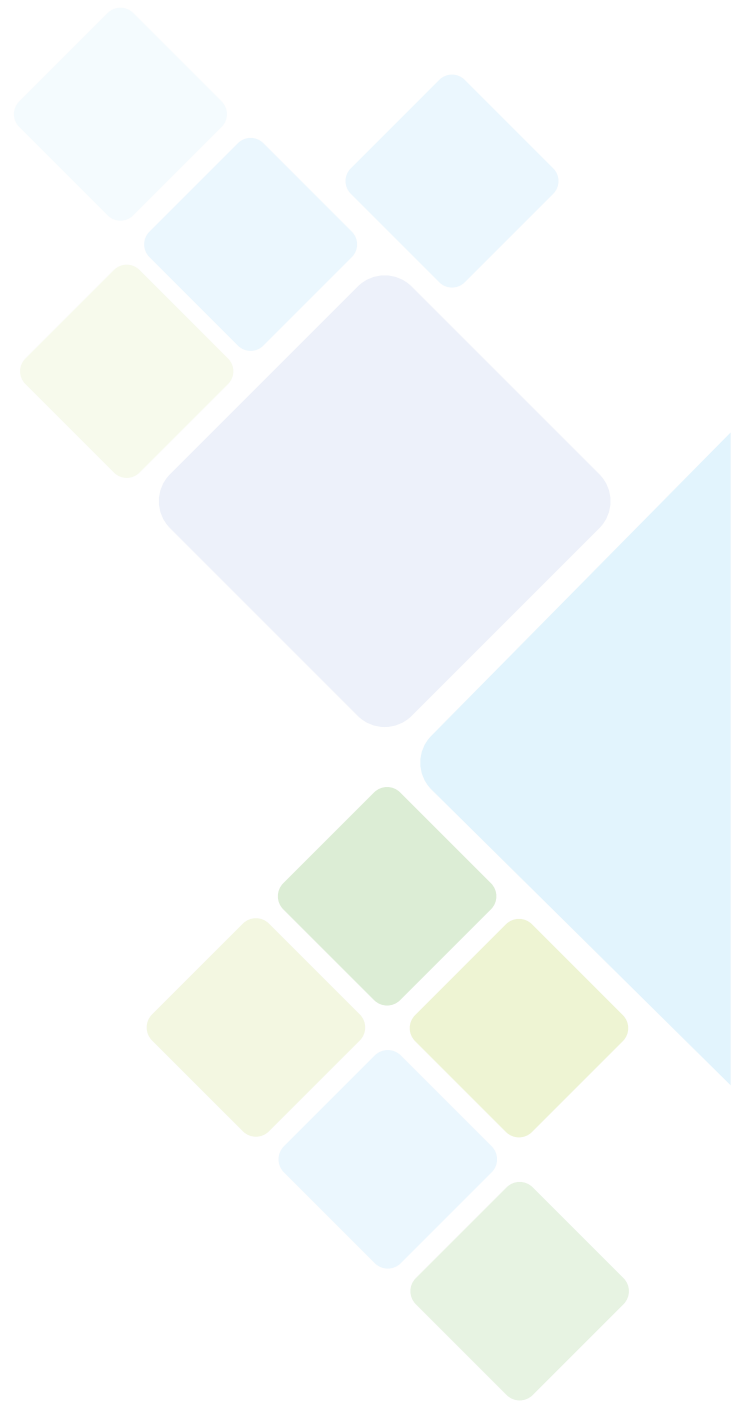
Participant Identification Number

Step 2 Physical Measurements

CORE: Height and Weight			
Now I am going to measure your height and weight (in erect posture)			
Question	Response		Code
80 Interviewer ID	<input type="text"/>		M1
81 Device IDs for height and weight	Height <input type="text"/> Weight <input type="text"/>		M2a M2b
82 Height	In Centimetres (cm) <input type="text"/>		M3
83 Weight If too large for scale 666.6	In Kilograms (kg) <input type="text"/>		M4
84 For women: Are you pregnant?	Yes 1 <i>If yes, go to M8</i> No 2		M5
CORE: Waist			
Now I am going to measure your waist (in erect posture)			
85 Device ID for waist	<input type="text"/>		M6
86 Waist circumference	In Centimetres (cm) <input type="text"/>		M7
CORE: Blood Pressure			
Now I am going to measure your blood pressure (in sitting posture, in right arm with two legs paralleled)			
87 Interviewer ID	<input type="text"/>		M8
88 Device ID for blood pressure	<input type="text"/>		M9
89 Cuff size used	Small 1 Medium 2 Large 3		M10
90 Reading 1 (Take the first reading. Let the person at rest for 3 minutes before taking second reading)	Systolic (mmHg) <input type="text"/>		M11a
	Diastolic (mmHg) <input type="text"/>		M11b
91 Reading 2 (Take the second reading. Let the person at rest for 3 minutes before taking third reading)	Systolic (mmHg) <input type="text"/>		M12a
	Diastolic (mmHg) <input type="text"/>		M12b
92 Reading 3 (Take the third reading)	Systolic (mmHg) <input type="text"/>		M13a
	Diastolic (mmHg) <input type="text"/>		M13b
93 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 No 2		M14

Participant Identification Number

EXPANDED: Hip Circumference and Heart Rate			
Now I am going to measure your hip circumference and Pulse (hip and waist circumference should be measured at a time and pulse during measuring blood pressure)			
94	Hip circumference	In Centimetres (cm) <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	M15
95	Pulse		
	Reading 1	Beats per minute <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	M16a
	Reading 2	Beats per minute <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	M16b
	Reading 3	Beats per minute <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	M16c



জাতীয় পর্যায়ে অসংক্রামক রোগের ঝুঁকি সমূহের ব্যাপ্তি নির্ণয়ের সমীক্ষা
বাংলাদেশ সোসাইটি অব মেডিসিন, স্বাস্থ্য অধিদপ্তর এবং বিশ্ব স্বাস্থ্য সংস্থা, বাংলাদেশ

সমীক্ষার তথ্যাবলী

স্থান এবং তারিখ	উত্তর	কোড
১. PSU ID	<input type="text"/>	I1
২. PSU name	<input type="text"/>	I2
৩. Interviewer ID	<input type="text"/>	I3
৪. Date of completion of the questionnaire	<input type="text"/> dd <input type="text"/> mm <input type="text"/> year	I4

তথ্য প্রদানকারীর আই.ডি. নং : <input type="text"/>		
অনুমতি, সাক্ষাৎকারের ভাষা এবং নাম	উত্তর	কোড
৫. অনুমতি নেয়া হয়েছে কি?	হ্যাঁ ১ না ২ (উত্তর না হলে সাক্ষাৎকার শেষ করুন)	I5
৬. সাক্ষাৎকারের ভাষা	ইংরেজী ১ <input type="text"/> বাংলা ২ <input type="text"/>	I6
৭. সাক্ষাৎকার গ্রহণের সময় (২৪ ঘন্টায়)	<input type="text"/> : <input type="text"/> ঘন্টা মিনিট	I7
৮. সাক্ষাৎকার প্রদানকারীর নাম	<input type="text"/>	I8
অতিরিক্ত সাহায্যকারী তথ্য		
১০. টেলিফোন/মোবাইল নং	<input type="text"/>	I10

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

তথ্য প্রদানকারীর আই.ডি. নং :

খানা সম্পর্কিত প্রশ্নাবলী

খানা সম্পর্কিত (Household) সাক্ষাৎকার গ্রহণ শুরুর সময় _____ : _____
[ঘড়ির ২৪ ঘন্টা সময় অনুসারে] ঘন্টা মিনিট

[সাক্ষাৎকার গ্রহণকারীর জন্য: পরিবার সম্পর্কে তথ্য প্রদানকারী উত্তরদাতার অবশ্যই বয়স ১৮ বৎসর বা তদূর্ধ্ব হতে হবে এবং আপনাকে অবশ্যই নিশ্চিত হতে হবে যে সেই ব্যক্তি পরিবারটি সম্পর্কে সঠিক তথ্য দিতে পারবে।]

[যদি প্রয়োজন হয়, খানা সম্পর্কিত উত্তরদাতার বয়স যাচাই করুন এবং নিশ্চিত হউন যে, তার বয়স ১৮ বৎসর বা তদূর্ধ্ব]

ভূমিকা: গণপ্রজাতন্ত্রী বাংলাদেশ সরকারের স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয় সারা বাংলাদেশে ২৫ বছরের উর্ধ্ব প্রাপ্তবয়স্কদের মধ্যে জাতীয় পর্যায়ে অসংক্রামক রোগের ঝুঁকি সমূহের ব্যাপ্তি নির্ণয়ের একটি গুরুত্বপূর্ণ জরিপকাজ পরিচালনা করছে এবং আপনার পরিবার এতে অংশ গ্রহনের জন্য নির্বাচিত হয়েছে। জরিপে অংশ গ্রহনের জন্য নির্বাচিত সকল পরিবারই বৈজ্ঞানিক পদ্ধতিতে নির্বাচন করা হয়েছে এবং এই জরিপের সাফল্যের জন্য নির্বাচিত সকলের অংশ গ্রহণ খুবই গুরুত্বপূর্ণ। সংগৃহীত সকল তথ্যই কঠোরভাবে গোপন রাখা হবে। আপনার খানার মধ্যে কে এই জরিপে অংশগ্রহনের জন্য উপযুক্ত তা জানার জন্য আমি কয়েকটি প্রশ্ন করব।

HH1. প্রথমে আমি আপনাকে আপনার খানা সম্পর্কে কয়েকটি প্রশ্ন জিজ্ঞাসা করব। এই গৃহে মোট কতজন বাস করেন, যারা গত রাতে এই গৃহ তাদের প্রাথমিক আবাসস্থল হিসাবে বিবেচনা করেন?

জন

HH2. এই খানার কতজনের বয়স ২৫ বৎসর বা তার বেশী?

জন

HH3. এই খানার কতজন (পুরুষ / মহিলা)-র বয়স ২৫ বৎসর বা তার বেশী?

জন

HH4. এখন আমি এই খানায় বসবাসকারী ২৫ বৎসর বা তার বেশী বয়সী (পুরুষ / মহিলা) - দের ব্যাপারে তথ্য সংগ্রহ করতে চাই। বড় থেকে ছোট ক্রমে (পুরুষ / মহিলা)-দের তালিকা তৈরি করি।

[নীচের প্রশ্নগুলো জিজ্ঞাসা করুন এবং উত্তরগুলো নীচের ছকে লিপিবদ্ধ করুন।]

ক. তার পূর্ণ নাম কি?

খ. তার বয়স কত? [উত্তরদাতা না জানলে অনুসন্ধান করে বলুন।]

গ. লিঙ্গ লিপিবদ্ধ করুন।

তথ্য প্রদানকারীর আই.ডি. নং :

পুরুষ নির্ধারিত HH <input type="text"/> ১ মহিলা নির্ধারিত HH <input type="text"/> ২				
	ক. নাম	খ. বয়স	গ. লিঙ্গ	
			পুরুষ	মহিলা
১	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
২	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
৩	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
৪	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
৫	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
৬	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
৭	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
৮	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
৯	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
১০	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

[HH5. নির্বাচিত উপযুক্ত পুরুষ / মহিলা-র খানা পর্যায়ক্রম সংখ্যা (HOUSEHOLD ROSTER NUMBER)]




HH6. প্রশ্নমালা সনাক্তকরণ সংখ্যার ঘর পূরণ করুন

প্রশ্নমালা সনাক্তকরণ সংখ্যা: -

তথ্য প্রদানকারীর আই.ডি. নং : _____

Step 1 ডেমোগ্রাফিক তথ্যাবলী

মূল: ডেমোগ্রাফিক তথ্যাবলী			
প্রশ্নাবলী		উত্তর	কোড
১১.	লিঙ্গ	পুরুষ ১ <input type="checkbox"/> মহিলা ২ <input type="checkbox"/>	C1
১২.	আপনার জন্ম তারিখ কি? (জানা নাই ৭৭ ৭৭ ৭৭৭৭)	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> যদি জানা থাকে, দিন মাস সাল C4-এ যান	C2
১৩.	আপনার বয়স কত?	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> বৎসর	C3
১৪.	সর্বমোট কত বৎসর প্রাতিষ্ঠানিক শিক্ষা গ্রহণ করেছেন? (প্রথম শ্রেণীর নিচে এবং উপানুষ্ঠানিক শিক্ষা অন্তর্ভুক্ত হবে না)	<input type="text"/> <input type="text"/> <input type="text"/> বৎসর	C4

বর্ধিত: ডেমোগ্রাফিক তথ্যসমূহ			
১৫.	<p>আপনি কতদূর লেখাপড়া করেছেন?</p> <p>কোন প্রাতিষ্ঠানিক শিক্ষা নেই ১</p> <p>প্রাথমিক শিক্ষা শেষ করেননি ২</p> <p>প্রাথমিক শিক্ষা শেষ করেছেন ৩</p> <p>মাধ্যমিক শিক্ষা শেষ করেছেন ৪</p> <p>উচ্চ মাধ্যমিক শিক্ষা শেষ করেছেন ৫</p> <p>কলেজ/বিশ্ববিদ্যালয় শেষ করেছেন ৬</p> <p>স্নাতকোত্তর ডিগ্রী অর্জন করেছেন ৭</p> <p>জানাতে অসম্মতি ৮৮</p>		C5
১৬.	<p>আপনার ধর্ম কি?</p> <p>ইসলাম ১</p> <p>হিন্দু ২</p> <p>খ্রিষ্টান ৩</p> <p>বৌদ্ধ ৪</p> <p>অন্যান্য ৫</p> <p>জানাতে অসম্মতি ৮৮</p>		C6
১৭.	<p>আপনার বৈবাহিক অবস্থা কি?</p> <p>অবিবাহিত ১</p> <p>বিবাহিত ২</p> <p>পৃথক ৩</p> <p>তালাকপ্রাপ্ত ৪</p> <p>বিপত্নীক ৫</p> <p>জানাতে অসম্মতি ৮৮</p>		C7

তথ্য প্রদানকারীর আই.ডি. নং :

বর্ধিত: ডেমোগ্রাফিক তথ্যসমূহ			
১৮.	নিচের কোনটি গত ১২ মাসের মধ্যে আপনার প্রধান পেশা হিসেবে বিবেচিত হতে পারে?		C8
	সরকারী কর্মচারী ১		
	বেসরকারী কর্মচারী ২		
	ব্যবসা (ছোট) ৩		
	ব্যবসা (বড়) ৪		
	কৃষি কাজ (জমির মালিক এবং কৃষক ৫		
	ক্ষুদ্র মজুর ৬		
	কারখানার শ্রমিক ৭		
	দিনমজুর ৮		
	অন্য স্ব-নিয়োগ ৯		
	ছাত্র ১০		
	গৃহ-কর্ম ১১		
	অবসরপ্রাপ্ত ১২		
	বেকার, কর্মক্ষম ১৩		
	বেকার, কর্মক্ষম নন ১৪		
	অন্য কিছু (নির্দিষ্ট করুন) ১৫		
	জানাতে অসম্মতি ৮৮		

নোট: ১৯ নং প্রশ্ন বাদ দেওয়া হয়েছে।

তথ্য প্রদানকারীর আই.ডি. নং :

বর্ধিত: ডেমোগ্রাফিক তথ্যসমূহ			
প্রশ্নাবলী	উত্তর	কোড	
২০. অনুগ্রহ করে বলুন এই গৃহে বা এই গৃহে যারা বাস করেন তাদের কারও নিচের সামগ্রী গুলো আছে কি না:			
a. [বিদ্যুৎ?]	হ্যাঁ ১ না ২ জানা নাই ৭৭ জানাতে অসম্মতি ৮৮	C10a	
b. [ফ্লাশ পায়খানা?]	হ্যাঁ ১ না ২ জানা নাই ৭৭ জানাতে অসম্মতি ৮৮	C10b	
c. [ল্যান্ড ফোন?]	হ্যাঁ ১ না ২ জানা নাই ৭৭ জানাতে অসম্মতি ৮৮	C10c	
d. [মোবাইল ফোন?]	হ্যাঁ ১ না ২ জানা নাই ৭৭ জানাতে অসম্মতি ৮৮	C10d	
e. [টেলিভিশন?]	হ্যাঁ ১ না ২ জানা নাই ৭৭ জানাতে অসম্মতি ৮৮	C10e	
f. [রেডিও?]	হ্যাঁ ১ না ২ জানা নাই ৭৭ জানাতে অসম্মতি ৮৮	C10f	
g. [রেফ্রিজারেটর?]	হ্যাঁ ১ না ২ জানা নাই ৭৭ জানাতে অসম্মতি ৮৮	C10g	
h. [প্রাইভেট কার?]	হ্যাঁ ১ না ২ জানা নাই ৭৭ জানাতে অসম্মতি ৮৮	C10h	
i. [মোটর সাইকেল?]	হ্যাঁ ১ না ২ জানা নাই ৭৭ জানাতে অসম্মতি ৮৮	C10i	
j. [ওয়াশিং মেশিন?]	হ্যাঁ ১ না ২ জানা নাই ৭৭ জানাতে অসম্মতি ৮৮	C10j	
k. [বাই সাইকেল?]	হ্যাঁ ১ না ২ জানা নাই ৭৭ জানাতে অসম্মতি ৮৮	C10k	

তথ্য প্রদানকারীর আই.ডি. নং :

	l. [সেলাই মেশিন?]	হ্যাঁ ১ না ২ জানা নাই ৭৭ জানাতে অসম্মতি ৮৮	C10l
	m. [আলমিরা / ওয়াদ্রোব?]	হ্যাঁ ১ না ২ জানা নাই ৭৭ জানাতে অসম্মতি ৮৮	C10m
	n. [টেবিল?]	হ্যাঁ ১ না ২ জানা নাই ৭৭ জানাতে অসম্মতি ৮৮	C10n
	o. [চৌকি অথবা খাট?]	হ্যাঁ ১ না ২ জানা নাই ৭৭ জানাতে অসম্মতি ৮৮	C10o
	p. [চেয়ার অথবা বেঞ্চ?]	হ্যাঁ ১ না ২ জানা নাই ৭৭ জানাতে অসম্মতি ৮৮	C10p
	q. [ঘড়ি?]	হ্যাঁ ১ না ২ জানা নাই ৭৭ জানাতে অসম্মতি ৮৮	C10q
২১	a. প্রধান ঘরের ছাদ/চাল প্রধানতঃ কি দিয়ে নির্মিত? (পর্যবেক্ষণ করে লিখুন) কাঁচা (বাঁশ/খড়) <input type="text"/> ১ টিন <input type="text"/> ২ সিমেন্ট/কনক্রিট/টাইলস্ <input type="text"/> ৩ অন্যকিছু <input type="text"/> ৪ জানা নেই <input type="text"/> ৭৭	<input type="text"/>	C11a
	b. প্রধান ঘরের দেয়াল প্রধানতঃ কি দিয়ে নির্মিত? (পর্যবেক্ষণ করে লিখুন) পাট/বাঁশ/কাদা <input type="text"/> ১ কাঁচা <input type="text"/> ২ ইট/সিমেন্ট <input type="text"/> ৩ টিন <input type="text"/> ৪ অন্যকিছু <input type="text"/> ৫ জানা নেই <input type="text"/> ৭৭	<input type="text"/>	C11b
	c. প্রধান ঘরের মেঝে প্রধানতঃ কি দিয়ে নির্মিত? (পর্যবেক্ষণ করে লিখুন) মাটি/বাঁশ/কাদা <input type="text"/> ১ কাঁচা <input type="text"/> ২ সিমেন্ট / কনক্রিট <input type="text"/> ৩ অন্যকিছু <input type="text"/> ৪ জানা নেই..... <input type="text"/> ৭৭	<input type="text"/>	C11c

Step 1 জীবনাচরণ পরিমাপের তথ্যাবলী (Behavioral Measurements)

মূল: তামাকের ব্যবহার		
এখন আমি আপনাকে বিভিন্ন স্বাস্থ্য বিষয়ক জীবনাচরণ সম্পর্কে কিছু প্রশ্ন করব। এগুলোর মধ্যে আছে- ধূমপান, মদ্যপান, ফল ও শাক-সজি খাওয়া এবং শারীরিক পরিশ্রম।		
প্রশ্নাবলী	উত্তর	কোড
২২ আপনি কি বর্তমানে কোন প্রকার ধূমপান করেন? যেমন- সিগারেট, বিড়ি, হুকা, চুরুট, পাইপ। (নমুনা কার্ড অনুযায়ী)	হ্যাঁ ১ <input type="text"/> না ২ (যদি না হয়, T6-এ যান)	T1
২৩ আপনি কি প্রতিদিন ধূমপান করেন?	হ্যাঁ ১ <input type="text"/> না ২ (যদি না হয়, T6-এ যান)	T2
২৪ কত বৎসর বয়সে আপনি প্রতিদিন ধূমপান শুরু করেন?	<input type="text"/> বৎসর জানা না থাকলে ৭৭ (জানা থাকলে, T5a-এ যান)	T3
২৫ আপনার কি মনে আছে তা কত আগে?	<input type="text"/> বৎসর বা	T4a
	<input type="text"/> মাস বা	T4b
	<input type="text"/> সপ্তাহ	T4c
	জানা না থাকলে ৭৭ (জানা থাকলে, T5a-এ যান)	
২৬ গড়ে নিচের কোনটি কতটি আপনি প্রতিদিন ধূমপান করেন?		
সিগারেট	<input type="text"/>	T5a
বিড়ি	<input type="text"/>	T5b
হুকা/ধাবা	<input type="text"/>	T5c
পাইপ	<input type="text"/>	T5d
হাতে মোড়ানো সিগারেট	<input type="text"/>	T5e
চুরুট	<input type="text"/>	T5f
অন্যান্য (যদি অন্যান্য হয় তবে T5 Others-এ যান, তাছাড়া T9-এ যান),	<input type="text"/>	T5g
অন্যান্য (নির্দিষ্ট করুন) এবং T9-এ যান	<input type="text"/>	T5 other

তথ্য প্রদানকারীর আই.ডি. নং :

মূল: তামাকের ব্যবহার			
প্রশ্নাবলী		উত্তর	কোড
২৭	পূর্বে কি আপনি কখনো প্রতিদিন ধূমপান করতেন?	হ্যাঁ ১ <input type="text"/> না ২ (যদি না হয়, T9-এ যান)	T6
২৮	কত বৎসর বয়সে আপনি প্রতিদিন ধূমপান বন্ধ করেছিলেন?	<input type="text"/> বৎসর জানা না থাকলে ৭৭ (জানা থাকলে, T9-এ যান)	T7
২৯	কত আগে আপনি প্রতিদিন ধূমপান বন্ধ করেছিলেন? (যে কোন ১টি উত্তর দিন)	<input type="text"/> বৎসর বা	T8a
		<input type="text"/> মাস বা	T8b
		<input type="text"/> সপ্তাহ	T8c
		জানা না থাকলে ৭৭ (জানা থাকলে, T9-এ যান)	
৩০	আপনি কি বর্তমানে কোন ধূয়াহীন তামাক ব্যবহার করেন? (যেমন-জর্দা, সাদা-পাতা, গুল, নস্যি)	হ্যাঁ ১ <input type="text"/> না ২ (যদি না হয়, T12-এ যান)	T9
৩১	আপনি কি ধূয়াহীন তামাক প্রতিদিন ব্যবহার করেন? (যেমন-জর্দা, সাদা-পাতা, গুল, নস্যি)	হ্যাঁ ১ <input type="text"/> না ২ (যদি না হয়, T12-এ যান)	T10
৩২	গড়ে প্রতিদিন কতবার এগুলো ব্যবহার করেন? (প্রতিটির উত্তর নিতে হবে)		
	জর্দা	<input type="text"/>	T11a
	সাদা-পাতা	<input type="text"/>	T11b
	গুল	<input type="text"/>	T11c
	নস্যি	<input type="text"/>	T11d
	খৈনি	<input type="text"/>	T11e
	অন্যান্য (যদি অন্যান্য হয় তবে T11 Others-এ যান, তাছাড়া T13-এ যান),	<input type="text"/>	T11f
	অন্যান্য (নির্দিষ্ট করুন) এবং T13-এ যান	<input type="text"/>	T11other
	জানা নাই ৭৭	<input type="text"/>	T11g
৩৩	পূর্বে কি কখনো আপনি প্রতিদিন ধূয়াহীন তামাক ব্যবহার করতেন? (যেমন-জর্দা, সাদা-পাতা, গুল, নস্যি)	হ্যাঁ ১ <input type="text"/> না ২	T12
৩৪	গত ৭ দিনে, আপনার উপস্থিতিতে অন্য কেউ আপনার বাড়ীতে কতদিন ধূমপান করেছেন?	<input type="text"/> দিন জানা না থাকলে ৭৭	T13
৩৫	গত ৭ দিনে, আপনার উপস্থিতিতে অন্য কেউ আপনার কর্মক্ষেত্রের আবদ্ধ এলাকায় কতদিন ধূমপান করেছেন?	<input type="text"/> দিন জানা না থাকলে বা আবদ্ধ এলাকায় কাজ না করলে ৭৭	T14

তথ্য প্রদানকারীর আই.ডি. নং :

মূল: মদ্যপান			
এখন আমি আপনাকে মদ্যপান সম্পর্কে কিছু প্রশ্ন করবো?			
প্রশ্নাবলী	উত্তর	কোড	
৩৬	আপনি কি কখনো মদ জাতীয় পানীয় পান করেছেন? (যেমন-দেশী মদ, বিয়ার, ওয়াইন, স্পিরিট)	হ্যাঁ ১ <input type="checkbox"/> না ২ (যদি না হয়, D1-এ যান)	A1a
৩৭	আপনি কি গত ১২ মাসে কোন ধরনের মদ জাতীয় পানীয় পান করেছেন?	হ্যাঁ ১ <input type="checkbox"/> না ২ (যদি না হয়, D1-এ যান)	A1b
৩৮	গত ১২ মাসে যে কোন ধরনের মদ জাতীয় পানীয় কি হারে পান করেছেন? দৈনিক ১ সপ্তাহে ৫/৬ দিন ২ সপ্তাহে ১-৪ দিন ৩ মাসে ১-৩ দিন ৪ মাসে ১ বারের কম ৫ [উত্তরগুলো পড়ে গুনান, নমুনা কার্ড অনুযায়ী]	<input type="checkbox"/>	A2
৩৯	আপনি কি গত ৩০ দিনে কোন ধরনের মদ জাতীয় পানীয় পান করেছেন?	হ্যাঁ ১ <input type="checkbox"/> না ২ (যদি না হয়, D1-এ যান)	A3
৪০	গত ৩০ দিনের মধ্যে আপনি কতবার মদ জাতীয় পানীয় পান করেছেন?	<input type="text"/> দিন জানা না থাকলে ৭৭	A4
৪১	গত ৩০ দিনের মধ্যে মদ জাতীয় পানীয় পান করার সময় গড়ে কি পরিমাণ পান করেছেন? [নমুনা কার্ড অনুযায়ী]	<input type="text"/> দিন জানা না থাকলে ৭৭	A5
৪২	গত ৩০ দিনের মধ্যে মদ জাতীয় পানীয় পান করার সময় সবচেয়ে বেশী কি পরিমাণ পান করেছেন?	<input type="text"/> দিন জানা না থাকলে ৭৭	A6
৪৩	গত ৩০ দিনে কতবার একসাথে ৫ (পুরুষ) বা ৪ (মহিলা) ইউনিট এর বেশী মদ জাতীয় পানীয় পান করেছেন?	<input type="text"/> দিন জানা না থাকলে ৭৭	A7

নোট: ৪৪ এবং ৪৫ নং প্রশ্ন বাদ দেওয়া হয়েছে।

তথ্য প্রদানকারীর আই.ডি. নং :

মূল: খাদ্যাভ্যাস সংক্রান্ত তথ্যাবলী			
আমরা সাধারণত যেসব ফল এবং সব্জি খাই সেই খাদ্য সম্পর্কিত প্রশ্ন করবো? আমার কাছে দেশীয় ফল এবং শাক-সব্জির ছবিসহ একটি পুষ্টি কার্ড আছে, প্রতিটি ছবি এক একটি সার্ভিংস এর সমান। উত্তর দেওয়ার সময় গত ১ বছরের সাধারণ ১টি সপ্তাহের কথা চিন্তা করুন...			
প্রশ্নাবলী	উত্তর	কোড	
৪৬ সাধারণত সপ্তাহে কত দিন ফল খান? [নমুনা কার্ড অনুযায়ী]	<input type="text"/> দিন জানা না থাকলে ৭৭ (যদি '০০' হয়, D3-এ যান)	D1	
৪৭ সেই দিনগুলির একদিনে কতটুকু ফল খেয়েছেন? [নমুনা কার্ড অনুযায়ী]	<input type="text"/> সার্ভিংস জানা না থাকলে ৭৭	D2	
৪৮ সাধারণত সপ্তাহে কত দিন শাক-সব্জি খান? [নমুনা কার্ড দেখান]	<input type="text"/> দিন জানা না থাকলে ৭৭ (যদি '০০' হয়, D5-এ যান)	D3	
৪৯ সেই দিনগুলির একদিনে কতটুকু শাক-সব্জি খেয়েছেন? [নমুনা কার্ড অনুযায়ী]	<input type="text"/> সার্ভিংস জানা না থাকলে ৭৭	D4	
৫০ আপনার বাসার রান্নার সময় সাধারণত কোন ধরনের তৈল বা চর্বি ব্যবহার হয়? [নমুনা কার্ড অনুযায়ী] (যে কোন একটি নির্দিষ্ট করুন) সয়াবিন তৈল ১ চর্বি ২ মাখন/ঘি ৩ পাম অয়েল ৪ অন্যান্য ৫ নির্দিষ্ট কোনটি নয় ৬ কিছুই নয় ৭ সানফাওয়ার তৈল ৮ সরিষার তৈল ৯ ডালডা ১০ (যদি অন্যান্য হয় তবে D5 Others-এ যান)	<input type="text"/> জানা না থাকলে ৭৭	D5	
অন্যান্য (নির্দিষ্ট করুন)	<input type="text"/>	D5 other	
৫১ বাড়ীতে তৈরী হয় না এমন খাবার গড়ে সপ্তাহে কতবার খান? (সকালের নাস্তা, দুপুর ও রাতের খাবার)	<input type="text"/> সংখ্যা জানা না থাকলে ৭৭	D6	

তথ্য প্রদানকারীর আই.ডি. নং :

মূল: শারীরিক পরিশ্রম সংক্রান্ত তথ্য			
সাধারণ একটি সপ্তাহে বিভিন্ন ধরনের শারীরিক পরিশ্রমে আপনি যে সময় কাটান সে সম্পর্কে কিছু প্রশ্ন করবো। আপনি যদি মনে করেন, আপনি কোন ধরনের শারীরিক পরিশ্রম করেন না, তবুও দয়া করে প্রশ্নগুলোর উত্তর দিবেন।			
আপনি পেশাগত কাজের সময় প্রথমে আপনার পেশাগত কাজে যে সময় ব্যয় করেন তা সম্পর্কে চিন্তা করুন। তা হতে পারে টাকার বিনিময়ে বা বিনামূল্যের কাজ। পড়াশুনা, ট্রেনিং, বাসা-বাড়ীর কাজ, খাদ্য-শস্যের চাষাবাদ, মাছ ধরা বা খাদ্যের জন্য শিকার করা অথবা চাকুরী খোঁজা। এখানে 'ভারী মাত্রার কাজ' বলতে বোঝায় খুব পরিশ্রমের কাজ যাতে একজন অত্যধিক হাপিয়ে উঠেন এবং বুক ধরপর করে এবং 'মধ্যম মাত্রার কাজ' বলতে বোঝায় মাঝারী পরিশ্রমের কাজ যাতে একজন অল্প হাপিয়ে ওঠেন।			
প্রশ্নাবলী	উত্তর	কোড	
এখন আমি আপনার ভারী মাত্রার কাজ সম্পর্কে জানতে চাইবো।			
৫২	আপনার পেশাগত কাজে অত্যধিক হাপিয়ে উঠেন এবং বুক ধরপর করে এমন কোন কাজ একনাগাড়ে কমপক্ষে ১০ মিনিট করতে হয় কি? যেমন-ভারী জিনিস তোলা, মাটি কাটা, নির্মাণ কাজ, ধান কাটা ইত্যাদি। [নমুনা কার্ড অনুযায়ী]	হ্যাঁ ১ <input type="text"/> না ২ (যদি না হয়, P4-এ যান)	P1
৫৩	সাধারণ একটি সপ্তাহে এ ধরনের ভারী কাজ কতদিন করতে হয়?	দিন <input type="text"/>	P2
৫৪	এমন একটি দিনে এই ধরনের ভারী কাজ আনুমানিক কতক্ষণ করতে হয়?	<input type="text"/> : <input type="text"/> ঘন্টা মিনিট	P3 (a-b)
এখন আমি আপনার মধ্যম মাত্রার ভারী কাজ সম্পর্কে জানতে চাইবো।			
৫৫	আপনার পেশাগত কাজে অল্প হাপিয়ে উঠেন এমন কোন কাজ একনাগাড়ে কমপক্ষে ১০ মিনিট করতে হয় কি? যেমন-দ্রুত হাটা বা হালকা ভার বহন। [নমুনা কার্ড অনুযায়ী]	হ্যাঁ ১ <input type="text"/> না ২ (যদি না হয়, P7-এ যান)	P4
৫৬	সাধারণ একটি সপ্তাহে এ ধরনের ভারী কাজ কতদিন করতে হয়?	দিন <input type="text"/>	P5
৫৭	এমন একটি দিনে এই ধরনের ভারী কাজ আনুমানিক কতক্ষণ করতে হয়?	<input type="text"/> : <input type="text"/> ঘন্টা মিনিট	P6 (a-b)
আপনি সাধারণত কাজে, দোকানে, বাজারে বা উপাসনালয়ে যাতায়াতের জন্য যা ব্যবহার করেন সেই সম্পর্কে জানতে চাইবো।			
৫৮	যাতায়াতের জন্য আপনি কি একনাগাড়ে কমপক্ষে ১০ মিনিট হাঁটেন বা বাইসাইকেল ব্যবহার করেন?	হ্যাঁ ১ <input type="text"/> না ২ (যদি না হয়, P10-এ যান)	P7
৫৯	সাধারণ একটি সপ্তাহে যাতায়াতের জন্য কতদিন একনাগাড়ে কমপক্ষে ১০ মিনিট হাঁটেন বা বাইসাইকেল ব্যবহার করেন?	দিন <input type="text"/>	P8
৬০	সাধারণ একটি দিনে মোট কতক্ষণ সময় যাতায়াতের জন্য আপনি হাঁটেন বা বাইসাইকেল চালান?	<input type="text"/> : <input type="text"/> ঘন্টা মিনিট	P9 (a-b)

তথ্য প্রদানকারীর আই.ডি. নং :

মূল: শারীরিক পরিশ্রম সংক্রান্ত তথ্য			
পরবর্তী প্রশ্নগুলো পেশাগত কাজ এবং যাতায়াতের বাহিরে খেলাধুলা, ব্যায়াম অথবা বিনোদনমূলক কাজ সম্পর্কে। এখন আমি আপনাকে এই ধরনের ভারী কায়িক পরিশ্রম সম্পর্কে জানতে চাইবো।			
৬১	পেশাগত কাজের বাহিরে আপনি কি এমন কোন কাজ কমপক্ষে একনাগাড়ে ১০মিনিট করেন, যাতে অত্যধিক হাপিয়ে উঠেন এবং বুক ধরপর করে। যেমন খেলাধুলা, ব্যায়াম অথবা বিনোদনমূলক কাজ করেন (দৌড়ানো, হাডুড় বা ফুটবল খেলা) [নমুনা কার্ড দেখান]	হ্যাঁ ১ <input type="checkbox"/> না ২ (যদি না হয়, P13-এ যান)	P10
৬২	একটি সাধারণ সপ্তাহে পেশাগত কাজের বাহিরে এমন পরিশ্রম কতদিন করেন? যেমন-খেলাধুলা, ব্যায়াম অথবা বিনোদনমূলক কাজ।	দিন <input type="text"/>	P11
৬৩	এমন একটি দিনে পেশাগত কাজের বাহিরে এ ধরনের ভারী কাজ আনুমানিক কতক্ষন করেন?	<input type="text"/> : <input type="text"/> ঘন্টা মিনিট	P12 (a-b)
এখন আমি আপনার পেশাগত কাজের বাহিরে মাঝারী মাত্রার কায়িক পরিশ্রম সম্পর্কে জানতে চাইবো।			
৬৪	পেশাগত কাজের বাহিরে আপনি কি এমন কোন কাজ কমপক্ষে একনাগাড়ে ১০মিনিট করেন, যাতে অল্প হাপিয়ে উঠেন। যেমন-খেলাধুলা, ব্যায়াম অথবা বিনোদনমূলক কাজ, জোড়ে হাটা, সাইকেলিং, সাতার কাটা, ভলিবল ও দাড়িয়াবান্ধা খেলা। [নমুনা কার্ড দেখান]	হ্যাঁ ১ <input type="checkbox"/> না ২ (যদি না হয়, P13-এ যান)	P13
৬৫	সাধারণ একটি সপ্তাহে পেশাগত কাজের বাহিরে এধরনের পরিশ্রম কতদিন করতে হয়?	দিন <input type="text"/>	P14
৬৬	এমন একটি দিনে পেশাগত কাজের বাহিরে এ ধরনের মাঝারী কাজ আনুমানিক সর্বমোট কতক্ষন করেন?	<input type="text"/> : <input type="text"/> ঘন্টা মিনিট	P15 (a-b)
বর্ধিত : শারীরিক পরিশ্রম সংক্রান্ত তথ্যাবলী			
বসে করা কাজ সম্পর্কিত আচরণঃ			
পরবর্তী প্রশ্নটি কর্মক্ষেত্রে, বাড়িতে, এক জায়গা থেকে অন্য জায়গায় যেতে অথবা বন্ধুদের আড্ডায়, গাড়ী, বাস বা ট্রেনে করে যাওয়া, পড়াশোনা, কার্ড খেলা অথবা টেলিভিশন দেখার ক্ষেত্রে শুয়ে বা হেলান দিয়ে কাটানো সময় সম্পর্কে। এখানে ঘুমিয়ে কাটানো সময় অন্তর্ভুক্ত হবে না।			
৬৭	সাধারণ একটি দিনে ঘুম ও ছুটির দিন ছাড়া কতটুকু সময় আপনি শুয়ে বসে কাটান?	<input type="text"/> : <input type="text"/> ঘন্টা মিনিট	P16 (a-b)

তথ্য প্রদানকারীর আই.ডি. নং :

মূল: উচ্চ রক্তচাপ সংক্রান্ত তথ্য			
প্রশ্নাবলী		উত্তর	কোড
৬৮	আপনার রক্তচাপ একজন ডাক্তার বা স্বাস্থ্যকর্মী দ্বারা কখনো মাপিয়েছেন কি?	হ্যাঁ ১ <input type="checkbox"/> না ২ (যদি না হয়, H6-এ যান)	H1
৬৯	কোন ডাক্তার বা স্বাস্থ্যকর্মী আপনাকে কখনও বলেছেন কি যে আপনার উচ্চ রক্তচাপ আছে?	হ্যাঁ ১ <input type="checkbox"/> না ২ (যদি না হয়, H6-এ যান)	H2a
৭০	আপনার উচ্চ রক্তচাপ কি গত ১২ মাসের মধ্যে প্রথম ধরা পড়েছে?	হ্যাঁ ১ <input type="checkbox"/> না ২	H2b

বর্ধিত: উচ্চ রক্তচাপ সংক্রান্ত তথ্য			
বর্তমানে উচ্চরক্তচাপের জন্য আপনি কি ডাক্তার বা স্বাস্থ্যকর্মীর দেওয়া নিম্নোক্ত কোন চিকিৎসা বা উপদেশ পেয়েছেন কি?			
৭১	গত ২ সপ্তাহে উচ্চ রক্তচাপের কোন ঔষধ খেয়েছেন কি?	হ্যাঁ ১ <input type="checkbox"/> না ২	H3a
	লবন কম খাওয়ার উপদেশ	হ্যাঁ ১ <input type="checkbox"/> না ২	H3b
	ওজন কমানোর উপদেশ বা কোন চিকিৎসা	হ্যাঁ ১ <input type="checkbox"/> না ২	H3c
	ধূমপান পরিত্যাগের উপদেশ বা চিকিৎসা	হ্যাঁ ১ <input type="checkbox"/> না ২	H3d
	ব্যায়াম অথবা হাঁটার উপদেশ	হ্যাঁ ১ <input type="checkbox"/> না ২	H3e
৭২	আপনি উচ্চ রক্তচাপের জন্য এলোপ্যাথিক ছাড়া অন্য কোন চিকিৎসক দেখিয়েছেন কি? (যেমন-হোমিওপ্যাথি, আয়ুর্বেদিক, কবিরাজি, ঝাড়ফুঁক ও অন্যান্য)	হ্যাঁ ১ <input type="checkbox"/> না ২	H4
৭৩	আপনি উচ্চ রক্তচাপের জন্য ভেষজ বা কবিরাজী চিকিৎসা নিচ্ছেন?	হ্যাঁ ১ <input type="checkbox"/> না ২	H5

তথ্য প্রদানকারীর আই.ডি. নং :

মূল: ডায়াবেটিস সংক্রান্ত তথ্য			
প্রশ্নাবলী	উত্তর		কোড
৭৪ আপনি কি কখনো কোন ডাক্তার বা স্বাস্থ্যকর্মী দ্বারা রক্তের সুগার মাপিয়েছেন?	হ্যাঁ ১ <input type="checkbox"/>	না ২ (যদি না হয়, M1-এ যান)	H6
৭৫ কোন ডাক্তার বা স্বাস্থ্যকর্মী কি কখনও আপনাকে বলেছেন, আপনার রক্তে সুগার বেশী বা ডায়াবেটিস আছে?	হ্যাঁ ১ <input type="checkbox"/>	না ২ (যদি না হয়, M1-এ যান)	H7a
৭৬ গত ১২ মাসের মধ্যে কি কেউ আপনাকে বলেছে?	হ্যাঁ ১ <input type="checkbox"/>	না ২	H7b

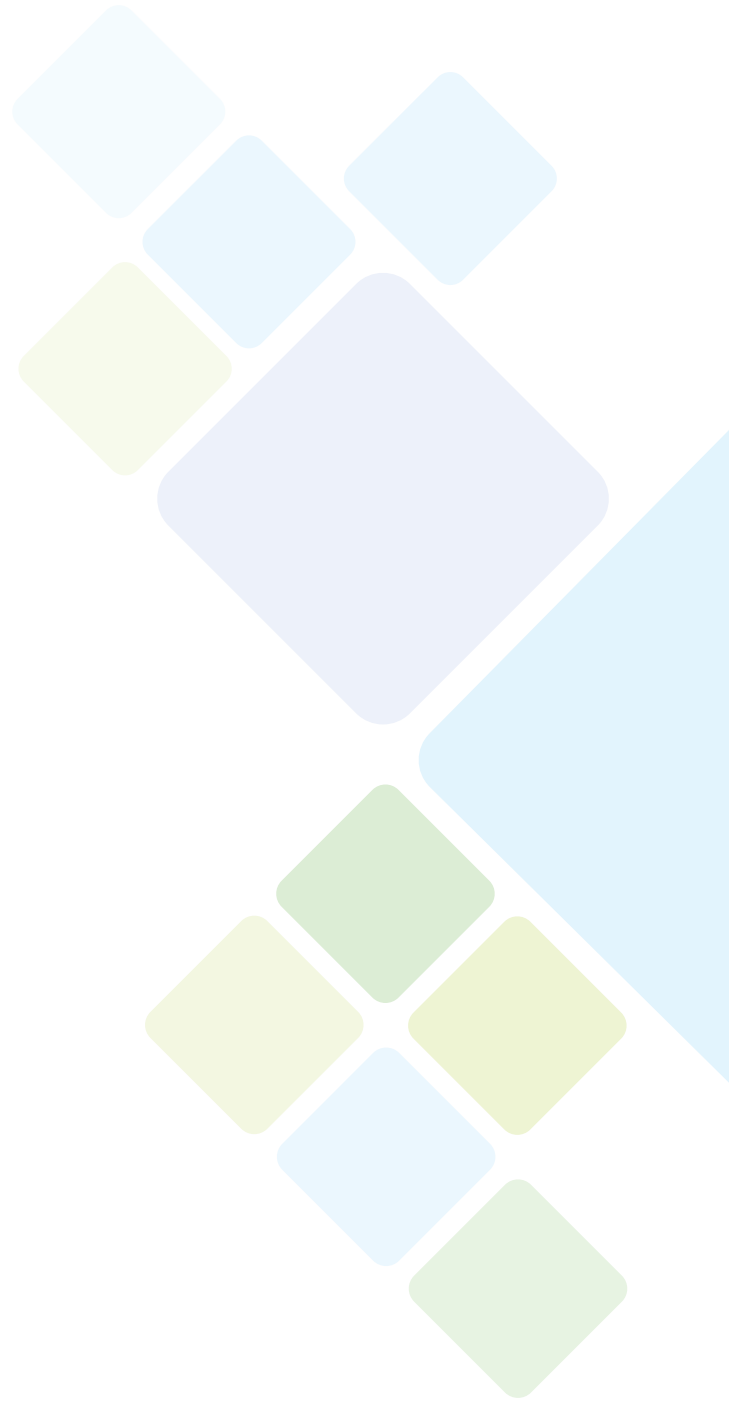
বর্ধিত: ডায়াবেটিস সংক্রান্ত তথ্যাবলী			
৭৭	আপনি কি বর্তমানে ডায়াবেটিসের জন্য ডাক্তার বা স্বাস্থ্যকর্মী দ্বারা নিম্নোক্ত কোনো চিকিৎসা বা উপদেশ পেয়েছেন কি?		
	ইনসুলিন	হ্যাঁ ১ <input type="checkbox"/> না ২	H8a
	গত ২ সপ্তাহে ডায়াবেটিস এর কোন ঔষধ খেয়েছেন কি?	হ্যাঁ ১ <input type="checkbox"/> না ২	H8b
	সুনির্দিষ্ট খাওয়ায় উপদেশ	হ্যাঁ ১ <input type="checkbox"/> না ২	H8c
	ওজন কমানোর উপদেশ বা চিকিৎসা	হ্যাঁ ১ <input type="checkbox"/> না ২	H8d
	ধূমপান পরিত্যাগের উপদেশ বা চিকিৎসা	হ্যাঁ ১ <input type="checkbox"/> না ২	H8e
৭৮	ব্যায়াম শুরু বা বেশী করে করার উপদেশ	হ্যাঁ ১ <input type="checkbox"/> না ২	H8f
	আপনি রক্তে সুগার বাড়ার জন্য এলোপ্যাথিক ছাড়া অন্য কোন চিকিৎসক দেখিয়েছেন কি? (যেমন-হোমিওপ্যাথি, আয়ুর্বেদিক, কবিরাজি, ঝাড়ফুঁক ও অন্যান্য)	হ্যাঁ ১ <input type="checkbox"/> না ২	H9
৭৯	আপনি কি ডায়াবেটিসের জন্য বর্তমানে কোন ভেষজ বা কবিরাজি চিকিৎসা নিচ্ছেন?	হ্যাঁ ১ <input type="checkbox"/> না ২	H10

Step 2 শারীরিক পরিমাপের তথ্যসমূহ (Physical Measurements)

মূল: উচ্চতা এবং ওজন			
এখন আমি আপনার উচ্চতা এবং ওজন নেব (সোজা হয়ে দাঁড়িয়ে)।			
প্রশ্নাবলী	উত্তর	কোড	
৮০ ইন্টারভিউয়ার আই.ডি	<input type="text"/>	M1	
৮১ উচ্চতা এবং ওজন মাপার যন্ত্রের আই.ডি	<input type="text"/> উচ্চতা	M2a	
	<input type="text"/> ওজন	M2b	
৮২ উচ্চতা (সেন্টিমিটারে)	<input type="text"/> সে. মি.	M3	
৮৩ ওজন (কিলোগ্রামে) (যদি যন্ত্রের সর্বোচ্চ মাত্রা অতিক্রম করে তাহলে ৬৬৬.৬)	<input type="text"/> কেজি	M4	
৮৪ মহিলাদের জন্য : আপনি কি গর্ভবর্তী?	হ্যাঁ ১ <input type="text"/> না ২ (যদি হ্যাঁ হয়, M8-এ যান)	M5	
মূল: কোমর			
এখন আমি আপনার কোমরের মাপ নেব (সোজা হয়ে দাঁড়িয়ে)			
৮৫ কোমর মাপার যন্ত্রের আই.ডি	<input type="text"/>	M6	
৮৬ কোমরের পরিধি (সেন্টিমিটারে)	<input type="text"/> সে. মি.	M7	
মূল: রক্তচাপ			
এখন আমি আপনার রক্তচাপ মাপবো (বসে ডান বাহুতে, দুই পা পাশাপাশি রেখে)			
৮৭ ইন্টার ভিউয়ার আই.ডি	<input type="text"/>	M8	
৮৮ রক্তচাপ পরিমাপের যন্ত্রের আইডি	<input type="text"/>	M9	
৮৯ ব্যবহৃত বাহুবন্ধনীর মাপ ছোট ১ মাঝারি (সাধারণ) ২ বড় ৩	<input type="text"/>	M10	
৯০ রিডিং ১ সাক্ষাৎকার প্রদানকারী ১৫ মিনিট বিশ্রাম নেওয়ার পর প্রথমবার রক্তচাপ মাপুন। দ্বিতীয়বার রক্তচাপ মাপার পূর্বে ৩ মিনিট অপেক্ষা করুন।	সিস্টোলিক <input type="text"/> মি.মি.অব মার্কারী	M11a	
	ডায়াস্টোলিক <input type="text"/> মি.মি.অব মার্কারী	M11b	
৯১ রিডিং ২ দ্বিতীয়বার রক্তচাপ মাপুন। তৃতীয়বার রক্তচাপ মাপার আগে সাক্ষাৎকার প্রদানকারীকে পূর্ণরায় ৩ মিনিট বিশ্রাম নিতে বলুন।	সিস্টোলিক <input type="text"/> মি.মি.অব মার্কারী	M12a	
	ডায়াস্টোলিক <input type="text"/> মি.মি.অব মার্কারী	M12b	
৯২ রিডিং ৩ তৃতীয়বার রক্তচাপ মাপুন।	সিস্টোলিক <input type="text"/> মি.মি.অব মার্কারী	M13a	
	ডায়াস্টোলিক <input type="text"/> মি.মি.অব মার্কারী	M13B	
৯৩ গত দুই সপ্তাহের মধ্যে আপনি কি কোন ডাক্তার বা স্বাস্থ্য কর্মীর পরামর্শ অনুযায়ী উচ্চ রক্তচাপের জন্য ঔষধ খেয়েছেন?	হ্যাঁ ১ <input type="text"/> না ২	M14	

তথ্য প্রদানকারীর আই.ডি. নং :

বর্ধিত: নিতম্বের পরিধি এবং পাল্‌স			কোড
এখন আমি আপনার নিতম্বের পরিধি এবং পাল্‌স মাপবো (নিতম্বের এবং কোমরের পরিধির মাপ একই সাথে নিতে হবে, রক্তচাপ মাপার সময় পাল্‌স গুনে নিতে হবে)।			
৯৪	নিতম্বের পরিধি (সেন্টিমিটারে)	<input type="text"/> সে. মি.	M15
৯৫	পাল্‌সের হার		
	রিডিং ১	<input type="text"/> /মিনিট	M16a
	রিডিং ২	<input type="text"/> /মিনিট	M16b
	রিডিং ৩	<input type="text"/> /মিনিট	M16c



SHOWCARDS

A. Tobacco Products

Examples The following picture shows a few selected examples of tobacco products. Sites are to develop show cards including specific examples of local tobacco products.

Step	Section	Items
Step 1, Tobacco use	T	T1 to T14



Manufactured Cigarettes



Roll-your-own (RYO) cigarettes



Pipe



Cigars, e.g., cigarillos, double coronas, cheroots, stumphen, chuttas and dhumtis.



Biri



Snuff, available in wet and dry form



Betel nut



Chewing tobacco, e.g., plug, loose-leaf, chimo, toombak, guthha or twist.



Betel leaf



Water pipe, also known as shisha, hookah or hubble-bubble

B. Alcohol Consumption

SHOWCARDS

Step	Section	Items
Step 1, alcohol consumption	A	A1-A7



1 Standard bottle
of **regular beer**
(285ml)



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



1 Medium size
glass of **wine**
(120ml)



1 Measure of
aperitif (60ml)

1 standard drink =

Note: Net alcohol content of a standard drink is approximately 10g of ethanol. However, standard drinks in different countries can contain different amounts of ethanol. Therefore, countries may have to adapt this measure according to their own standards and will report it measure if different from the standard mentioned above.

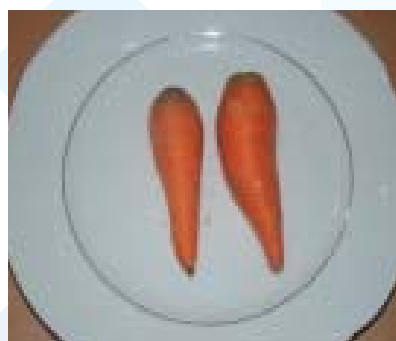
Source: World Health Survey Questionnaire.

C. Diet (Typical Fruit And Vegetables And Serving Sizes)

SHOWCARDS

Step	Section	Items
Step 1, Diet	D	D1 to D6

VEGETABLES



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

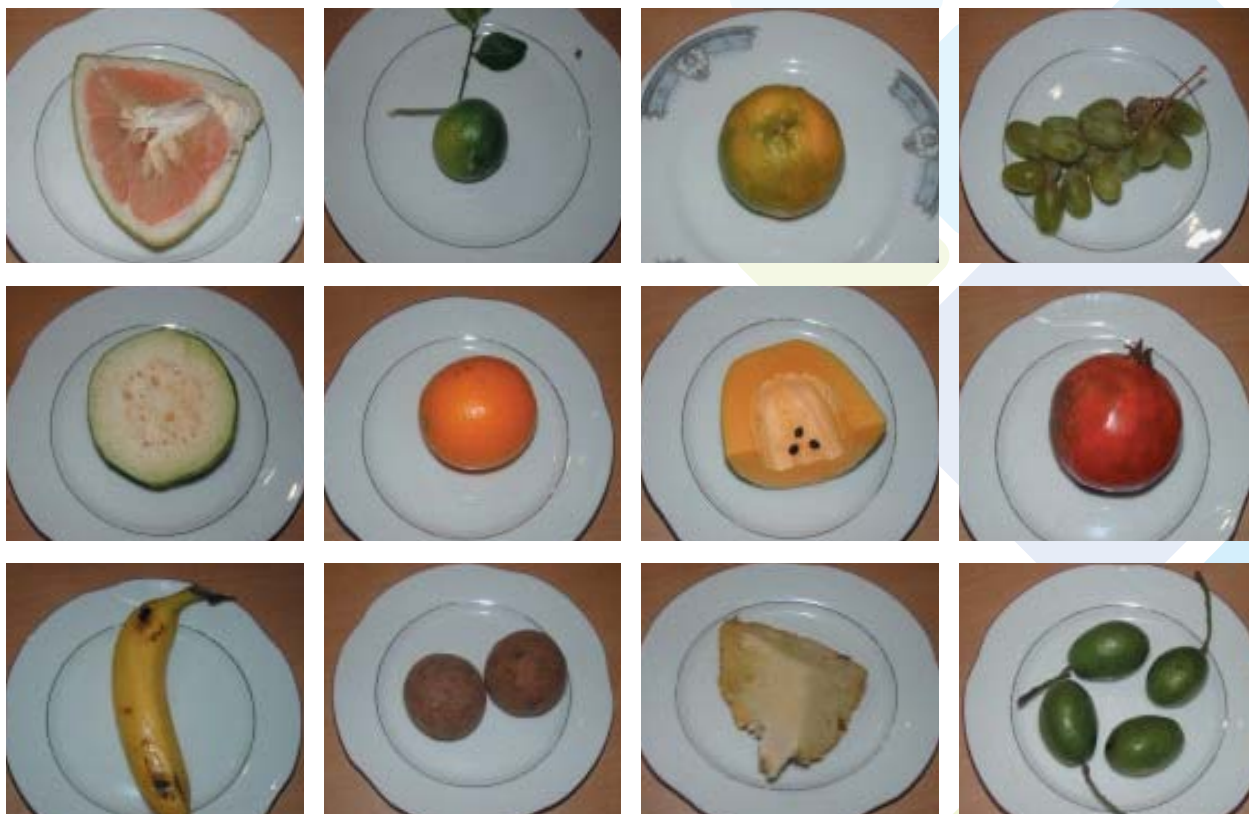


Vegetables	1 Serving size
Raw green leafy vegetables	1 cup
Other vegetables cooked chopped	½ cup
Vegetable Juice	½ cup

SHOWCARDS

Step	Section	Items
Step 1, Diet	D	D1 to D6

FRUITS



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

Fruits	1 Serving size
Apple, Banana, Orange	1 medium size piece
Chopped, Cooked or caned fruit	½ cup
Fruit Juice	½ cup Not artificially flavored

D. Typical Physical Activities

Examples: The following pictures show a few selected examples of physical activity show cards that have been developed and used by different countries.

SHOWCARDS

Step		Section	Items
Step 1, Physical Activity		P	P1 to P16b

WORK RELATED PHYSICAL ACTIVITY		LEISURE/SPARE TIME RELATED PHYSICAL ACTIVITY	
MODERATE Intensity Activities Makes you breathe somewhat harder than normal	VIGOROUS Intensity Activities Makes you breathe much harder than normal	MODERATE Intensity Activities Makes you breathe somewhat harder than normal	VIGOROUS Intensity Activities Makes you breathe somewhat harder than normal
Examples: <ul style="list-style-type: none"> ● Cleaning (vacuuming, mopping, polishing, scrubbing, sweeping, ironing) ● Washing (beating and brushing carpets, wringing clothes by hand) ● Gardening ● Milking cows (by hand) ● Planting and harvesting crops ● Digging dry soil (with spade) ● Weaving ● Woodwork (chiselling, sawing softwood) ● Mixing cement (with shovel) ● Labouring (pushing loaded wheelbarrow, operating jack hammer) ● Walking with load on head ● Drawing water ● Tending animals 	Examples: <ul style="list-style-type: none"> ● Forestry (cutting, chopping, carrying wood) ● Sawing hardwood ● Ploughing ● Cutting crops (sugar cane) ● Gardening (digging) ● Grinding (with pestle) ● Labouring (shovelling sand) ● Loading furniture (stoves, fridge) ● Instructing spinning (fitness) ● Instructing sports acrobatics ● Sorting postal parcels (fast pace) ● Cycle rickshaw driving 	Examples: <ul style="list-style-type: none"> ● Cycling ● Jogging ● Dancing ● Horse-riding ● Tai chi ● Yoga ● Pilates ● Low-impact aerobics ● Cricket 	Examples: <ul style="list-style-type: none"> ● Soccer ● Rugby ● Tennis ● High-impact aerobics ● Aqua aerobics ● Ballet dancing ● Fast swimming

Examples of Typical Physical Activities

Examples for moderate activities



Examples of vigorous activities during leisure time



Examples of vigorous activities at work



GLOSSARY OF TERMS

Introduction: This section provides an alphabetical list of all the terms used in a STEPS surveillance with definitions that are appropriate for STEPS.

TERM	DEFINITION
Abdominal obesity	Abdominal obesity was measured by waist circumference (WC) of the subjects. Increased waist circumference is considered if WC ≥ 94 cm in men and ≥ 80 cm in women. Substantially increased waist circumference is considered if WC ≥ 102 cm in men and ≥ 88 cm in women.
Binge drinking	Binge drinking is considered if in a drinking occasion ≥ 5 standard drink consumed by a men and ≥ 4 drinks consumed by a women.
Cluster	A (usually geographical defined) group of individuals.
Cross-sectional design	A study design based on observations at a single point in time. STEPS surveys will be cross-sectional unless they are especially being extended to follow the sample over time.
Current smokeless tobacco products user	Smokeless tobacco user who are daily or occasional any smokeless tobacco product user
Current smoker	Smoker who are daily or occasional smokers of any smoking tobacco products.
Diabetes mellitus	A person was considered diabetic if any health personnel told after measuring BP that s/he had diabetes or not. If a person reported to have been told by any health personnel, or taking any treatment for diabetes were considered as diabetic.
Enumeration area	A small to medium sized geographic area that has been defined in a census.
Exposure to secondhand smoke (SHS) at workplace	Who saw somebody smoking or smelled tobacco smoke, or saw tobacco butts inside (indoor areas) the workplace in the past 30 days.
Exposure to secondhand smoke at home	Who were exposed to SHS inside the respondent's home which does not include areas outside such as patios, balcony, garden, etc. that are not fully enclosed.
High blood pressure	See Hypertension
Hypertension	Hypertension was measured if blood pressure was $\geq 140/90$ mmHg. Respondents who were taking any medicine were also considered as hypertensive.

Kish method	The Kish method is a sampling method for selecting an individual randomly from a household. It uses a pre-determined table to select an individual based on the number of individuals living in the household.
Mean	The arithmetic mean is the average of a set of values, that is, the sum of all the values divided by number of values. Because of its simplicity and its statistical properties, it is used more than any of the other measures of central tendency (e.g. median).
MET	Metabolic equivalent (MET) is the ratio of a person's working metabolic rate relative to the resting metabolic rate. One MET is defined as the energy cost of sitting quietly, and is equivalent to a caloric consumption of 1 kcal/kg/hour.
Moderate intensity physical activity	Refers to activities which take moderate physical effort and that make you breathe somewhat harder than normal. Examples include cleaning, vacuuming, polishing, gardening, cycling at a regular pace or horse riding. Moderate intensity activities require an energy expenditure of approximately 3-6 METs.
Obesity	Obesity was determined by using the standard BMI Cutoff. A person is considered obese if the BMI measured ≥ 30.0 .
Participant	An individual who responds to the STEPS Instrument.
Pilot test	A small trial run or "dress rehearsal" of an entire process, e.g. data collection or data entry, completed before the process officially begins.
Prevalence	The number of persons with a disease or an attribute in a given population at a designated time, e.g. % daily smoker in a country in 2008.
Primary sampling unit (PSU)	The sampling units for the first stage of sampling in a multi-stage sample design. See multi-stage sample design.
Probability proportional to size (PPS)	Probability proportional to size (PPS) sampling is a method for selecting a sampling unit in which the probability of selection for a given sampling unit is proportional to its size (most often the number of individuals or households within the sampling unit).
Representativeness	The extent to which a sample has the same distribution of the characteristics of interest as the target population from which it was selected.
Risk factor	Refers to any attribute, characteristic, or exposure of an individual, which increases the likelihood of developing a disease, or other unwanted condition/event.
Secondary sampling units (SSU)	The sampling units used for selection after the primary sampling units.
Serving (of fruit or vegetable)	For vegetables this refers to one cup of raw, leafy green vegetables (spinach, salad etc.), one half cup of other vegetables, cooked or raw (tomatoes, pumpkin, beans etc.), or a half cup of vegetable juice. For fruits, this refers to one medium-sized piece of fruit (banana, apple, kiwi etc.) or a half cup of raw, cooked or canned fruit or a half cup of juice from a fruit (not artificially flavored).

Smokeless tobacco use frequency	Classified into three categories, i.e., 1) Daily smokeless tobacco use means smokeless tobacco use at least one smokeless tobacco product every day over a period of month or more 2) Occasional smokeless tobacco use (/ less than daily) 3) Never smokeless tobacco users means person has never tried smokeless tobacco products or have just tried once or twice in lifetime.
Smoking frequency	Classified into three categories, i.e., 1) Daily smoking means smoking at least one tobacco product every day over a period of month or more 2) Occasional smoking (/ less than daily) 3) Never smoking means person has never tried smoking or have just tried once or twice in lifetime.
Standard drink	The net alcohol content of a standard drink is generally 10g of ethanol depending on the country/site. This is the equivalent of 1 regular beer (285ml), a single measure of spirits (30 ml), a medium-sized glass of wine (120 ml), or a measure of aperitif (60 ml).
Target population	The population from which the sample population is drawn. If the sample has been drawn correctly, the estimates obtained from the survey should be representative of the target population.
Tobacco products	Two types of tobacco products, i.e. 1) Smoked tobacco: it includes manufactured cigarettes, bidi, hookkah (Water pipes) hand - rolled cigarettes, pipes full of tobacco, cigars, cheroots or, cigarillos and any others. Others includes dhaba (water pipes made of bamboo), 2) Smokeless tobacco: it includes-jarda, sada pata, gul, khoinee and others. Other includes different brands of jarda, pan masala etc.
Vigorous intensity activity	Refers to activities which take hard physical effort and which make you breathe much harder than normal. Examples include loading furniture, digging, playing football, tennis or fast swimming. Vigorous activities require an energy expenditure of greater than 8 METs.

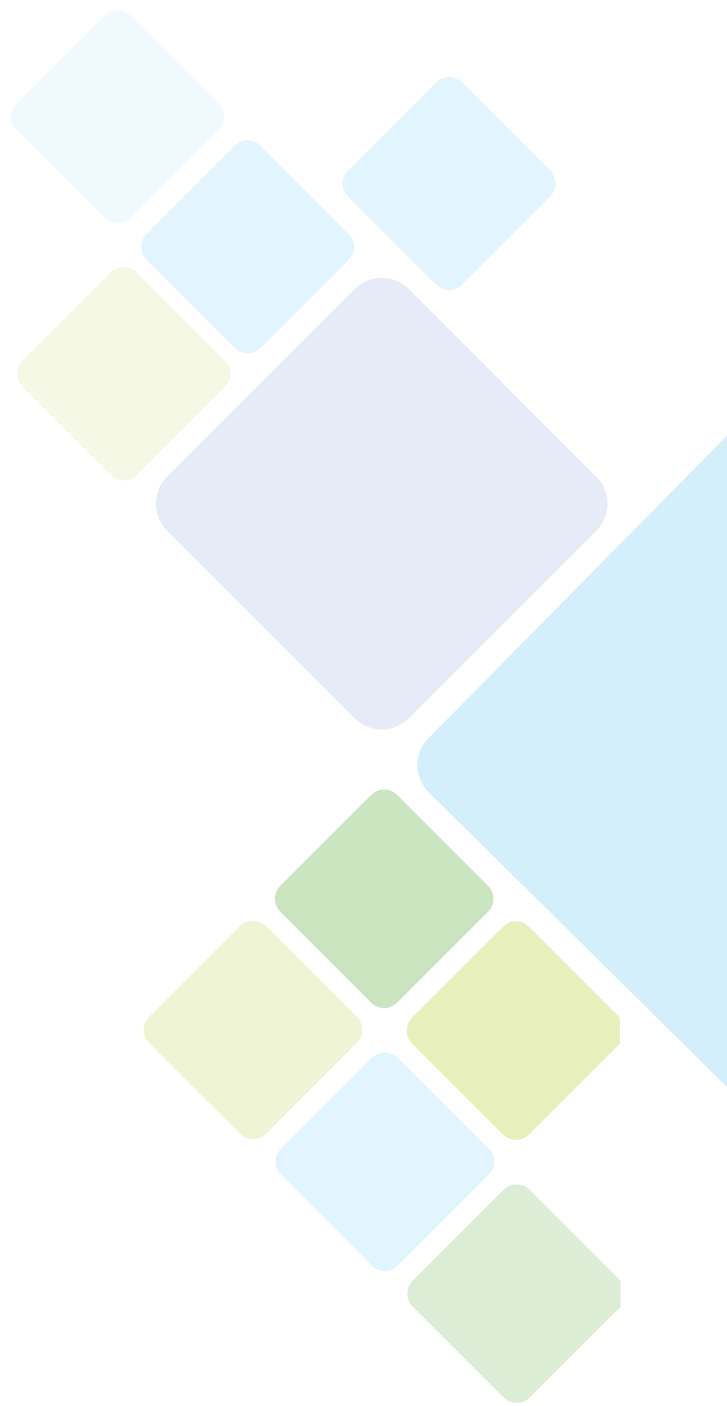


Table 1.1: Distribution of the respondents by age, residence and sex

	Men (n = 4 312) n (%)	Women (n = 4 963) n (%)	Both sexes (n = 9 275) n (%)
<i>Age groups</i>			
25 - 34	1 172 (27.2)	1 992 (40.1)	3 164 (34.1)
35 - 44	1 076 (25.0)	1 455 (29.3)	2 531 (27.3)
45 - 54	971 (22.5)	876 (17.7)	1 847 (19.9)
55 - 64	585 (13.6)	430 (8.7)	1 015 (10.9)
65 +	508 (11.8)	210 (4.2)	718 (7.7)
<i>Residence</i>			
Urban	2 175 (50.4)	2 454 (49.4)	4 629 (49.9)
Rural	2 137 (49.5)	2 509 (50.5)	4 646 (50.1)
Total	4 312 (100)	4 963 (100)	9 275 (100)

Table 1.2: Level of education of respondents*

Age (years)	Number	No formal schooling	Less than primary school	Primary school completed	Less than secondary school	Secondary or above
<i>Men</i>						
25 – 34	1 172	356 (30.4)	180 (15.4)	149 (12.7)	237 (20.2)	250 (21.3)
35 – 44	1 076	395 (36.7)	158 (14.7)	111 (10.3)	190 (17.7)	222 (20.6)
45 – 54	971	400 (41.2)	131 (13.5)	101 (10.4)	166 (17.1)	173 (17.8)
55 – 64	585	229 (39.1)	80 (13.7)	62 (10.6)	85 (14.5)	129 (22.1)
65 +	508	249 (49.0)	90 (17.7)	45 (8.9)	65 (12.8)	59 (11.6)
Total	4 312	1 629 (37.8)	639 (14.8)	468 (10.9)	743 (17.2)	833 (19.3)
<i>Women</i>						
25 – 34	1 992	525 (26.4)	418 (21.0)	278 (14.0)	479 (24.0)	292 (14.7)
35 – 44	1 455	726 (49.9)	215 (14.8)	150 (10.3)	190 (13.1)	174 (12.0)
45 – 54	876	530 (60.5)	123 (14.0)	82 (9.4)	70 (8.0)	71 (8.1)
55 – 64	430	306 (71.2)	52 (12.1)	27 (6.3)	25 (5.8)	20 (4.7)
65 +	210	172 (81.9)	16 (7.6)	8 (3.8)	13 (6.2)	1 (0.5)
Total	4 963	2 259 (45.1)	824 (16.6)	545 (11.0)	777 (15.7)	558 (11.2)
<i>Both Sexes</i>						
25 – 34	3 164	881 (27.8)	598 (18.9)	427 (13.5)	716 (22.6)	542 (17.1)
35 – 44	2 531	1 121 (44.3)	373 (14.7)	261 (10.3)	380 (15.0)	396 (15.9)
45 – 54	1 847	930 (50.4)	254 (13.8)	183 (9.9)	236 (12.8)	244 (13.2)
55 – 64	1 015	535 (52.7)	132 (13.0)	89 (8.8)	110 (10.8)	149 (14.7)
65 +	718	421 (58.6)	106 (14.8)	53 (7.4)	78 (10.9)	60 (8.4)
Total	9 275	3 888 (41.9)	1 463 (15.8)	1 013 (10.9)	1 520 (16.4)	1 391 (15.0)

*Results are n (%)

Table 1.3: Distribution of the respondents by principal occupation*

Age (years)	Number	Govt. employee	Non-govt. employee	Business (small)	Business (large)	Farmers	Labourer (agricultural/Industrial)	Labourer (daily)	Self employed	Student	Home-maker	Retired	Unemployed (able to work or not)	Others
<i>Men</i>														
25 – 34	1 172	31 (2.6)	207 (17.7)	237 (20.2)	32 (2.7)	187 (16.0)	91 (7.8)	203 (17.3)	92 (7.8)	25 (2.1)	2 (0.2)	0 (0)	31 (2.7)	34 (2.9)
35 – 44	1 076	38 (3.5)	152 (14.1)	261 (24.3)	55 (5.1)	235 (21.8)	79 (7.4)	148 (13.8)	64 (5.9)	1 (0.1)	2 (0.2)	1 (0.1)	16 (1.4)	24 (2.2)
45 – 54	971	25 (7.4)	88 (9.1)	200 (20.6)	27 (2.8)	256 (26.4)	92 (9.4)	112 (11.5)	62 (6.4)	0 (0)	3 (0.3)	13 (1.3)	20 (2.0)	26 (2.7)
55 – 64	585	25 (4.3)	54 (9.2)	87 (14.9)	24 (4.1)	174 (29.7)	42 (7.2)	39 (6.7)	16 (2.7)	0 (0)	5 (0.9)	70 (12.0)	35 (6.0)	14 (2.4)
65 +	508	2 (0.4)	6 (1.2)	43 (8.5)	6 (1.2)	132 (26.0)	27 (5.3)	17 (3.3)	12 (2.4)	0 (0)	10 (2.0)	148 (29.1)	94 (18.6)	11 (2.2)
Total	4 312	168 (3.9)	507 (11.8)	828 (19.2)	144 (3.3)	984 (22.8)	331 (7.7)	519 (12.0)	246 (5.7)	26 (0.6)	22 (0.5)	232 (5.4)	196 (4.6)	109 (2.5)
<i>Women</i>														
25 – 34	1 992	22 (1.1)	82 (4.1)	10 (0.5)	0 (0)	4 (0.2)	11 (0.6)	33 (1.7)	32 (1.6)	13 (0.7)	1 661 (83.4)	0 (0)	4 (0.2)	120 (6.0)
35 – 44	1 455	19 (1.3)	48 (3.3)	19 (1.3)	3 (0.2)	6 (0.4)	9 (0.6)	30 (2.1)	35 (2.4)	0 (0)	1 214 (83.4)	0 (0)	1 (0.1)	71 (4.9)
45 – 54	876	14 (1.6)	14 (1.6)	7 (0.8)	0 (0)	3 (0.3)	5 (0.5)	20 (2.3)	14 (1.6)	0 (0)	744 (84.9)	1 (0.1)	4 (0.4)	50 (5.7)
55 – 64	430	1 (0.2)	7 (1.6)	0 (0)	0 (0)	1 (0.2)	1 (0.2)	7 (1.6)	5 (1.2)	0 (0)	371 (86.3)	4 (0.9)	10 (2.3)	23 (5.3)
65 +	210	0 (0)	1 (0.5)	0 (0)	0 (0)	1 (0.5)	0 (0)	2 (1.0)	1 (0.5)	0 (0)	149 (71.0)	8 (3.8)	31 (14.8)	17 (8.1)
Total	4 963	56 (1.1)	152 (3.1)	36 (0.7)	3 (0.1)	15 (0.3)	26 (0.5)	92 (1.9)	87 (1.8)	13 (0.3)	4 139 (83.4)	13 (0.3)	50 (1.0)	281 (5.7)
<i>Both Sexes</i>														
25 – 34	3 164	53 (1.7)	289 (9.1)	247 (7.8)	32 (1.0)	191 (6.0)	102 (3.2)	236 (7.5)	124 (3.9)	38 (1.2)	1 663 (52.6)	0 (0)	35 (1.1)	154 (4.9)
35 – 44	2 531	57 (2.3)	200 (7.9)	280 (11.1)	58 (2.3)	241 (9.5)	88 (3.5)	178 (7.0)	99 (3.9)	1 (0)	1 216 (48.0)	1 (0)	17 (0.7)	95 (3.8)
45 – 54	1 847	86 (4.7)	102 (5.5)	207 (11.2)	27 (1.5)	259 (14.0)	97 (5.2)	132 (7.1)	76 (4.1)	0 (0)	747 (40.4)	14 (0.8)	24 (1.2)	76 (4.1)
55 – 64	1 015	26 (2.6)	61 (6.0)	87 (8.6)	24 (2.4)	175 (17.2)	43 (4.2)	46 (4.5)	21 (2.1)	0 (0)	376 (37.0)	74 (7.3)	45 (4.5)	37 (3.6)
65 +	718	2 (0.3)	7 (1.0)	43 (6.0)	6 (0.8)	133 (18.5)	27 (3.7)	19 (2.6)	13 (1.8)	0 (0)	159 (22.1)	156 (21.7)	125 (17.4)	28 (3.9)
Total	9 275	224 (2.4)	659 (7.1)	864 (9.3)	147 (1.6)	999 (10.8)	357 (3.8)	611 (6.6)	333 (3.6)	39 (0.4)	4 161 (44.9)	245 (2.6)	246 (2.7)	390 (4.2)

*Results are n (%)

Table 1.4: Distribution of the respondents by wealth indices*

Age (years)	Number	Wealth index quartiles**			
		1st	2nd	3rd	4th
Men					
25 – 34	1 172	259 (22.1)	343 (29.3)	319 (27.2)	251 (21.4)
35 – 44	1 076	216 (20.1)	257 (23.9)	311 (28.9)	292 (27.1)
45 – 54	971	196 (20.2)	252 (26.0)	253 (26.1)	270 (27.8)
55 – 64	585	119 (20.3)	129 (22.1)	158 (27.0)	179 (30.6)
65 +	508	127(25.0)	133 (26.2)	139 (27.4)	109 (21.5)
Total	4 312	917 (21.3)	1 114 (25.8)	1 180 (27.4)	1 101 (25.5)
Women					
25 – 34	1 992	566 (28.4)	502 (25.2)	432 (21.7)	492 (24.7)
35 – 44	1 455	363 (24.9)	372 (25.6)	341 (23.4)	379 (26.0)
45 – 54	876	219 (25.0)	217 (24.8)	203 (23.2)	237 (27.1)
55 – 64	430	138 (32.1)	98 (22.8)	97 (22.6)	97 (22.6)
65 +	210	78 (37.1)	53 (25.2)	33 (15.7)	46 (21.9)
Total	4 963	1 364 (27.5)	1 242 (25.0)	1 106 (22.3)	1 251 (25.2)
Both sexes					
25 – 34	3 164	825 (26.1)	845 (26.7)	751 (23.7)	743 (23.5)
35 – 44	2 531	579 (22.9)	629 (24.9)	652 (25.8)	671 (26.5)
45 – 54	1 847	415 (22.5)	469 (25.4)	456 (24.7)	507 (27.4)
55 – 64	1 015	257 (25.3)	227 (22.4)	255 (25.1)	276 (27.2)
65 +	718	205 (28.6)	186 (25.9)	172 (24.0)	155 (21.6)
Total	9 275	2 281 (24.6)	2 356 (25.4)	2 286 (24.6)	2 352 (25.4)

*Results are n (%).

**The wealth index was constructed using principal component analysis. Asset information was collected with the NCD survey questionnaire and covered information on household ownership of a number of items, such as electricity, flush toilet, fixed telephone, cell telephone, television, radio, refrigerator, car, moped/scooter/motorcycle, washing machine, bicycle, sewing machine, almirah/wardrobe, table, bed or cot, chair or bench, watch or clock, as well as the type of main material used for the roof, wall and floor of the main house (cement, tin and katcha such as bamboo/thatched/straw).

Each asset was assigned a weight (factor score) generated through principal components analysis, and the resulting asset scores were standardized in relation to a normal distribution with a mean of zero and standard deviation of one. Each household was then assigned a score for each asset, and the scores were summed for each household; individuals were ranked according to the total score of the household in which they resided. The sample was then divided into quartiles from one (lowest) to four (highest). A single asset index was developed for the whole sample; indices were not prepared for urban and rural populations separately.

Table 2.1: Current smoking status (daily and non-daily) of the respondents

Age (years)	Number	Daily smoker		Daily or non daily smoker	
		n (%)	95% CI	n (%)	95% CI
Men					
25 – 34	1 172	615 (52.5)	49.6, 55.3	638 (54.4)	51.6, 57.3
35 – 44	1 076	632 (58.7)	55.8, 61.6	648 (60.2)	57.3, 63.1
45 – 54	971	561 (57.8)	54.6, 60.8	570 (58.7)	55.6, 61.8
55 – 64	585	306 (52.3)	48.3, 56.3	313 (53.5)	49.4, 57.5
65 +	508	186 (36.6)	32.5, 40.9	196 (38.6)	34.4, 42.9
Total	4 312	2 300 (53.3)	51.8, 54.8	2 365 (54.8)	52.7, 57.1
Women					
25 – 34	1 992	6 (0.3)	0.1, 0.7	8 (0.4)	0.2, 0.8
35 – 44	1 455	14 (1.0)	0.6, 1.6	18 (1.2)	0.8, 2.0
45 – 54	876	15 (1.7)	1.0, 2.8	15 (1.7)	1.0, 2.8
55 – 64	430	8 (1.9)	0.9, 3.7	10 (2.3)	1.3, 4.3
65 +	210	13 (6.2)	3.6, 10.4	13 (6.2)	3.6, 10.4
Total	4 963	56 (1.1)	0.9, 1.5	64 (1.3)	1.0, 1.6
Both sexes					
25 – 34	3 164	621 (19.6)	18.3, 21.0	646 (20.4)	19.0, 21.9
35 – 44	2 531	646 (25.5)	23.9, 27.3	666 (26.3)	24.6, 28.1
45 – 54	1 847	576 (31.2)	29.1, 33.3	585 (31.7)	29.6, 33.8
55 – 64	1 015	314 (30.9)	28.2, 33.8	323 (31.8)	29.0, 34.8
65 +	718	199 (27.7)	24.6, 31.1	209 (29.1)	25.9, 32.5
Total	9 275	2 356 (25.4)	24.5, 26.3	2 429 (26.2)	25.2, 27.3

Table 2.2: Age of initiation and duration of smoking (in years) of the daily smokers

Age (years)	Men			Women*			Both Sexes		
	Number	Mean	95% CI	Number	Mean	95% CI	Number	Mean	95% CI
Age of Initiation									
25 – 34	614	17.8	17.4, 18.1	4	19.3	16.0, 22.5	618	17.8	17.4, 18.1
35 – 44	627	18.7	18.3, 19.1	12	24.3	20.7, 28.0	639	18.8	18.4, 19.2
45 – 54	561	18.4	17.9, 18.9	13	17.8	12.4, 23.1	574	18.4	17.9, 18.9
55 – 64	306	18.2	17.5, 18.9	6	34.3	24.3, 44.4	312	18.5	17.8, 19.3
65 +	186	18.9	17.8, 20.1	9	25.3	15.7, 34.9	195	19.2	18.0, 20.5
Total	2 294	18.3	18.1, 18.6	44	23.5	20.1, 23.9	2 338	18.4	18.2, 18.7
Duration of smoking (in years)									
25 – 34	614	11.8	11.4, 12.1	4	12.8	10.9, 14.6	618	11.8	11.4, 12.2
35 – 44	627	20.5	20.1, 21.0	12	15.2	11.2, 19.1	639	20.4	20.0, 20.9
45 – 54	561	30.7	30.2, 31.3	13	32.8	27.9, 37.7	574	30.8	30.2, 31.3
55 – 64	306	40.4	39.6, 41.2	6	22.5	11.6, 33.4	312	40.1	39.2, 40.9
65 +	186	53.0	51.6, 54.5	9	43.7	33.5, 53.8	195	52.6	51.1, 54.1
Total	2 294	26.0	25.4, 26.5	44	27.0	22.4, 31.5	2 338	26.0	25.4, 26.6
	n %		95% CI		n %		95% CI	n %	
Age of initiation at ≤ 15 years									
25 – 34	614	211 (34.4)	30.7, 38.2	4	1 (25.0)	3.3, 76.3	618	212 (34.3)	30.7, 38.1
35 – 44	627	198 (31.6)	28.1, 35.3	12	1 (8.3)	1.2, 41.4	639	199 (31.1)	27.7, 34.8
45 – 54	561	197 (35.1)	31.3, 39.2	13	7 (53.8)	28.1, 77.6	574	204 (35.5)	31.7, 39.5
55 – 64	306	113 (36.9)	31.7, 42.5	6	1 (16.7)	2.3, 63.2	312	114 (36.5)	31.4, 42.0
65 +	186	77 (41.4)	34.5, 48.6	9	4 (44.4)	17.7, 74.9	195	81 (41.5)	34.8, 48.6
Total	2 294	796 (34.7)	32.8, 36.7	44	14 (31.8)	19.8, 46.8	2 338	810 (34.6)	32.7, 36.6

* Low prevalence among women contribute to wider interval

Note: 2 338 among the smokers responded to this questions but remaining 18 respondents (6 men and 12 women) answered as "don't know"

Table 2.3: Distribution of daily smokers by use of smoking tobacco products

Age (years)	Cigarette			Bidi		Others	
	Number	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI
<i>Men</i>							
25-34	615	491 (79.8)	76.5, 82.9	195 (31.7)	28.1, 35.5	38 (6.2)	4.5, 8.3
35-44	632	446 (70.6)	66.9, 74.0	253 (40.0)	36.3, 43.9	37 (5.9)	33.8, 41.3
45-54	561	360 (64.2)	60.1, 68.1	269 (48.0)	43.8, 52.1	37 (6.6)	4.8, 8.9
55-64	306	198 (64.7)	59.2, 69.9	155 (50.7)	45.1, 56.2	23 (7.5)	4.9, 10.9
65+	186	93 (50.0)	42.8, 57.2	112 (60.2)	53.1, 67.1	17 (9.1)	5.6, 14.0
Total	2 300	1 588 (69.0)	67.1, 70.9	984 (42.8)	40.8, 44.8	152 (6.6)	5.6, 7.7
<i>Women</i>							
25-34	6	1 (16.7)	0.8, 59.1	3 (50.0)	14.7, 85.3	3 (50.0)	14.7, 85.3
35-44	14	4 (28.6)	9.8, 55.5	5 (35.7)	14.4, 62.4	5 (35.7)	14.4, 62.4
45-54	15	0 (0.0)	0, 18.1	14 (93.3)	71.3, 99.7	2 (13.3)	2.3, 37.5
55-64	8	0 (0.0)	0, 31.2	7 (87.5)	51.9, 99.4	1 (12.5)	0.6, 48.0
65+	13	2 (15.4)	2.7, 42.0	10 (76.9)	49.1, 93.8	1 (7.7)	0.4, 32.5
Total	56	7 (12.5)	5.6, 23.2	39 (69.6)	56.7, 80.6	11 (19.6)	10.8, 31.6
<i>Both sexes</i>							
25-34	621	492 (79.2)	76.0, 82.3	198 (31.9)	28.1, 35.6	41 (6.6)	4.8, 8.8
35-44	646	450 (69.7)	66.0, 73.1	258 (39.9)	36.2, 43.8	42 (6.5)	4.8, 8.6
45-54	576	360 (62.5)	58.5, 66.4	283 (49.1)	45.0, 53.2	39 (6.8)	4.9, 9.0
55-64	314	198 (63.1)	57.6, 68.3	162 (51.6)	46.1, 57.1	23 (7.3)	4.8, 10.6
65+	199	95 (47.7)	40.9, 54.7	122 (61.3)	54.4, 67.9	18 (9.0)	5.6, 13.7
Total	2 356	1 595 (67.7)	65.8, 69.6	1 023 (43.4)	41.4, 45.4	163 (6.9)	5.9, 8.0

Table 2.4: Frequency of smoking per day of the daily smokers

Age (years)	Manufactured cigarettes			Biris			Other smoked tobaccos*		
	Number	Mean	95% CI	Number	Mean	95% CI	Number	Mean	95% CI
<i>Men</i>									
25 – 34	491	9.0	8.4, 9.6	195	12.4	11.3, 13.6	38	1.4	1.2, 1.6
35 – 44	446	10.3	9.6, 10.9	253	14.6	13.5, 15.8	37	1.5	1.3, 1.8
45 – 54	360	10.1	9.3, 10.8	269	13.4	12.4, 14.4	37	1.5	1.4, 1.7
55 – 64	198	9.3	8.1, 10.6	155	12.3	11.0, 13.6	23	1.5	1.4, 1.6
65 +	93	7.0	5.7, 8.2	112	11.5	9.7, 13.3	17	1.9	1.5, 2.3
Total	1 588	9.5	9.2, 9.9	984	13.1	12.6, 13.7	152	1.5	1.4, 1.6
<i>Women</i>									
25 – 34	1	10.0	-	3	3.7	3.1, 4.2	3	1.9	0.1, 3.6
35 – 44	4	13.0	3.2, 22.8	5	4.0	2.9, 5.1	5	1.8	0.8, 2.7
45 – 54	0	-	-	14	7.1	3.3, 11.0	2	0.9	0.8, 1.0
55 – 64	0	-	-	7	4.3	1.9, 6.7	0	-	-
65 +	2	5.5	0.6, 10.4	10	5.2	3.1, 7.3	1	1.4	-
Total	7	10.4	4.2, 16.7	39	5.5	3.9, 7.1	11	1.6	0.9, 2.3
<i>Both Sexes</i>									
25 – 34	492	9.0	8.4, 9.6	198	12.3	11.1, 13.4	41	1.5	1.3, 1.7
35 – 44	450	10.3	9.7, 11.0	258	14.4	13.3, 15.6	42	1.5	1.3, 1.8
45 – 54	360	10.1	9.3, 10.8	283	13.1	12.1, 14.1	39	1.5	1.3, 1.6
55 – 64	198	9.3	8.1, 10.6	162	11.9	10.7, 13.2	23	1.5	1.4, 1.6
65 +	95	6.9	5.7, 8.2	122	11.0	9.3, 12.7	18	1.8	1.5, 2.2
Total	1 595	9.5	9.2, 9.9	1 023	12.8	12.3, 13.4	163	1.5	1.4, 1.6

*Other smoked tobaccos include hukkah/dhaba, pipes of tobacco, hand rolled cigarettes and others

Table 2.5: Distribution of the respondents by ex-daily smoking status

Age (years)	Men			Women			Both Sexes		
	Number	n (%)	95% CI	Number	n (%)	95% CI	Number	n (%)	95% CI
25 – 34	1 172	65 (5.5)	4.4, 7.0	1 992	1 (0.1)	0, 0.4	3 164	66 (2.1)	1.6, 2.6
35 – 44	1 076	88 (8.2)	6.7, 10.0	1 455	6 (0.4)	0.2, 0.9	2 531	94 (3.7)	3.0, 4.5
45 – 54	971	150 (15.4)	13.3, 17.9	876	7 (0.8)	0.4, 1.7	1 847	157 (8.5)	7.3, 9.9
55 – 64	585	152 (26.0)	22.6, 29.7	430	13 (3.0)	1.8, 5.1	1 015	165 (16.3)	14.1, 18.7
65 +	508	211 (41.5)	37.3, 45.9	210	7 (3.3)	1.6, 6.8	718	218 (30.4)	27.1, 33.8
Total	4 312	666 (15.4)	14.4, 16.6	4 963	34 (0.7)	0.5, 1.0	9 275	700 (7.5)	7.0, 8.1

Table 2.6: Prevalence of current and ex-use of smokeless tobacco among all respondents

Age (years)	Number	Current User				Ex-daily user	
		Daily		Daily or non daily		n (%)	95% CI
		n (%)	95% CI	n (%)	95% CI		
Men							
25 – 34	1 172	185 (15.8)	13.8, 18.0	215 (18.3)	16.2, 20.7	34 (2.9)	2.1, 4.0
35 – 44	1 076	255 (23.7)	21.3, 26.3	276 (25.7)	23.1, 28.3	33 (3.1)	2.2, 4.3
45 – 54	971	309 (31.8)	29.0, 34.8	332 (34.2)	31.3, 37.2	48 (4.9)	3.7, 6.5
55 – 64	585	224 (38.3)	34.4, 42.3	237 (40.5)	36.6, 44.5	44 (7.5)	5.6, 10.0
65 +	508	198 (39.0)	34.8, 43.3	208 (40.9)	36.7, 45.3	61 (12.0)	9.5, 15.1
Total	4 312	1 171 (27.2)	25.8, 28.5	1 268 (29.4)	28.1, 30.8	220 (5.1)	4.5, 5.8
Women							
25 – 34	1 992	305 (15.3)	13.8, 17.0	327 (16.4)	14.9, 18.1	11 (0.6)	0.3, 1.0
35 – 44	1 455	514 (35.3)	32.9, 37.8	531 (36.5)	34.1, 39.0	26 (1.8)	1.2, 2.6
45 – 54	876	428 (48.9)	45.6, 52.2	435 (49.7)	46.4, 53.0	24 (2.7)	1.8, 4.1
55 – 64	430	240 (55.8)	51.1, 60.4	245 (57.0)	52.2, 61.6	15 (3.5)	2.1, 5.7
65 +	210	130 (61.9)	55.2, 68.2	132 (62.9)	56.1, 69.1	11 (5.2)	2.9, 9.2
Total	4 963	1 617 (32.6)	31.3, 33.9	1 670 (33.6)	32.3, 35.0	87 (1.8)	1.4, 2.2
Both sexes							
25 – 34	3 164	490 (15.5)	14.3, 16.8	542 (17.1)	15.9, 18.5	45 (1.4)	1.1, 1.9
35 – 44	2 531	769 (30.4)	28.6, 32.2	807 (31.9)	30.1, 33.7	59 (2.3)	1.8, 3.0
45 – 54	1 847	737 (39.9)	37.7, 42.2	767 (41.5)	39.3, 43.8	72 (3.9)	3.1, 4.9
55 – 64	1 015	464 (45.7)	42.7, 48.8	482 (47.5)	44.4, 50.6	59 (5.8)	4.5, 7.4
65 +	718	328 (45.7)	42.1, 49.3	340 (47.4)	43.7, 51.0	72 (10.0)	8.0, 12.4
Total	9 275	2 788 (30.1)	29.1, 31.0	2 938 (31.7)	30.7, 32.6	307 (3.3)	3.0, 3.7

Table 2.7: Frequency of use of various tobacco products by daily smokeless tobacco users

Age (years)	Jarda			Sadapata			Gul			Other smokeless tobaccos*		
	Number	Mean	95% CI	Number	Mean	95% CI	Number	Mean	95% CI	Number	Mean	95% CI
<i>Men</i>												
25 – 34	164	5.6	4.9, 6.4	32	6.1	4.2, 8.1	47	5.8	4.4, 7.2	12	1.3	1.1, 1.4
35 – 44	214	6.2	5.5, 6.8	67	6.1	4.8, 7.4	67	4.7	3.9, 5.5	17	1.4	1.3, 1.4
45 – 54	269	7.3	6.6, 8.0	84	7.5	5.8, 9.1	71	4.0	3.2, 4.8	21	1.3	1.2, 1.4
55 – 64	186	6.3	5.6, 6.9	71	5.2	4.1, 6.2	48	3.8	2.8, 4.8	25	1.3	1.3, 1.4
65 +	161	6.2	5.5, 7.0	98	5.7	4.7, 6.6	34	2.7	1.9, 3.5	22	1.4	1.3, 1.5
Total	994	6.4	6.1, 6.8	352	6.1	5.5, 6.7	267	4.3	3.8, 4.7	97	1.3	1.3, 1.4
<i>Women</i>												
25 – 34	205	5.8	5.2, 6.3	90	7.1	6.3, 7.8	44	4.2	3.2, 5.3	1	0.3	-
35 – 44	343	6.2	5.8, 6.6	157	7.8	7.0, 8.5	75	4.6	3.8, 5.5	1	0.3	-
45 – 54	235	6.4	5.9, 6.9	188	8.5	7.7, 9.3	75	4.9	4.0, 5.8	4	1.0	0.8, 1.2
55 – 64	107	6.5	5.7, 7.2	132	7.0	6.3, 7.7	35	4.9	3.2, 6.6	3	1.4	0.4, 2.5
65 +	64	6.4	5.5, 7.3	65	6.7	5.7, 7.7	16	5.3	3.1, 7.5	0	-	-
Total	954	6.2	5.9, 6.4	632	7.6	7.2, 8.0	245	4.7	4.2, 5.2	9	1.0	0.6, 1.4
<i>Both sexes</i>												
25 – 34	369	5.7	5.3, 6.1	122	6.8	6.1, 7.6	91	5.0	4.2, 5.9	13	1.2	1.0, 1.4
35 – 44	557	6.2	5.8, 6.5	224	7.3	6.6, 7.9	142	4.7	4.1, 5.3	18	1.3	1.2, 1.4
45 – 54	504	6.9	6.5, 7.3	272	8.2	7.4, 8.9	146	4.5	3.8, 5.1	25	1.3	1.2, 1.3
55 – 64	293	6.3	5.8, 6.8	203	6.3	5.8, 6.9	83	4.3	3.3, 5.2	28	1.4	1.2, 1.5
65 +	225	6.3	5.7, 6.9	163	6.1	5.4, 6.8	50	3.6	2.6, 4.5	22	1.4	1.3, 1.5
Total	1 948	6.3	6.1, 6.5	984	7.1	6.7, 7.4	512	4.5	4.2, 4.8	106	1.3	1.3, 1.4

*Other smokeless tobaccos include snuff, khoinee and others

Table 2.8: Distribution of daily smokeless tobacco users by use of smokeless tobacco products

Age (years)	Number	Jarda		Sada pata		Gul		Others	
		n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI
Men									
25-34	215	164 (76.3)	70.3, 81.6	32 (14.9)	10.6, 20.1	47 (21.9)	16.7, 27.7	12 (5.6)	3.1, 9.3
35-44	276	214 (77.5)	72.3, 82.2	67 (24.3)	19.5, 29.6	67 (24.3)	19.5, 29.6	17 (6.2)	2.4, 7.3
45-54	332	269 (81.0)	76.5, 74.9	84 (25.3)	20.8, 30.2	71 (21.4)	17.2, 26.0	21 (6.3)	4.1, 9.3
55-64	237	186 (78.5)	72.9, 83.4	71 (30.0)	24.4, 36.0	48 (20.3)	15.5, 25.7	25 (10.5)	7.1, 14.9
65+	208	161 (77.4)	71.3, 82.7	98 (47.1)	40.1, 53.9	34 (16.3)	11.8, 21.8	22 (10.6)	6.9, 15.3
Total	1 268	994 (78.4)	76.1, 80.6	352 (27.8)	25.4, 30.3	267 (21.1)	18.9, 23.4	97 (7.6)	6.3, 9.2
Women									
25-34	327	205 (62.7)	57.4, 67.8	90 (27.5)	22.9, 32.6	44 (13.5)	10.1, 17.5	1 (0.3)	0.01, 1.5
35-44	531	343 (64.6)	60.5, 68.6	157 (29.6)	25.8, 33.6	75 (14.1)	11.5, 17.3	1 (0.2)	0.0, 0.9
45-54	435	235 (54.0)	49.3, 58.7	188 (43.2)	38.6, 47.9	75 (17.2)	13.9, 21.0	4 (0.9)	0.3, 2.2
55-64	245	107 (43.7)	37.6, 49.9	132 (53.9)	47.6, 60.1	35 (14.3)	10.3, 19.1	3 (1.2)	0.3, 3.3
65+	132	64 (48.5)	40.1, 57.0	65 (49.2)	40.8, 57.7	16 (12.1)	7.3, 18.5	0 (0.0)	0.0, 2.4
Total	1 670	954 (57.1)	54.7, 59.5	632 (37.8)	35.5, 40.2	245 (14.7)	13.0, 16.4	9 (0.5)	0.3, 1.0
Both sexes									
25-34	542	369 (68.1)	64.1, 71.9	122 (22.5)	19.1, 26.2	91 (16.8)	13.8, 20.1	13 (2.4)	1.3, 4.0
35-44	807	557 (69.0)	65.8, 72.1	224 (27.8)	24.8, 30.9	142 (17.6)	15.1, 20.3	18 (2.2)	1.4, 3.4
45-54	767	504 (65.7)	62.3, 69.1	272 (35.5)	32.1, 38.9	146 (19.0)	16.4, 21.9	25 (3.3)	2.2, 4.7
55-64	482	293 (60.8)	56.4, 65.1	203 (42.1)	37.8, 46.6	83 (17.2)	14.0, 20.8	28 (5.8)	3.9, 8.2
65+	340	225 (66.2)	61.0, 71.0	163 (47.9)	42.7, 53.3	50 (14.7)	11.2, 18.8	22 (6.5)	4.2, 9.5
Total	2 938	1 948 (66.3)	54.6, 68.0	984 (33.5)	31.8, 35.2	512 (17.4)	16.1, 18.8	106 (3.6)	2.9, 4.3

Table 2.9: Distribution of the tobacco users by combination of smoking and smokeless tobacco use

Age (years)	Number	Daily either smoking or smokeless tobacco users		Daily both smoking and smokeless tobacco users		Current tobacco users (any type)	
		n (%)	95% CI	n (%)	95% CI	n (%)	95% CI
Men							
25 – 34	1 172	604 (51.5)	48.7, 54.4	123 (10.5)	8.9, 12.4	731 (62.4)	59.6, 65.1
35 – 44	1 076	619 (57.5)	54.6, 60.5	151 (14.0)	12.1, 16.2	771 (71.7)	68.9, 74.3
45 – 54	971	552 (56.8)	53.7, 59.9	172 (17.7)	15.4, 20.2	726 (74.8)	71.9, 77.4
55 – 64	585	338 (57.8)	53.7, 61.7	103 (17.6)	14.7, 20.9	444 (75.9)	72.3, 79.2
65 +	508	286 (56.3)	51.9, 60.6	61 (12.0)	9.5, 15.1	348 (68.5)	64.3, 72.4
Total	4 312	2 399 (55.6)	54.1, 57.1	610 (14.1)	13.1, 15.2	3 020 (70.0)	67.6, 72.6
Women							
25 – 34	1 992	311 (15.6)	14.1, 17.3	23 (1.2)	0.8, 1.7	334 (16.8)	15.2, 18.5
35 – 44	1 455	520 (35.7)	33.3, 38.2	24 (1.6)	1.1, 2.4	544 (37.4)	34.9, 39.9
45 – 54	876	427 (48.7)	45.4, 52.1	15 (1.7)	1.0, 2.8	442 (50.5)	47.1, 53.8
55 – 64	430	242 (56.3)	51.5, 60.9	9 (2.1)	1.1, 4.0	251 (58.4)	53.7, 62.9
65 +	210	131 (62.4)	55.6, 68.7	7 (3.3)	1.6, 6.8	138 (65.7)	59.0, 71.8
Total	4 963	1 631 (32.9)	31.6, 34.2	78 (1.6)	1.3, 2.0	1 709 (34.4)	32.8, 36.1
Both sexes							
25 – 34	3 164	915 (28.9)	27.4, 30.5	146 (4.6)	3.9, 5.4	1 065 (33.7)	32.0, 35.3
35 – 44	2 531	1 139 (45.0)	43.1, 46.9	175 (6.9)	6.0, 8.0	1 315 (52.0)	50.0, 53.9
45 – 54	1 847	979 (53.0)	50.7, 55.3	187 (10.1)	8.8, 11.6	1 168 (63.2)	61.0, 65.4
55 – 64	1 015	580 (57.1)	54.1, 60.2	112 (11.0)	9.2, 13.1	695 (68.5)	65.5, 71.3
65 +	718	417 (58.1)	54.4, 61.6	68 (9.5)	7.5, 11.8	486 (67.7)	64.2, 71.0
Total	9 275	4 030 (43.5)	42.4, 44.5	688 (7.4)	6.9, 8.0	4 729 (51.0)	49.5, 52.5

Table 2.10: Exposure to secondhand tobacco smoke of smokers and non smokers on one or more days in the past 7 days

Age (years)	Men			Women			Both sexes		
	Number	n (%)	95% CI	Number	n (%)	95% CI	Number	n (%)	95% CI
<i>Overall</i>									
<i>In the home</i>									
25 – 34	1 172	423 (36.1)	32.9, 39.4	1 992	882 (44.3)	43.0, 48.1	3 164	1 305 (41.2)	40.0, 44.0
35 – 44	1 076	352 (32.7)	31.2, 37.9	1 455	672 (46.2)	43.0, 48.9	2 531	1 024 (40.5)	38.8, 43.2
45 – 54	971	291 (30.0)	28.5, 35.3	876	351 (40.1)	38.3, 45.7	1 847	642 (34.8)	34.2, 39.2
55 – 64	585	191 (32.6)	30.0, 38.8	430	140 (32.6)	28.6, 38.5	1 015	331 (32.6)	30.6, 37.3
65 +	508	154 (30.3)	28.2, 37.5	210	58 (27.6)	19.6, 32.6	718	212 (29.5)	26.9, 34.6
Total	4 312	1 411 (32.7)	32.4, 35.7	4 963	2 103 (42.4)	41.4, 44.6	9 275	3 514 (37.9)	37.6, 39.9
<i>In the workplace</i>									
25 – 34	1 172	422 (36.0)	32.7, 39.6	1 992	389 (19.5)	17.6, 21.6	3 164	811 (25.6)	23.9, 27.5
35 – 44	1 076	377 (35.0)	31.6, 38.8	1 455	306 (21.0)	18.7, 23.5	2 531	683 (27.0)	25.0, 29.1
45 – 54	971	301 (31.0)	27.6, 34.7	876	146 (16.7)	14.1, 19.6	1 847	447 (24.2)	22.0, 26.6
55 – 64	585	152 (26.0)	21.9, 30.3	430	54 (12.6)	9.4, 16.4	1 015	206 (20.3)	17.6, 23.3
65 +	508	102 (20.1)	16.4, 24.4	210	19 (9.0)	5.4, 14.1	718	121 (16.9)	14.0, 20.1
Total	4 312	1 354 (31.4)	29.8, 33.1	4 963	914 (18.4)	17.2, 19.9	9 275	2 268 (24.5)	23.5, 25.5
<i>In the home or workplace</i>									
25 – 34	731	422 (57.7)	52.4, 63.5	334	207 (62.0)	53.8, 71.0	1 065	629 (59.1)	54.5, 63.9
35 – 44	771	423 (54.9)	49.7, 60.4	544	310 (57.0)	50.8, 63.7	1 315	733 (55.7)	51.8, 59.9
45 – 54	726	365 (50.3)	45.3, 55.7	442	198 (44.8)	38.8, 51.5	1 168	563 (48.2)	44.3, 52.3
55 – 64	444	217 (48.9)	42.6, 55.8	251	92 (36.7)	29.6, 45.0	695	309 (44.5)	39.6, 49.7
65 +	348	154 (44.3)	37.5, 51.8	138	42 (30.4)	22.0, 41.1	486	196 (40.3)	34.9, 46.4
Total	3 020	1 581 (52.4)	49.8, 55.0	1 709	849 (49.7)	46.4, 53.1	4 729	2 430 (51.4)	49.4, 53.5
<i>Non smoker</i>									
<i>In the home</i>									
25 – 34	534	133 (24.9)	20.9, 29.5	1 984	875 (44.1)	42.0, 48.0	2 518	1 008 (40.0)	37.6, 42.6
35 – 44	428	90 (21.0)	16.9, 25.9	1 437	656 (45.7)	42.2, 49.3	1 865	746 (40.0)	37.2, 43.0
45 – 54	401	74 (18.5)	14.5, 23.2	861	342 (39.7)	33.6, 44.1	1 262	416 (33.0)	29.9, 36.3
55 – 64	272	62 (22.8)	17.5, 29.2	420	132 (31.4)	26.3, 37.3	692	194 (28.0)	22.9, 30.7
65 +	312	73 (23.4)	26.9, 43.3	197	51 (25.9)	29.3, 34.1	509	124 (24.4)	20.3, 29.1
Total	1 947	432 (22.2)	20.1, 24.4	4 899	2 056 (42.0)	40.2, 43.8	6 846	2 488 (36.3)	34.9, 37.8
<i>In the workplace</i>									
25 – 34	534	180 (33.7)	29.0, 39.0	1 984	386 (19.5)	17.6, 21.5	2 518	566 (22.5)	20.7, 24.0
35 – 44	428	145 (33.9)	28.6, 39.9	1 437	299 (20.8)	18.5, 23.3	1 865	444 (23.8)	21.6, 26.0
45 – 54	401	122 (30.4)	25.3, 36.3	861	141 (16.4)	13.3, 19.3	1 262	263 (20.8)	18.4, 23.5
55 – 64	272	62 (22.8)	17.5, 29.2	420	50 (11.9)	8.8, 15.7	692	112 (16.2)	13.1, 29.5
65 +	312	59 (18.9)	14.4, 24.4	197	16 (8.1)	4.6, 13.2	509	75 (14.7)	11.6, 18.5
Total	1 947	568 (29.2)	26.9, 31.7	4 899	892 (18.2)	17.0, 19.4	6 846	1 460 (21.3)	20.3, 22.5
<i>In the home or workplace</i>									
25 – 34	534	240 (44.9)	39.4, 51.0	1 984	908 (45.8)	42.8, 48.8	2 518	1 148 (45.6)	42.9, 48.3
35 – 44	428	181 (42.3)	36.4, 48.9	1 437	680 (47.3)	43.8, 51.0	1 865	861 (46.2)	44.4, 50.7
45 – 54	401	158 (39.4)	33.5, 46.1	861	355 (41.2)	36.0, 44.5	1 262	513 (40.6)	37.2, 44.3
55 – 64	272	91 (33.5)	26.9, 41.1	420	135 (32.1)	27.0, 38.0	692	226 (32.7)	28.5, 37.2
65 +	312	95 (30.4)	24.6, 37.2	197	52 (26.4)	19.7, 34.6	509	147 (28.9)	24.4, 33.9
Total	1 947	765 (39.3)	35.6, 42.4	4 899	2 130 (43.5)	41.7, 45.4	6 846	2 895 (42.3)	40.8, 43.9

Table 3.1: Mean number of days and servings* of fruit and vegetables consumption

Age (years)	Men			Women			Both sexes		
	Number	Mean	95% CI	Number	Mean	95% CI	Number	Mean	95% CI
<i>Number of days in a typical week</i>									
<i>Fruit</i>									
25 – 34	1 172	1.7	1.7, 1.8	1 992	2.0	1.9, 2.0	3 164	1.9	1.8, 1.9
35 – 44	1 076	1.7	1.6, 1.8	1 455	2.0	1.9, 2.1	2 531	1.9	1.8, 1.9
45 – 54	971	1.6	1.5, 1.7	876	1.9	1.8, 2.1	1 847	1.7	1.7, 1.8
55 – 64	585	1.7	1.5, 1.8	430	1.8	1.6, 2.0	1 015	1.7	1.6, 1.8
65 +	508	1.5	1.4, 1.7	210	1.8	1.6, 2.1	718	1.6	1.5, 1.7
Total	4 312	1.7	1.6, 1.7	4 963	1.9	1.9, 2.0	9 275	1.8	1.8, 1.9
<i>Vegetables</i>									
25 – 34	1 172	5.6	5.5, 5.7	1 992	6.4	6.4, 6.5	3 164	6.1	6.1, 6.2
35 – 44	1 076	5.8	5.7, 5.9	1 455	6.4	6.3, 6.5	2 531	6.2	6.1, 6.2
45 – 54	971	5.8	5.7, 5.9	876	6.4	6.3, 6.5	1 847	6.1	6.0, 6.1
55 – 64	585	5.9	5.7, 6.0	430	6.3	6.1, 6.4	1 015	6.0	5.9, 6.1
65 +	508	5.7	5.6, 5.8	210	6.3	6.1, 6.4	718	5.9	5.8, 6.0
Total	4 312	5.7	5.7, 5.8	4 963	6.4	6.4, 6.4	9 275	6.1	6.1, 6.1
<i>Fruit and / or vegetables</i>									
25 – 34	1 172	3.7	3.6, 3.7	1 992	4.2	4.1, 4.2	3 164	4.0	3.9, 4.0
35 – 44	1 076	3.8	3.7, 3.8	1 455	4.2	4.1, 4.3	2 531	4.0	4.0, 4.1
45 – 54	971	3.7	3.6, 3.8	876	4.2	4.1, 4.2	1 847	3.9	3.9, 4.0
55 – 64	585	3.8	3.7, 3.9	430	4.0	3.9, 4.2	1 015	3.9	3.8, 4.0
65 +	508	3.6	3.5, 3.7	210	4.1	3.9, 4.2	718	3.7	3.7, 3.8
Total	4 312	3.7	3.7, 3.7	4 963	4.2	4.1, 4.2	9 275	4.0	3.9, 4.0
<i>Number of servings per day</i>									
<i>Fruit</i>									
25 – 34	1 172	1.6	1.3, 2.0	1 992	1.9	1.5, 2.2	3 164	1.8	1.5, 2.0
35 – 44	1 076	1.7	1.2, 2.1	1 455	2.0	1.5, 2.5	2 531	1.8	1.5, 2.2
45 – 54	971	1.1	0.9, 1.4	876	1.8	1.3, 2.2	1 847	1.4	1.2, 1.7
55 – 64	585	1.3	0.9, 1.6	430	2.2	1.3, 3.1	1 015	1.7	1.2, 2.1
65 +	508	1.2	0.8, 1.6	210	2.3	1.0, 3.5	718	1.5	1.1, 2.0
Total	4 312	1.4	1.3, 1.6	4 963	1.9	1.7, 2.2	9 275	1.7	1.5, 1.8
<i>Vegetables</i>									
25 – 34	1 172	2.3	2.0, 2.7	1 992	2.7	2.4, 2.9	3 164	2.6	2.3, 2.8
35 – 44	1 076	2.1	2.0, 2.2	1 455	2.5	2.2, 2.8	2 531	2.3	2.2, 2.5
45 – 54	971	2.0	1.9, 2.1	876	2.6	2.0, 3.2	1 847	2.3	2.0, 2.6
55 – 64	585	2.0	1.9, 2.1	430	1.9	1.7, 2.0	1 015	1.9	1.8, 2.0
65 +	508	1.9	1.6, 2.2	210	1.5	1.4, 1.6	718	1.7	1.5, 2.0
Total	4 312	2.1	2.0, 2.2	4 963	2.5	2.3, 2.7	9 275	2.3	2.2, 2.4
<i>Fruit and / or vegetables</i>									
25 – 34	1 172	2.0	1.7, 2.2	1 992	2.3	2.1, 2.5	3 164	2.2	2.0, 2.3
35 – 44	1 076	1.9	1.6, 2.1	1 455	2.2	1.9, 2.6	2 531	2.1	1.9, 2.3
45 – 54	971	1.6	1.4, 1.7	876	2.2	1.8, 2.6	1 847	1.9	1.6, 2.0
55 – 64	585	1.6	1.4, 1.8	430	2.1	1.6, 2.5	1 015	1.8	1.6, 2.0
65 +	508	1.5	1.3, 1.8	210	1.9	1.3, 2.5	718	1.6	1.4, 1.9
Total	4 312	1.8	1.7, 1.9	4 963	2.2	2.1, 2.8	9 275	2.0	1.9, 2.1

*One standard serving = 80 grams

- For raw green leafy vegetables, 1 serving = one cup
- For cooked or chopped vegetables, 1 serving = ½ cup
- For fruit (Apple, banana, orange), 1 serving = 1 medium size piece
- For chopped, cooked and canned fruit, 1 serving = ½ cup
- For juice from fruit, 1 serving = ½ cup

Table 3.2: Fruit consumption of the respondents on an average day (in servings)

Age (years)	Number	No fruit		Up to 1 serving		2 servings		3 servings		4 servings		<5 servings		≥5 servings	
		n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI
Men															
25 – 34	1 172	263 (22.4)	20.1, 24.9	632 (53.9)	51.1, 56.8	179 (15.3)	13.3, 17.4	61 (5.2)	4.1, 6.6	21 (1.8)	1.2, 2.7	1 156 (98.6)	97.8, 99.2	16 (1.4)	0.8, 2.2
35 – 44	1 076	270 (25.1)	22.6, 27.8	579 (53.8)	50.8, 56.8	141 (13.1)	11.2, 15.3	43 (4.0)	3.0, 5.3	24 (2.2)	1.5, 3.3	1 057 (98.2)	97.2, 98.9	19 (1.8)	1.1, 2.8
45 – 54	971	289 (29.8)	27.0, 32.7	480 (49.4)	46.3, 52.6	132 (13.6)	11.6, 15.9	36 (3.7)	2.7, 5.1	22 (2.3)	1.5, 3.4	959 (98.8)	97.8, 99.3	12 (1.2)	0.7, 2.2
55 – 64	585	166 (28.4)	24.9, 32.2	304 (52.0)	47.9, 56.0	71 (12.1)	9.7, 15.0	24 (4.1)	2.8, 6.0	13 (2.2)	1.3, 3.8	578 (98.8)	97.5, 99.4	7 (1.2)	0.6, 2.5
65 +	508	159 (31.3)	27.4, 35.5	257 (50.6)	46.2, 54.9	61 (12.0)	9.5, 15.1	15 (3.0)	1.8, 4.8	8 (1.6)	0.8, 3.1	500 (98.4)	96.9, 99.2	8 (1.6)	0.8, 3.1
Total	4 312	1 147 (26.6)	25.3, 27.9	2 252 (52.2)	50.7, 53.7	584 (13.5)	12.6, 14.6	179 (4.2)	3.6, 4.8	88 (2.0)	1.7, 2.5	4 250 (98.6)	98.2, 98.9	62 (1.4)	1.1, 1.8
Women															
25 – 34	1 992	531 (26.7)	24.8, 28.6	957 (48.0)	45.9, 50.2	338 (17.0)	15.4, 18.7	83 (4.2)	3.4, 5.1	26 (1.3)	0.9, 1.9	1 935 (97.1)	96.3, 97.8	57 (2.9)	2.2, 3.7
35 – 44	1 455	376 (25.8)	23.7, 28.2	683 (46.9)	44.4, 49.5	275 (18.9)	17.0, 21.0	57 (3.9)	3.0, 5.0	21 (1.4)	0.9, 2.2	1 412 (97.0)	96.0, 97.8	43 (3.0)	2.2, 4.0
45 – 54	876	231 (26.4)	23.6, 29.4	424 (48.4)	45.1, 51.7	142 (16.2)	13.9, 18.8	35 (4.0)	2.9, 5.5	17 (1.9)	1.2, 3.1	849 (96.9)	95.5, 97.9	27 (3.1)	2.1, 4.5
55 – 64	430	130 (30.2)	26.1, 34.7	206 (47.9)	43.2, 52.6	63 (14.7)	11.6, 18.3	17 (4.0)	2.5, 6.3	2 (0.5)	0.1, 1.8	418 (97.2)	95.2, 98.4	12 (2.8)	1.6, 4.8
65 +	210	60 (28.6)	22.9, 35.0	89 (42.4)	35.9, 49.2	34 (16.2)	11.8, 21.8	13 (6.2)	3.6, 10.4	5 (2.4)	1.0, 5.6	201 (95.7)	92.0, 97.8	9 (4.3)	2.2, 8.0
Total	4 963	1 328 (26.8)	25.5, 28.0	2 359 (47.5)	46.1, 49.8	852 (17.2)	16.1, 18.2	205 (4.1)	3.6, 4.7	71 (1.4)	1.1, 1.8	4 815 (97.0)	96.5, 97.5	148 (3.0)	2.5, 3.5
Both sexes															
25 – 34	3 164	794 (25.1)	23.6, 26.6	1 589 (50.2)	48.5, 52.0	517 (16.3)	15.1, 17.7	144 (4.6)	3.9, 5.3	47 (1.5)	1.1, 2.0	3 091 (97.7)	97.1, 98.2	73 (2.3)	1.8, 2.9
35 – 44	2 531	646 (25.5)	23.9, 27.3	1 262 (49.9)	47.9, 51.8	416 (16.4)	15.0, 17.9	100 (4.0)	3.3, 4.8	45 (1.8)	1.3, 2.4	2 469 (97.6)	96.9, 98.1	62 (2.4)	1.9, 3.1
45 – 54	1 847	520 (28.2)	26.1, 30.2	904 (48.9)	46.7, 51.2	274 (14.8)	13.3, 16.5	71 (3.8)	3.1, 4.8	39 (2.1)	1.5, 2.9	1 808 (97.9)	97.1, 98.5	39 (2.1)	1.5, 2.9
55 – 64	1 015	296 (29.2)	26.4, 32.0	510 (50.2)	47.2, 53.3	134 (13.2)	11.3, 15.4	41 (4.0)	3.0, 5.4	15 (1.5)	0.9, 2.4	996 (98.1)	97.1, 98.8	19 (1.9)	1.2, 2.9
65 +	718	219 (30.5)	27.2, 34.0	346 (48.2)	44.6, 51.8	95 (13.2)	10.9, 15.9	28 (3.9)	2.7, 5.6	13 (1.8)	1.1, 3.1	701 (97.6)	96.2, 98.5	17 (2.4)	1.5, 3.8
Total	9 275	2 475 (26.7)	25.8, 27.6	4 611 (49.7)	48.7, 50.7	1 436 (15.5)	14.8, 16.2	384 (4.1)	3.8, 4.6	159 (1.7)	1.5, 2.0	9 065 (97.7)	97.4, 98.0	210 (2.3)	2.0, 2.6

Table 3.3: Vegetables consumption of the respondents on an average day (in servings)

Age (years)	Number	No vegetables		Up to 1 serving		2 servings		3 servings		4 servings		<5 servings		≥5 servings	
		n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI
Men															
25 – 34	1 172	6 (0.5)	0.2, 1.1	545 (46.5)	43.7, 49.4	330 (28.2)	25.7, 30.8	163 (13.9)	12.0, 16.0	76 (6.5)	5.2, 8.0	1 120 (95.6)	94.2, 96.6	52 (4.4)	3.4, 5.8
35 – 44	1 076	4 (0.4)	0.1, 1.0	503 (46.7)	43.8, 49.7	277 (25.7)	23.2, 28.4	160 (14.9)	12.9, 17.1	73 (6.8)	5.4, 8.5	1 017 (94.5)	93.0, 95.7	59 (5.5)	4.3, 7.0
45 – 54	971	5 (0.5)	0.2, 1.2	449 (46.2)	43.1, 49.4	292 (30.1)	27.3, 33.0	128 (13.2)	11.2, 15.5	52 (5.4)	4.1, 7.0	926 (95.4)	93.8, 96.5	45 (4.6)	3.5, 6.2
55 – 64	585	1 (0.2)	0.0, 1.2	296 (50.6)	46.6, 54.6	159 (27.2)	23.7, 30.9	62 (10.6)	8.3, 13.4	38 (6.5)	4.8, 8.8	556 (95.0)	93.0, 96.5	29 (5.0)	3.5, 7.0
65 +	508	4 (0.8)	0.3, 2.1	303 (59.6)	55.3, 63.8	108 (21.3)	17.9, 25.0	56 (11.0)	8.6, 14.1	24 (4.7)	3.2, 7.0	495 (97.4)	95.6, 98.5	13 (2.6)	1.5, 4.4
Total	4 312	20 (0.5)	0.3, 0.7	2 096 (48.6)	47.1, 50.1	1 166 (27.0)	25.7, 28.4	569 (13.2)	12.2, 14.2	263 (6.1)	5.4, 6.9	4 114 (95.4)	94.7, 96.0	198 (4.6)	4.0, 5.3
Women															
25 – 34	1 992	0 (0)	-	809 (40.6)	38.5, 42.8	555 (27.9)	25.9, 29.9	379 (19.0)	17.4, 20.8	94 (4.7)	3.9, 5.7	1 837 (92.2)	91.0, 93.3	155 (7.8)	6.7, 9.0
35 – 44	1 455	1 (0.1)	0.0, 0.5	613 (42.1)	39.6, 44.7	406 (27.9)	25.7, 30.3	289 (19.9)	17.9, 22.0	74 (5.1)	4.1, 6.3	1 383 (95.1)	93.8, 96.1	72 (4.9)	3.9, 6.2
45 – 54	876	2 (0.2)	0.1, 0.9	370 (42.2)	39.0, 45.5	264 (30.1)	27.2, 33.3	158 (18.0)	15.6, 20.7	40 (4.6)	3.4, 6.2	834 (95.2)	93.6, 96.4	42 (4.8)	3.6, 6.4
55 – 64	430	0 (0)	-	209 (48.6)	43.9, 53.3	125 (29.1)	25.0, 33.5	71 (16.5)	13.3, 20.3	14 (3.3)	1.9, 5.4	419 (97.4)	95.4, 98.6	11 (2.6)	1.4, 4.6
65 +	210	0 (0)	-	131 (62.4)	55.6, 68.7	50 (23.8)	18.5, 30.0	27 (12.9)	9.0, 18.1	2 (1.0)	0.2, 3.7	210 (100.0)	-	0 (0)	-
Total	4 963	3 (0.1)	0.0, 0.2	2 132 (43.0)	41.6, 44.3	1 400 (28.2)	27.0, 29.5	924 (18.6)	17.6, 19.7	224 (4.5)	4.0, 5.1	4 683 (94.4)	93.7, 95.0	280 (5.6)	5.0, 6.3
Both sexes															
25 – 34	3 164	6 (0.2)	0.1, 0.4	1 354 (42.8)	41.1, 44.5	885 (28.0)	26.4, 29.6	542 (17.1)	15.9, 18.5	170 (5.4)	4.6, 6.2	2 957 (93.5)	92.5, 94.3	207 (6.5)	5.7, 7.5
35 – 44	2 531	5 (0.2)	0.1, 0.5	1 116 (44.1)	42.2, 46.0	683 (27.0)	25.3, 28.7	449 (17.7)	16.3, 19.3	147 (5.8)	5.0, 6.8	2 400 (94.8)	93.9, 95.6	131 (5.2)	4.4, 6.1
45 – 54	1 847	7 (0.4)	0.2, 0.8	819 (44.3)	42.1, 46.6	556 (30.1)	28.1, 32.2	286 (15.5)	13.9, 17.2	92 (5.0)	4.1, 6.1	1 760 (95.3)	94.2, 96.2	87 (4.7)	3.8, 5.8
55 – 64	1 015	1 (0.1)	0.0, 0.7	505 (49.8)	46.7, 52.8	284 (28.0)	25.3, 30.8	133 (13.1)	11.2, 15.3	52 (5.1)	3.9, 6.7	975 (96.1)	94.7, 97.1	40 (3.9)	2.9, 5.3
65 +	718	4 (0.6)	0.2, 1.5	434 (60.4)	56.8, 64.0	158 (22.0)	19.1, 25.2	83 (11.6)	9.4, 14.1	26 (3.6)	2.5, 5.3	705 (98.2)	96.9, 98.9	13 (1.8)	1.1, 3.1
Total	9 275	23 (0.2)	0.2, 0.4	4 228 (45.6)	44.6, 46.6	2 566 (27.7)	26.8, 28.6	1 493 (16.1)	15.4, 16.9	487 (5.3)	4.8, 5.7	8 797 (94.8)	94.4, 95.3	478 (5.2)	4.7, 5.6

Table 3.4: Consumption of fruit and/or vegetables on an average day (in servings)

Age (years)	Number	No fruit or vegetables		Up to 1 serving		2 servings		3 servings		4 servings		<5 servings		≥5 servings	
		n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI
Men															
25 – 34	1 172	3 (0.3)	0.1, 0.8	803 (68.5)	65.8, 71.1	237 (20.2)	18.0, 22.6	72 (6.1)	4.9, 7.7	31 (2.6)	1.9, 3.7	1 146 (97.8)	96.8, 98.5	26 (2.2)	1.5, 3.2
35 – 44	1 076	2 (0.2)	0.0, 0.7	753 (70.0)	67.2, 72.6	193 (17.9)	15.8, 20.3	66 (6.1)	4.8, 7.7	30 (2.8)	2.0, 4.0	1 044 (97.0)	95.8, 97.9	32 (3.0)	2.1, 4.2
45 – 54	971	2 (0.2)	0.1, 0.8	693 (71.4)	68.4, 74.1	193 (19.9)	17.5, 22.5	36 (3.7)	2.7, 5.1	22 (2.3)	1.5, 3.4	946 (97.4)	96.2, 98.3	25 (2.6)	1.7, 3.8
55 – 64	585	1 (0.2)	0.0, 1.2	432 (73.8)	70.1, 77.2	87 (14.9)	12.2, 18.0	35 (6.0)	4.3, 8.2	15 (2.6)	1.6, 4.2	570 (97.4)	95.8, 98.4	15 (2.6)	1.6, 4.2
65 +	508	2 (0.4)	0.1, 1.6	399 (78.5)	74.8, 81.9	59 (11.6)	9.1, 14.7	32 (6.3)	4.5, 8.8	9 (1.8)	0.9, 3.4	501 (98.6)	97.1, 99.3	7 (1.4)	0.7, 2.9
Total	4 312	10 (0.2)	0.1, 0.4	3 080 (71.4)	70.1, 72.8	769 (17.8)	16.7, 19.0	241 (5.6)	4.9, 6.3	107 (2.5)	2.1, 3.0	4 207 (97.6)	97.1, 98.0	105 (2.4)	2.0, 2.9
Women															
25 – 34	1 992	0 (0)	-	1 317 (66.1)	64.0, 68.2	430 (21.6)	19.8, 23.4	78 (3.9)	3.1, 4.9	10 (0.5)	0.3, 0.9	1 835 (92.1)	90.9, 93.2	157 (7.9)	6.8, 9.1
35 – 44	1 455	1 (0.1)	0.0, 0.5	961 (66.0)	63.6, 68.4	341 (23.4)	21.3, 25.7	71 (4.9)	3.9, 6.1	13 (0.9)	0.5, 1.5	1 387 (95.3)	94.1, 96.3	68 (4.7)	3.7, 5.9
45 – 54	876	0 (0)	-	593 (67.7)	64.5, 70.7	195 (22.3)	19.6, 25.1	36 (4.1)	3.0, 5.6	7 (0.8)	0.4, 1.7	831 (94.9)	93.2, 96.1	45 (5.1)	3.9, 6.8
55 – 64	430	0 (0)	-	319 (74.2)	69.8, 78.1	79 (18.4)	15.0, 22.3	13 (3.0)	1.8, 5.1	3 (0.7)	0.2, 5.1	414 (96.3)	94.0, 97.7	16 (3.7)	2.3, 6.0
65 +	210	0 (0)	-	156 (74.3)	67.9, 79.7	40 (19.0)	14.3, 24.9	8 (3.8)	1.9, 7.4	1 (0.5)	0.1, 3.3	205 (97.6)	94.4, 99.0	5 (2.4)	1.0, 5.6
Total	4 963	1 (0)	0.0, 0.1	3 346 (67.4)	66.1, 68.7	1 085 (21.9)	20.7, 23.0	206 (4.2)	3.6, 4.7	34 (0.7)	0.5, 1.0	4 672 (94.1)	93.4, 94.8	291 (5.9)	5.2, 6.6
Both sexes															
25 – 34	3 164	3 (0.1)	0.0, 0.3	2 120 (67.0)	65.3, 68.6	667 (21.1)	19.7, 22.5	150 (4.7)	4.1, 5.5	41 (1.3)	1.0, 1.8	2 981 (94.2)	93.3, 95.0	183 (5.8)	5.0, 6.7
35 – 44	2 531	3 (0.1)	0.0, 0.4	1 714 (67.7)	65.9, 69.5	534 (21.1)	19.6, 22.7	137 (5.4)	4.6, 6.4	43 (1.7)	1.3, 2.3	2 431 (96.0)	95.2, 96.7	100 (4.0)	3.3, 4.8
45 – 54	1 847	2 (0.1)	0.0, 0.4	1 286 (69.6)	67.5, 71.7	388 (21.0)	19.2, 22.9	72 (3.9)	3.1, 4.9	29 (1.6)	1.1, 2.3	1 777 (96.2)	95.2, 97.0	70 (3.8)	3.0, 4.8
55 – 64	1 015	1 (0.1)	0.0, 0.7	751 (74.0)	71.2, 76.6	166 (16.4)	14.2, 18.8	48 (4.7)	3.6, 6.2	18 (1.8)	1.1, 2.8	984 (96.9)	95.7, 97.8	31 (3.1)	2.2, 4.3
65 +	718	2 (0.3)	0.1, 1.1	555 (77.3)	74.1, 80.2	99 (13.8)	11.5, 16.5	40 (5.6)	4.1, 7.5	10 (1.4)	0.8, 2.6	706 (98.3)	97.1, 99.0	12 (1.7)	1.0, 2.9
Total	9 275	11 (0.1)	0.1, 0.2	6 426 (69.3)	68.3, 70.2	1 854 (20.0)	19.2, 20.8	447 (4.8)	4.4, 5.3	141 (1.5)	1.3, 1.8	8 879 (95.7)	95.3, 96.1	396 (4.3)	3.9, 4.7

Table 4.1: Time (in minutes) spent in work, transport and leisure-related physical activity on an average day*

Age (years)	Men				Women				Both sexes			
	Number	Mean	Median	IQR**	Number	Mean	Median	IQR	Number	Mean	Median	IQR
<i>Work-related physical activity</i>												
25 – 34	1 172	214	154	0, 368	1 992	63	0	0, 60	3 164	119	17	0, 180
35 – 44	1 076	187	111	0, 342	1 455	70	3	0, 81	2 531	120	21	0, 180
45 – 54	971	203	129	0, 360	876	63	0	0, 60	1 847	137	30	0, 229
55 – 64	585	140	43	0, 257	430	43	0	0, 26	1 015	99	0	0, 154
65 +	508	74	0	0, 86	210	31	0	0, 4	718	61	0	0, 43
Total	4 312	178	90	0, 317	4 963	61.8	0	0, 60	9 275	116	15	0, 180
<i>Transport-related physical activity</i>												
25 – 34	1 172	72	51	17, 110	1 992	18	0	0, 14	3 164	38	9	0, 45
35 – 44	1 076	71	45	10, 120	1 455	18	0	0, 17	2 531	41	9	0, 60
45 – 54	971	111	51	13, 120	876	17	0	0, 13	1 847	66	13	0, 60
55 – 64	585	64	50	4, 109	430	14	0	0, 4	1 015	43	13	0, 60
65 +	508	51	30	0, 60	210	7	0	-	718	38	9	0, 60
Total	4 312	77	45	10, 110	4 963	17	0	0, 13	9 275	45	10	0, 60
<i>Leisure-related physical activity</i>												
25 – 34	1 172	13	0	0, 0	1 992	16	0	0, 0	3 164	15	0	0, 0
35 – 44	1 076	12	0	0, 0	1 455	21	0	0, 0	2 531	18	0	0, 0
45 – 54	971	14	0	0, 0	876	22	0	0, 0	1 847	18	0	0, 0
55 – 64	585	12	0	0, 0	430	20	0	0, 0	1 015	16	0	0, 0
65 +	508	11	0	0, 0	210	8	0	0, 0	718	10	0	0, 0
Total	4 312	12.7	0	0, 0	4 963	19	0	0, 0	9 275	16	0	0, 0
<i>Total physical activity</i>												
25 – 34	1 172	299	252	90.0, 473.6	1 992	97	26	0, 120.0	3 164	172	71	8.6, 269.8
35 – 44	1 076	271	206	60.0, 434.3	1 455	110	34	2.9, 154.3	2 531	178	86	15.0, 291.4
45 – 54	971	327	223	81.4, 447.9	876	101	34	0, 130.2	1 847	220	116	21.4, 317.1
55 – 64	585	216	150	51.4, 347.9	430	77	15	0, 90	1 015	157	69	8.6, 252.9
65 +	508	136	61	12.9, 188.6	210	46	0	0, 25.7	718	109	31	0.0, 150.0
Total	4 312	268	189	60.0, 420.0	4 963	97.5	30	0, 126.0	9 275	177	79	10.0, 270.0

*Total physical activity include work over 10 minutes at stretch moderate or vigorous that make people feel palpitation and breathlessness (for detail see appendix D: glossary of terms) done at work, during travel or at leisure

**IQR - Inter Quartile Range

Table 4.2: Prevalence of no work, transport and leisure related physical activity

Age (years)	Men			Women			Both sexes		
	Number	n (%)	95% CI	Number	n (%)	95% CI	Number	n (%)	95% CI
<i>Work-related physical activity</i>									
25 – 34	1 172	338 (28.8)	26.3, 31.5	1 992	1 071 (53.8)	51.6, 55.9	3 164	1 409 (44.5)	42.8, 46.3
35 – 44	1 076	355 (33.0)	30.2, 35.9	1 455	721 (49.6)	47.0, 52.1	2 531	1 076 (42.5)	40.6, 44.4
45 – 54	971	290 (29.9)	27.1, 32.8	876	484 (55.3)	51.9, 58.5	1 847	774 (41.9)	39.7, 44.2
55 – 64	585	245 (41.9)	37.9, 45.9	430	275 (64.0)	59.3, 68.4	1 015	520 (51.2)	48.2, 54.3
65 +	508	301 (59.3)	45.9, 63.4	210	156 (74.3)	67.9, 79.7	718	457 (63.6)	60.1, 67.1
Total	4 312	1 529 (35.5)	34.0, 36.9	4 963	2 707 (54.5)	53.2, 55.9	9 275	4 236 (45.7)	44.7, 46.7
<i>Transport-related physical activity</i>									
25 – 34	1 172	201 (17.2)	15.1, 19.4	1 992	1 267 (66.6)	61.5, 65.7	3 164	1 468 (46.4)	44.7, 48.1
35 – 44	1 076	232 (21.6)	19.2, 24.1	1 455	878 (60.3)	57.8, 62.8	2 531	1 110 (43.9)	41.9, 45.8
45 – 54	971	186 (19.2)	16.8, 21.8	876	581 (66.3)	63.1, 69.4	1 847	767 (41.5)	39.3, 43.8
55 – 64	585	139 (23.8)	20.5, 27.4	430	306 (71.2)	62.7, 75.2	1 015	445 (43.8)	40.8, 46.9
65 +	508	167 (32.9)	28.9, 37.1	210	173 (82.4)	76.6, 87.0	718	340 (47.4)	33.7, 51.0
Total	4 312	925 (21.5)	20.3, 22.7	4 963	3 205 (64.6)	63.2, 65.9	9 275	4 130 (44.5)	43.5, 45.5
<i>Leisure-related physical activity</i>									
25 – 34	1 172	974 (83.1)	80.9, 85.1	1 992	1 632 (81.9)	80.2, 83.6	3 164	2 606 (82.4)	81.0, 83.7
35 – 44	1 076	910 (84.6)	82.3, 86.6	1 455	1 145 (78.7)	76.5, 80.7	2 531	2 055 (81.2)	79.6, 82.7
45 – 54	971	812 (83.6)	81.2, 85.8	876	663 (75.7)	72.7, 78.4	1 847	1 475 (79.9)	78.0, 81.6
55 – 64	585	494 (84.4)	81.3, 87.2	430	338 (78.6)	74.5, 82.2	1 015	832 (82.0)	79.5, 84.2
65 +	508	446 (87.8)	84.7, 90.4	210	181 (86.2)	80.8, 90.2	718	627 (87.3)	84.7, 89.6
Total	4 312	3 636 (84.3)	83.2, 85.4	4 963	3 959 (79.8)	78.6, 80.9	9 275	7 595 (81.9)	81.1, 82.7

Table 4.3: Proportion of work, transport and leisure activity contributing to total activity

Age (years)	Number	Activity from work		Activity from transport		Activity during leisure	
		(%)	95% CI	(%)	95% CI	(%)	95% CI
Men							
25 – 34	1 112	58.8	56.2, 61.4	35.4	32.9, 37.9	5.8	4.7, 7.0
35 – 44	990	56.6	53.8, 59.3	36.6	33.9, 39.2	6.9	5.5, 8.3
45 – 54	917	57.3	54.5, 60.2	36.4	33.6, 39.2	6.3	4.9, 7.6
55 – 64	526	51.5	47.5, 55.4	41.1	37.3, 44.9	7.4	5.5, 9.4
65 +	402	38.4	34.0, 42.9	52.1	47.6, 56.7	9.5	6.7, 12.2
Total	3 947	54.7	53.3, 56.1	38.5	37.2, 39.9	6.8	6.1, 7.5
Women							
25 – 34	1 387	59.5	56.8, 62.2	23.2	21.0, 25.3	17.3	15.1, 19.5
35 – 44	1 104	58.5	55.6, 61.5	22.5	20.2, 24.8	19.0	16.5, 21.5
45 – 54	615	56.5	52.6, 60.5	19.9	17.1, 22.8	23.5	20.0, 27.1
55 – 64	264	51.2	45.2, 57.2	22.4	17.9, 26.9	26.4	20.9, 31.9
65 +	87	57.5	46.4, 68.6	20.8	12.1, 29.6	21.7	12.3, 31.0
Total	3 457	57.9	56.2, 59.6	22.2	20.9, 23.5	19.9	18.4, 21.3
Both sexes							
25 – 34	2 499	59.2	57.3, 61.1	28.6	26.9, 30.2	12.2	10.9, 13.6
35 – 44	2 094	57.6	55.6, 59.6	29.1	27.3, 30.9	13.3	11.8, 14.8
45 – 54	1 532	57.0	54.7, 59.4	29.6	27.5, 31.7	13.4	11.7, 15.1
55 – 64	790	51.4	48.1, 54.7	34.5	31.5, 37.5	14.2	11.7, 16.6
65 +	489	41.8	37.6, 46.0	46.6	42.4, 50.9	11.6	8.8, 14.4
Total	7 404	56.2	55.1, 57.3	30.9	29.9, 31.8	13.0	12.2, 13.7

Table 4.4: Prevalence of non-engagement into vigorous or at least moderate physical activity irrespective of duration

Age (years)	Men			Women			Both sexes		
	Number	n (%)	95% CI	Number	n (%)	95% CI	Number	n (%)	95% CI
<i>Vigorous physical activity</i>									
25 – 34	1 172	590 (47.3)	44.0, 50.7	1 992	1 439 (68.5)	66.0, 70.9	3 164	2 029 (60.6)	58.6, 62.6
35 – 44	1 076	574 (51.0)	47.5, 54.4	1 455	938 (59.1)	56.1, 62.1	2 531	1 512 (55.6)	53.4, 57.9
45 – 54	971	525 (51.9)	48.2, 55.5	876	631 (66.6)	62.9, 70.2	1 847	1 156 (58.9)	56.3, 61.5
55 – 64	585	391 (64.3)	59.7, 68.6	430	340 (75.8)	70.8, 80.2	1 015	731 (69.3)	65.9, 72.5
65 +	508	417 (81.7)	77.6, 85.2	210	188 (89.3)	83.3, 93.3	718	605 (83.9)	80.6, 86.7
Total	4 312	2 490 (55.9)	54.2, 57.6	4 963	3 536 (67.1)	65.5, 68.6	9 275	6 033 (61.8)	60.7, 63.0
<i>At least moderate physical activity</i>									
25 – 34	1 172	256 (21.1)	18.5, 24.0	1 992	815 (38.4)	36.0, 40.9	3 164	1 071 (32.0)	30.1, 33.9
35 – 44	1 076	291 (25.2)	22.3, 28.3	1 455	513 (31.2)	28.6, 33.9	2 531	804 (28.6)	26.7, 30.6
45 – 54	971	226 (22.7)	19.8, 25.9	876	329 (34.6)	31.2, 38.2	1 847	555 (28.4)	26.1, 30.8
55 – 64	585	191 (31.8)	27.6, 36.2	430	203 (43.8)	38.7, 49.1	1 015	394 (37.0)	33.7, 40.4
65 +	508	264 (49.0)	44.2, 53.9	210	135 (63.4)	55.7, 70.5	718	399 (53.1)	49.0, 57.2
Total	4 312	1 228 (27.5)	26.0, 29.1	4 963	1 995 (37.3)	35.7, 38.8	9 275	3 223 (32.7)	31.6, 33.8

Table 4.5: Time (in minutes) spent in vigorous, moderate and sedentary activity on an average day

Age (years)	Number	Vigorous			Moderate			Sedentary		
		Mean	Median	IQR*	Mean	Median	IQR	Mean	Median	IQR
Men										
25 – 34	1 172	133	0	0, 214.3	181	120	51.4, 257.1	148	120	60, 210
35 – 44	1 076	115	0	0, 170.4	170	120	34.3, 404.1	148	120	60, 210
45 – 54	971	110	0	0, 154.3	185	120	51.4, 247.1	154	120	60, 240
55 – 64	585	66	0	0, 40.0	156	114	34.3, 240.0	196	180	75, 300
65 +	508	31	0	0, 0	109	60	8.6, 150.0	273	240	120, 360
Total	4 312	101	0	0, 128.6	167	120	34.3, 240.0	171	120	60, 240
Women										
25 – 34	1 992	24	0	0, 8.6	79	20	0, 94.3	164	150	80, 240
35 – 44	1 455	32	0	0, 20.0	85	26	0, 102.9	149	120	60, 180
45 – 54	876	27	0	0, 8.6	78	25	0, 102.9	157	120	60, 210
55 – 64	430	12	0	0, 0	66	10	0, 61.7	196	180	110, 240
65 +	210	10	0	0, 0	34	0	0, 23.7	286	240	145, 420
Total	4 963	25	0	0, 8.6	77	20	0, 90.0	166	150	60, 240
Both sexes										
25 – 34	3 164	65	0	0, 34.3	117	51	0, 171.4	158	120	60, 240
35 – 44	2 531	68	0	0, 51.4	122	57	5.7, 175.7	149	120	60, 180
45 – 54	1 847	71	0	0, 51.4	134	69	10.7, 180.0	155	120	60, 230
55 – 64	1 015	43	0	0, 13.0	117	60	0, 180.0	196	180	90, 270
65 +	718	25	0	0, 0	87	30	0, 120.0	277	240	120, 420
Total	9 275	61	0	0, 34.3	119	57	2.9, 174.3	168	120	60, 240

*IQR - Inter Quartile Range

Table 4.6: Distribution of the respondents by total (combination of work, transportation and leisure) physical activity categories*

Age (years)	Number	Low		Moderate		High	
		n (%)	95% CI	n (%)	95% CI	n (%)	95% CI
Men							
25 – 34	1 172	83 (7.1)	5.6, 8.7	132 (11.3)	9.4, 13.3	957 (81.7)	76.5, 87.0
35 – 44	1 076	110 (10.2)	8.4, 12.3	147 (13.7)	11.5, 16.1	819 (76.1)	71.0, 82.0
45 – 54	971	63 (6.5)	4.9, 8.3	137 (14.1)	11.8, 16.7	771 (76.1)	73.9, 85.2
55 – 64	585	67 (11.5)	8.8, 14.5	99 (16.9)	13.7, 20.6	419 (71.6)	64.9, 78.8
65 +	508	130 (25.6)	21.3, 30.3	116 (22.8)	18.8, 27.4	262 (51.6)	45.5, 58.2
Total	4 312	453 (10.5)	9.5, 11.5	631 (14.6)	13.5, 15.8	3 228 (74.9)	72.3, 77.5
Women							
25 – 34	1 992	825 (41.4)	38.6, 44.3	508 (25.5)	23.3, 27.8	659 (33.1)	30.6, 35.7
35 – 44	1 455	511 (35.1)	32.1, 38.3	382 (26.3)	23.7, 29.0	562 (38.6)	35.5, 41.9
45 – 54	876	352 (40.2)	36.1, 44.6	223 (25.5)	22.2, 29.0	301 (34.4)	30.6, 38.5
55 – 64	430	216 (50.2)	43.7, 57.4	93 (21.6)	17.5, 26.5	121 (28.1)	23.3, 33.6
65 +	210	147 (70.0)	59.1, 82.2	33 (15.7)	10.8, 22.0	30 (14.3)	9.6, 20.4
Total	4 963	2 051 (41.3)	39.6, 43.1	1 239 (25.0)	23.6, 26.4	1 673 (33.7)	32.1, 35.4
Both sexes							
25 – 34	3 164	908 (36.3)	26.8, 30.6	640 (34.2)	18.7, 21.9	1 616 (33.0)	48.6, 53.6
35 – 44	2 531	621 (24.8)	22.6, 26.5	529 (28.3)	19.2, 22.7	1 381 (28.2)	51.7, 57.5
45 – 54	1 847	415 (16.6)	20.4, 24.7	360 (19.3)	17.5, 21.6	1 072 (21.9)	54.6, 61.6
55 – 64	1 015	283 (11.3)	24.7, 31.3	192 (10.3)	16.3, 21.8	540 (11.0)	48.8, 57.8
65 +	718	277 (11.1)	34.1, 43.4	149 (8.0)	17.5, 24.4	292 (6.0)	36.1, 45.6
Total	9 275	2 504 (27.0)	25.9, 28.1	1 870 (20.2)	19.3, 21.1	4 901 (52.8)	51.4, 54.3

*High: A person achieving a minimum of at least 3 000 MET-minutes per week

Moderate: A person not meeting the criteria for the "high" category, but achieving a minimum of at least 600 MET-minutes per week

Low: A person not meeting any of the above mentioned criteria falls in this category

Table 5.1: Distribution of the respondents by alcohol consumption status

Age (years)	Number	Drank in past 30 days		Drank in past 12 months*		Lifetime abstainer	
		n (%)	95% CI	n (%)	95% CI	n (%)	95% CI
Men							
25 – 34	1 172	32 (2.3)	1.5, 3.4	83 (5.2)	4.0, 6.8	1 009 (89.8)	87.8, 91.5
35 – 44	1 076	26 (1.6)	1.0, 2.5	56 (3.7)	2.7, 5.0	939 (90.6)	88.6, 92.2
45 – 54	971	14 (1.1)	0.6, 2.1	23 (2.2)	1.4, 3.4	858 (89.8)	87.6, 91.7
55 – 64	585	8 (1.6)	0.7, 3.3	14 (2.2)	1.2, 4.1	520 (90.7)	87.9, 92.9
65 +	508	1 (0.2)	0.0, 1.5	4 (0.7)	0.3, 1.9	482 (96.5)	94.6, 97.7
Total	4 312	81 (1.5)	1.1, 1.9	180 (3.2)	2.7, 3.8	3 808 (91.0)	90.0, 91.8
Women							
25 – 34	1 992	1 (0.0)	0.0, 0.3	2 (0.1)	0.0, 0.3	1 986 (99.8)	99.5, 99.9
35 – 44	1 455	2 (0.1)	0.0, 0.5	4 (0.2)	0.1, 0.7	1 450 (99.7)	99.3, 99.9
45 – 54	876	2 (0.3)	0.1, 1.1	3 (0.4)	0.1, 1.4	873 (99.6)	98.6, 99.9
55 – 64	430	1 (0.2)	0.0, 1.4	1 (0.2)	0.0, 1.4	429 (99.8)	98.6, 100.0
65 +	210	0 (0)	-	0 (0)	-	210 (100.0)	-
Total	4 963	6 (0.1)	0.1, 0.3	10 (0.2)	0.1, 0.4	4 948 (99.8)	99.6, 99.9
Both sexes							
25 – 34	3 164	33 (0.9)	0.6, 1.3	85 (2.0)	1.5, 2.6	2 995 (96.1)	95.3, 96.7
35 – 44	2 531	28 (0.8)	0.5, 1.2	60 (1.7)	1.3, 2.3	2 389 (95.8)	94.9, 96.5
45 – 54	1 847	16 (0.7)	0.4, 1.3	26 (1.3)	0.9, 2.0	1 731 (94.5)	93.2, 95.5
55 – 64	1 015	9 (1.0)	0.5, 2.0	15 (1.3)	0.7, 2.4	949 (94.7)	93.0, 95.9
65 +	718	1 (0.2)	0.0, 1.1	4 (0.5)	0.2, 1.4	692 (97.5)	96.1, 98.4
Total	9 275	87 (0.9)	0.8, 1.2	190 (2.0)	1.8, 2.4	8 756 (94.4)**	92.4, 96.4

* Inclusive of past 30 days category

**Another 329 (3.5) drank any amount of alcohol at least once in past 2-12 months

Table 5.2: Frequency of drinking among those who drank alcohol in the past 12 months

Age (years)	Number	Daily		5-6 days/week		1-4 days/week		1-3 days/month		Less than once a month	
		n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI
Men											
25 – 34	139	5 (3.6)	0.6,15.3	4 (2.9)	0.2,15.3	9(6.5)	2.5, 17.5	38 (27.3)	19.2, 39.8	83 (59.7)	51.7, 66.6
45 +	41	3 (7.3)	0.6, 8.6	2 (4.9)	0.6,7.2	6(14.6)	4.3, 76.2	9 (22.0)	12.2, 76.2	21 (51.2)	48.9, 57.1
Total	180	8 (4.4)	2.2, 8.6	6 (3.3)	1.5, 7.2	15(8.3)	5.1, 13.4	47 (26.1)	20.2, 33.0	104 (57.8)	52.5, 66.9
Women											
25 – 44	6	0 (0)	-	1 (16.7)	0.4, 92.2	0(0.0)	-	1 (16.7)	0.4, 92.2	4 (66.7)	51.3,77.1
45 +	4	0 (0)	-	0 (0.0)	-	1(25.0)	.63, 39.3	2 (50.0)	15.3, 95.7	1 (25.0)	.63, 39.3
Total	10	0 (0)	-	1 (10.0)	.25, 55.7	1(10.0)	.25, 55.7	3 (30.0)	10.0, 62.4	5 (50.0)	22.4, 77.6
Both sexes											
25 – 44	145	5 (3.4)	0.6, 14.4	5 (3.4)	0.2, 16.5	9(6.2)	2.5, 16.5	39 (26.9)	18.7, 39.2	87 (60.0)	52.8, 67.0
45 +	45	3 (6.7)	0.5, 40.5	2 (4.4)	0.5, 7.1	7(15.6)	5.9, 76.2	11 (24.4)	16.2, 76.2	22 (48.9)	28.4, 87.7
Total	190	8 (4.2)	2.1, 8.2	7 (3.7)	1.8, 7.5	16(8.4)	5.2, 13.3	50 (26.3)	20.5, 33.0	109 (57.4)	50.2, 64.2

Table 5.3: Number of occasions with at least one drink consumed on a drinking occasion in the past 30 days by current drinkers

Age (years)	Men (n=81)			Women (n=6)			Both sexes (n=87)		
	Number	Mean	95% CI	Number	Mean	95% CI	Number	Mean	95% CI
25 – 44	57	5.1	2.3, 10.0	3	14.7	9.2, 27.6	60	5.6	2.6, 10.4
45 +	22	6.9	1.9, 11.4	3	1.3	0.8, 5.2	25	6.3	1.8, 9.61
Total	79	5.6	4.0, 7.2	6	8.0	0.2, 15.8	85	5.8	4.2, 7.4

Note: Two respondents answered 'Don't know' in occasions with at least one drink consumed on a drinking occasion

Table 5.4: Number of standard drinks consumed on a drinking occasion in the past 30 days by current drinkers

Age (years)	Men (n=81)			Women (n=6)			Both sexes (n=87)		
	Number	Mean	95% CI	Number	Mean	95% CI	Number	Mean	95% CI
25 – 44	55	3.5	2.0, 6.1	2	1.5	0.02, 2.3	57	2.5	2.0, 3.9
45 +	20	4.3	2.2, 6.7	3	2.3	0.02, 3.6	19	4.3	1.3, 5.2
Total	75	3.7	2.3, 4.6	5	2.0	1.4, 2.6	80	2.8	2.7, 4.4

Note: Seven respondents answered 'Don't know' in "standard drinks" consumed on a drinking occasion

Table 5.5: Prevalence of heavy episodic (binge) drinking in the past 30 days among current drinkers

Age (years)	Men			Women			Both sexes		
	Number	n (%)	95% CI	Number	n (%)	95% CI	Number	n (%)	95% CI
Prevalence of having ≥ 5 drinks in men and ≥ 4 drinks in women									
25 – 44	58	40 (68.9)	54.5, 77.6	3	2 (66.7)	8.1, 241	61	21 (68.9)	45.9, 78.3
65 +	23	14 (60.9)	52.3, 85.7	3	2 (66.7)	8.1, 241	26	16 (61.5)	43.5, 86.4
Total	81	54 (66.7)	55.5, 76.2	6	4 (66.7)	26.1, 91.9	87	58 (66.7)	55.9, 75.9
Mean number of times drank ≥ 5 drinks in men and ≥ 4 drinks in women									
25 – 44	40	3.2	2.0, 3.5	2	2.0	0.2, 6.6	42	2.7	2.0, 3.5
65 +	14	5.6	1.4, 6.5	0	0.0	-	14	3.9	1.4, 6.3
Total	54	4.3	2.9, 5.7	2	2.0	0.2, 6.6	56	4.2	2.8, 5.5

Note: "Don't know" was responded by 10 respondents in "largest number of drinks"

Table 6.1: Height (in cm), weight (in kg) and body mass index (in kg/m²) of the respondents

Age (years)	Men			Women			Both sexes		
	Number	Mean	95% CI	Number	Mean	95% CI	Number	Mean	95% CI
<i>Height</i>									
25 – 34	1 172	162.7	162.3, 163.1	1 992	150.9	150.6, 151.2	3 164	155.3	155.0, 155.6
35 – 44	1 076	162.8	162.4, 163.2	1 455	150.8	150.5, 151.2	2 531	155.9	155.6, 156.3
45 – 54	971	162.2	161.4, 162.6	876	150.0	149.6, 150.4	1 847	156.4	156.0, 156.8
55 – 64	585	161.9	161.4, 162.4	430	148.4	147.9, 149.0	1 015	156.2	155.6, 156.7
65 +	508	159.0	158.4, 159.6	210	145.2	144.4, 146.1	718	155.0	154.3, 155.6
Total	4 312	162.1	161.9, 162.3	4 963	150.3	150.1, 150.4	9 275	155.8	155.6, 155.9
<i>Weight</i>									
25 – 34	1 172	55.1	54.5, 55.7	1 992	50.4	49.9, 50.8	3 164	52.1	51.7, 52.5
35 – 44	1 076	57.0	56.3, 57.8	1 455	51.0	50.4, 51.6	2 531	53.5	53.1, 54.0
45 – 54	971	56.1	55.3, 56.9	876	49.5	48.7, 50.2	1 847	53.0	52.4, 53.5
55 – 64	585	54.6	53.7, 55.5	430	47.6	46.4, 48.8	1 015	51.6	50.9, 52.4
65 +	508	50.1	49.2, 51.0	210	41.5	40.1, 42.8	718	47.6	46.8, 48.4
Total	4 312	55.2	54.8, 55.5	4 963	49.8	49.4, 50.1	9 275	52.3	52.0, 52.5
<i>Body mass index (BMI)</i>									
25 – 34	1 172	20.8	20.6, 21.0	1 992	22.1	21.9, 22.3	3 164	21.6	21.5, 21.7
35 – 44	1 076	21.5	21.2, 21.7	1 455	22.3	22.1, 22.6	2 531	22.0	21.8, 22.1
45 – 54	971	21.3	21.0, 21.7	876	22.0	21.6, 22.3	1 847	21.6	21.4, 21.9
55 – 64	585	20.8	20.5, 21.1	430	21.5	21.0, 22.0	1 015	21.1	20.8, 21.4
65 +	508	19.7	19.4, 20.0	210	19.6	19.0, 20.2	718	19.7	19.4, 20.0
Total	4 312	21.0	20.8, 21.1	4 963	22.0	21.8, 22.1	9 275	21.5	21.4, 21.6

Table 6.2: Body mass index (BMI) categories of respondents

Age (years)	Number	Under weight BMI <18.5		Normal weight BMI 18.5-24.9		Overweight BMI 25.0-29.9		Obese BMI ≥ 30.0		Overweight or obese BMI ≥ 25	
		n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI
Men											
25 – 34	1 172	306 (26.1)	23.7, 28.7	733 (62.5)	59.7, 65.3	111 (9.5)	7.9, 11.3	22 (1.9)	1.2, 2.8	129 (11.0)	9.3, 12.9
35 – 44	1 076	255 (23.7)	21.3, 26.3	649 (60.3)	57.4, 63.2	148 (13.8)	11.8, 15.9	24 (2.2)	1.5, 3.3	168 (15.6)	13.6, 17.9
45 – 54	971	263 (27.1)	24.4, 30.0	553 (57.0)	53.8, 60.0	125 (12.9)	10.9, 15.1	30 (3.1)	2.2, 4.4	152 (15.7)	13.5, 18.1
55 – 64	585	169 (28.9)	25.4, 32.7	346 (59.1)	55.1, 63.1	57 (9.7)	7.6, 12.4	13 (2.2)	1.3, 3.8	70 (12.0)	9.6, 14.9
65 +	508	203 (40.0)	35.8, 44.3	262 (51.6)	47.2, 55.9	39 (7.7)	5.7, 10.3	4 (0.8)	0.3, 2.1	42 (8.3)	6.2, 11.0
Total	4 312	1 196 (27.7)	26.4, 29.1	2 543 (59.0)	57.5, 60.4	480 (11.1)	10.2, 12.1	93 (2.2)	1.8, 2.6	561 (13.0)	12.0, 14.0
Women											
25 – 34	1 992	392 (19.7)	18.0, 21.5	1 166 (58.5)	56.4, 60.7	350 (17.6)	16.0, 19.3	84 (4.2)	3.4, 5.2	430 (21.6)	19.8, 23.4
35 – 44	1 455	296 (20.3)	18.4, 22.5	809 (55.6)	53.0, 58.1	262 (18.0)	16.1, 20.1	88 (6.0)	4.9, 7.4	346 (23.8)	21.7, 26.0
45 – 54	876	218 (24.9)	22.1, 27.9	459 (52.4)	49.1, 55.7	153 (17.5)	15.1, 20.1	46 (5.3)	4.0, 6.9	197 (22.5)	19.8, 25.4
55 – 64	430	126 (29.3)	25.2, 33.8	222 (51.6)	46.9, 56.3	62 (14.4)	11.4, 18.1	20 (4.7)	3.0, 7.1	82 (19.1)	15.6, 23.1
65 +	210	98 (46.7)	40.0, 53.4	93 (44.3)	37.7, 51.1	15 (7.1)	4.4, 11.5	4 (1.9)	0.7, 5.0	19 (9.0)	5.8, 13.7
Total	4 963	1 130 (22.8)	21.6, 24.0	2 749 (55.4)	54.0, 56.8	842 (17.0)	15.9, 18.0	242 (4.9)	4.3, 5.5	1 074 (21.6)	20.5, 22.8
Both sexes											
25 – 34	3 164	698 (22.1)	20.6, 23.5	1 899 (60.0)	58.3, 61.7	461 (14.6)	13.4, 15.8	106 (3.4)	2.8, 4.0	559 (17.7)	16.4, 19.0
35 – 44	2 531	551 (21.8)	20.2, 23.4	1 458 (57.6)	55.7, 59.5	410 (16.2)	14.8, 17.7	112 (4.4)	3.7, 5.3	514 (20.3)	18.8, 21.9
45 – 54	1 847	481 (26.0)	24.1, 28.1	1 012 (54.8)	52.5, 57.1	278 (15.1)	13.5, 16.8	76 (4.1)	3.3, 5.1	349 (18.9)	17.2, 20.7
55 – 64	1 015	295 (29.1)	26.4, 31.9	568 (56.0)	52.9, 59.0	119 (11.7)	9.9, 13.9	33 (3.3)	2.3, 4.5	152 (15.0)	12.9, 17.3
65 +	718	301 (41.9)	38.4, 45.6	355 (49.4)	45.8, 53.1	54 (7.5)	5.8, 9.7	8 (1.1)	0.6, 2.2	61 (8.5)	6.7, 10.8
Total	9 275	2 326 (25.1)	24.2, 26.0	5 292 (57.1)	56.0, 58.1	1 322 (14.3)	13.6, 15.0	335 (3.6)	3.3, 4.0	1 635 (17.6)	16.9, 18.4

Table 6.3: Mean waist circumference (in cm) of the respondents

Age (years)	Men			Women			Both sexes		
	Number	Mean	95% CI	Number	Mean	95% CI	Number	Mean	95% CI
25 – 34	1 172	75.7	75.2, 76.2	1 892	74.9	74.4, 75.3	3 064	75.2	74.8, 75.5
35 – 44	1 076	78.6	77.9, 79.2	1 443	76.9	76.3, 77.5	2 519	77.6	77.2, 78.1
45 – 54	971	79	78.4, 79.7	873	76.3	75.5, 77.1	1 844	77.7	77.2, 78.3
55 – 64	584	78.7	77.8, 79.5	430	75.4	74.3, 76.6	1 014	77.3	76.6, 78.0
65 +	508	76.5	75.5, 77.5	210	71.9	70.0, 73.8	718	75.2	74.2, 76.1
Total	4 311	77.7	77.4, 78.0	4 848	75.7	75.3, 76.0	9 159	76.6	76.4, 76.8

Note: 112 women were excluded because of pregnancy and 3 had refusals

Table 6.4: Distribution of the respondents by waist circumference categories

Age (years)	Men			Women			Both sexes		
	Number	n (%)	95% CI	Number	n (%)	95% CI	Number	n (%)	95% CI
<i>Increased (men ≥ 94 cm, women ≥ 80 cm)</i>									
25 – 34	1 172	46 (3.9)	3.0, 5.2	1 992	588 (29.5)	27.6, 31.6	3 164	634 (20.0)	18.7, 21.5
35 – 44	1 076	92 (8.6)	7.0, 10.4	1 455	564 (38.8)	36.3, 41.3	2 531	656 (25.9)	24.2, 27.7
45 – 54	971	103 (10.6)	8.8, 12.7	876	327 (37.3)	34.2, 40.6	1 847	430 (23.3)	21.4, 25.3
55 – 64	585	57 (9.7)	7.6, 12.4	430	146 (34.0)	29.6, 38.6	1 015	203 (20.0)	17.7, 22.6
65 +	508	46 (9.1)	6.8, 11.9	210	47 (22.4)	17.2, 28.5	718	93 (13.0)	10.7, 15.6
Total	4 312	344 (8.0)	7.2, 8.8	4 963	1 672 (33.7)	32.4, 35.0	9 275	2 016 (21.7)	20.9, 22.6
<i>Substantially increased (men ≥ 102 cm, women ≥ 88 cm)</i>									
25 – 34	1 172	7 (0.6)	0.3, 1.2	1 992	233 (11.7)	10.4, 13.2	3 164	240 (7.6)	6.7, 8.6
35 – 44	1 076	25 (2.3)	1.6, 3.4	1 455	267 (18.4)	16.4, 20.4	2 531	292 (11.5)	10.3, 12.8
45 – 54	971	22 (2.3)	1.5, 3.4	876	156 (17.8)	15.4, 20.5	1 847	178 (9.6)	8.4, 11.1
55 – 64	585	16 (2.7)	1.7, 4.4	430	68 (15.8)	12.7, 19.6	1 015	84 (8.3)	6.7, 10.1
65 +	508	11 (2.2)	1.2, 3.9	210	20 (9.5)	6.2, 14.3	718	31 (4.3)	3.1, 6.1
Total	4 312	81 (1.9)	1.5, 2.3	4 963	744 (15.0)	14.0, 16.0	9 275	825 (8.9)	8.3, 9.5

Table 7.1: Measurement of blood pressure and diagnosis of hypertension among respondents

Age (years)	Number	Never measured		Measured, not diagnosed		Measured, diagnosed	
		n (%)	95% CI	n (%)	95% CI	n (%)	95% CI
<i>Men</i>							
25 – 34	1 172	666 (56.8)	54.0, 59.6	454 (38.7)	36.0, 41.6	52 (4.4)	3.3, 5.8
35 – 44	1 076	448 (41.6)	38.7, 44.6	542 (50.4)	47.4, 53.4	86 (8.0)	6.9, 9.9
45 – 54	971	408 (42.0)	38.9, 45.2	434 (44.7)	41.6, 47.8	129 (13.3)	11.1, 15.8
55 – 64	585	208 (35.6)	31.8, 39.5	271 (46.3)	42.3, 50.4	96 (16.4)	13.3, 20.0
65 +	508	187 (36.8)	32.7, 41.1	226 (44.5)	40.2, 48.8	95 (18.7)	15.1, 22.9
Total	4 312	1 917 (44.5)	43.0, 45.9	1 927 (44.7)	43.2, 46.2	468 (10.9)	9.9, 11.9
<i>Women</i>							
25 – 34	1 992	516 (25.9)	24.0, 27.9	1 340 (67.3)	65.2, 69.3	136 (6.8)	15.7, 8.1
35 – 44	1 455	316 (21.7)	19.7, 23.9	938 (64.5)	62.0, 66.9	201 (13.8)	12.0, 15.9
45 – 54	876	170 (19.4)	16.9, 22.2	515 (58.8)	55.5, 62.0	191 (21.8)	18.8, 25.1
55 – 64	430	82 (19.1)	15.6, 23.1	236 (54.9)	50.1, 59.5	112 (26.0)	21.5, 31.3
65 +	210	49 (23.3)	18.1, 29.5	113 (53.8)	47.0, 60.4	48 (22.9)	16.9, 30.3
Total	4 963	1 133 (22.8)	21.7, 24.0	3 142 (63.3)	62.0, 64.6	688 (13.9)	12.9, 14.9
<i>Both sexes</i>							
25 – 34	3 164	1 182 (37.4)	35.7, 39.1	1 794 (56.7)	55.0, 58.4	188 (5.9)	5.1, 6.9
35 – 44	2 531	764 (30.2)	28.4, 32.0	1 480 (58.5)	56.5, 60.4	287 (11.3)	10.1, 12.7
45 – 54	1 847	578 (31.3)	29.2, 33.4	949 (51.4)	49.1, 53.7	320 (17.3)	15.5, 19.3
55 – 64	1 015	290 (28.6)	25.9, 31.4	507 (50.0)	46.9, 53.0	218 (21.5)	18.7, 24.5
65 +	718	236 (23.9)	29.5, 36.4	339 (47.2)	43.6, 50.9	143 (19.9)	16.8, 23.5
Total	9 275	3 050 (32.9)	31.9, 33.8	5 069 (54.7)	53.6, 55.7	1 156 (12.5)	11.8, 13.2

Table 7.2: Prevalence of use of blood pressure drugs prescribed by doctor or health worker among the hypertensive respondents

Age (years)	Men			Women			Both sexes		
	Number	n (%)	95% CI	Number	n (%)	95% CI	Number	n (%)	95% CI
25 – 34	52	17 (32.7)	16.1, 47.6	136	40 (29.4)	21.0, 40.1	188	57 (30.3)	23.3, 39.3
35 – 44	86	35 (40.7)	28.4, 56.6	201	73 (36.3)	28.5, 45.7	287	108 (37.6)	30.9, 45.4
45 – 54	129	81 (62.8)	49.9, 78.2	191	116 (60.7)	71.8, 98.4	320	197 (61.6)	53.3, 70.8
55 – 64	106	73 (68.9)	54.0, 86.6	112	72 (64.3)	50.3, 81.0	218	145 (66.5)	56.1, 78.3
65 +	95	65 (68.4)	52.8, 87.2	48	33 (68.8)	47.3, 96.6	143	98 (68.5)	55.6, 78.3
Total	468	271 (57.9)	51.2, 65.2	688	334 (48.5)	43.5, 54.0	1 156	605 (52.3)	48.3, 57.7

Table 7.3: Distribution of the hypertensive respondents who received advice from a doctor or health worker for lifestyle modification

Age (years)	Men			Women			Both sexes		
	Number	n (%)	95% CI	Number	n (%)	95% CI	Number	n (%)	95% CI
<i>Reduce salt intake</i>									
25 – 34	52	27 (51.9)	38.5, 65.0	136	81 (59.6)	51.1, 67.5	188	108 (57.4)	50.3, 64.3
35 – 44	68	57 (66.3)	55.7, 75.5	201	134 (66.7)	59.9, 72.8	287	191 (66.6)	60.9, 71.8
45 – 54	129	90 (69.8)	61.3, 77.1	191	141 (73.8)	67.1, 79.6	320	231 (72.2)	67.0, 76.8
55 – 64	106	78 (73.6)	64.4, 81.1	112	75 (67.0)	57.8, 75.0	218	153 (70.2)	63.8, 75.9
65 +	95	66 (69.5)	59.5, 77.9	48	31 (64.6)	50.2, 76.7	143	97 (67.8)	59.8, 75.0
Total	468	318 (67.9)	63.6, 72.0	688	462 (67.2)	63.6, 70.6	1 156	780 (67.5)	64.7, 70.1
<i>Lose weight</i>									
25 – 34	52	18 (34.6)	23.0, 48.4	136	46 (33.8)	26.4, 42.2	188	64 (34.0)	27.6, 41.1
35 – 44	86	36 (41.9)	31.9, 52.5	201	84 (41.8)	35.2, 48.7	287	120 (41.8)	36.2, 47.6
45 – 54	129	62 (48.1)	39.6, 56.7	191	85 (44.5)	37.6, 51.6	320	147 (45.9)	40.5, 51.4
55 – 64	106	60 (56.6)	47.0, 65.7	112	45 (40.2)	31.5, 49.5	218	105 (48.2)	41.6, 54.8
65 +	95	37 (38.9)	29.7, 49.1	48	10 (20.8)	11.6, 34.6	143	47 (32.9)	25.7, 41.0
Total	468	213 (45.5)	41.0, 50.0	688	270 (39.2)	35.7, 42.9	1 156	483 (41.8)	39.0, 44.6
<i>Stop tobacco use</i>									
25 – 34	52	28 (53.8)	40.3, 66.8	136	11 (8.1)	4.5, 14.0	188	39 (20.7)	15.5, 27.1
35 – 44	86	55 (64.0)	53.3, 73.4	201	35 (17.4)	12.8, 23.3	287	90 (31.4)	26.3, 37.0
45 – 54	129	88 (68.2)	59.7, 75.7	191	32 (16.8)	12.1, 22.7	320	120 (37.5)	32.4, 42.9
55 – 64	106	73 (68.9)	59.5, 76.9	112	25 (22.3)	15.6, 31.0	218	98 (45.0)	38.5, 51.6
65 +	95	64 (67.4)	57.3, 76.0	48	11 (22.9)	13.2, 36.8	143	75 (52.4)	44.3, 60.5
Total	468	308 (65.8)	61.4, 70.0	688	114 (16.6)	14.0, 19.5	1 156	422 (36.5)	33.8, 39.3
<i>Start or do more exercise</i>									
25 – 34	52	28 (53.8)	40.3, 66.8	136	52 (38.2)	30.5, 46.7	188	80 (42.6)	35.7, 49.7
35 – 44	86	57 (66.3)	55.7, 75.5	201	99 (49.3)	42.4, 56.1	287	156 (54.4)	48.6, 60.0
45 – 54	129	86 (66.7)	58.1, 74.3	191	108 (56.5)	49.4, 63.4	320	194 (60.6)	55.2, 65.8
55 – 64	106	77 (72.6)	63.4, 80.3	112	56 (50.0)	40.8, 59.2	218	133 (61.0)	54.4, 67.3
65 +	95	65 (68.4)	58.4, 77.0	48	20 (41.7)	28.7, 55.9	143	85 (59.4)	51.2, 67.2
Total	468	313 (66.9)	62.5, 71.0	688	335 (48.7)	45.0, 52.4	1 156	648 (56.1)	53.2, 58.9

Table 7.4: Hypertensives who have seen traditional healers for advice/treatment for raised blood pressure

Age (years)	Men			Women			Both sexes		
	Number	n (%)	95% CI	Number	n (%)	95% CI	Number	n (%)	95% CI
<i>Seen traditional healers for advice/treatment</i>									
25 – 34	52	4 (7.7)	2.9, 18.8	136	5 (3.7)	1.5, 8.5	188	9 (4.8)	2.5, 8.9
35 – 44	86	9 (10.5)	5.5, 18.9	201	3 (1.5)	0.5, 4.5	287	12 (4.2)	2.4, 7.2
45 – 54	129	4 (3.1)	1.2, 8.0	191	7 (3.7)	1.8, 7.5	320	11 (3.4)	1.9, 6.1
55 – 64	106	6 (5.7)	2.6, 12.0	112	1 (0.9)	0.1, 6.1	218	7 (3.2)	1.5, 6.6
65 +	95	6 (6.3)	2.9, 13.4	48	2 (4.2)	1.0, 15.2	143	8 (5.6)	2.8, 10.8
Total	468	29 (6.2)	4.3, 8.8	688	18 (2.6)	1.7, 4.1	1 156	47 (4.1)	3.1, 5.4
<i>Currently taking herbal or traditional remedy</i>									
25 – 34	52	2 (3.8)	1.0, 14.1	136	1 (0.7)	0.1, 5.0	188	3 (1.6)	0.5, 4.8
35 – 44	86	5 (5.8)	2.4, 13.2	201	2 (1.0)	0.2, 3.9	287	7 (2.4)	1.2, 5.0
45 – 54	129	2 (1.6)	0.4, 6.0	191	1 (0.5)	0.1, 3.6	320	3 (0.9)	0.3, 2.9
55 – 64	106	1 (0.9)	0.1, 6.4	112	0 (0)	-	218	1 (0.5)	0.1, 3.2
65 +	95	1 (1.1)	0.1, 7.1	48	1 (2.1)	0.3, 13.4	143	2 (1.4)	0.3, 5.4
Total	468	11 (2.4)	1.3, 4.2	688	5 (0.7)	0.3, 1.7	1 156	16 (1.4)	0.8, 2.2

Table 7.5: Mean blood pressure (mmHg) among all respondents

Age (years)	Men			Women			Both sexes		
	Number	Mean	95% CI	Number	Mean	95% CI	Number	Mean	95% CI
<i>Systolic blood pressure</i>									
25 – 34	1 172	116	115.3, 116.7	1 992	113	111.9, 113.0	3 164	114	113.3, 114.2
35 – 44	1 076	118	116.7, 118.6	1 455	118	117.1, 118.9	2 531	118	117.2, 118.5
45 – 54	971	122	120.9, 123.1	876	124	122.4, 125.1	1 847	123	122.0, 123.7
55 – 64	585	126	124.1, 127.7	430	130	127.6, 132.1	1 015	128	126.2, 129.0
65 +	508	134	131.5, 135.9	210	134	130.6, 137.2	718	134	131.9, 135.6
Total	4 312	121	120.7, 121.8	4 963	119	118.0, 119.0	9 275	120	119.4, 120.1
<i>Diastolic blood pressure</i>									
25 – 34	1 172	75	74.6, 75.7	1 992	73	72.0, 72.9	3 164	74	73.1, 73.8
35 – 44	1 076	78	76.9, 78.3	1 455	76	75.8, 77.0	2 531	77	76.5, 77.4
45 – 54	971	79	78.1, 79.6	876	78	77.5, 79.1	1 847	79	78.0, 79.1
55 – 64	585	79	77.8, 79.8	430	79	77.7, 80.3	1 015	79	78.1, 79.7
65 +	508	79	77.5, 79.8	210	76	73.9, 77.2	718	78	76.8, 78.7
Total	4 312	78	77.2, 77.8	4 963	75	75.0, 75.7	9 275	76	76.1, 76.6

Table 7.6: Prevalence of high blood pressure among respondents at measurement during survey

Age (years)	Men			Women			Both sexes		
	Number	n (%)	95% CI	Number	n (%)	95% CI	Number	n (%)	95% CI
<i>Stage I hypertension $\geq 140/90$ on measurement</i>									
25 – 34	1 172	63 (5.4)	5.1, 7.9	1 992	102 (5.1)	5.3, 7.4	3 164	165 (5.2)	5.5, 7.2
35 – 44	1 076	119 (11.1)	10.6, 14.6	1 455	200 (13.7)	14.4, 18.2	2 531	319 (12.6)	13.3, 16.0
45 – 54	971	165 (17.0)	16.7, 21.6	876	183 (20.9)	21.5, 27.1	1 847	348 (18.8)	19.7, 23.4
55 – 64	585	147 (25.1)	23.1, 30.2	430	127 (29.5)	30.7, 39.8	1 015	274 (27.0)	27.4, 33.0
65 +	508	177 (34.8)	33.1, 41.5	210	91 (43.3)	40.0, 53.4	718	268 (37.3)	36.4, 43.6
Total	4 312	671 (15.6)	14.4, 16.8	4 963	703 (14.2)	13.1, 15.3	9 275	1 374 (14.8)	14.0, 15.6
<i>Stage II hypertension $\geq 160/100$ on measurement</i>									
25 – 34	1 172	12 (1.0)	0.8, 2.1	1 992	26 (1.3)	1.1, 2.2	3 164	38 (1.2)	1.1, 1.9
35 – 44	1 076	33 (3.1)	2.9, 5.2	1 455	70 (4.8)	3.8, 6.0	2 531	103 (4.1)	3.7, 5.3
45 – 54	971	57 (5.9)	4.5, 7.4	876	73 (8.3)	6.2, 9.7	1 847	130 (7.0)	5.7, 7.9
55 – 64	585	58 (9.9)	7.3, 12.0	430	53 (12.3)	8.5, 14.5	1 015	111 (10.9)	8.4, 12.2
65 +	508	90 (17.7)	14.6, 21.3	210	40 (19.0)	13.5, 23.9	718	130 (18.1)	15.2, 20.8
Total	4 312	250 (5.8)	5.3, 6.7	4 963	262 (5.3)	4.6, 5.8	9 275	512 (5.5)	5.1, 6.0
<i>Hypertension (BP $\geq 140/90$ on measurement and/or on medication)</i>									
25 – 34	1 172	74 (6.3)	6.2, 9.3	1 992	128 (6.4)	6.7, 9.1	3 164	202 (6.4)	6.9, 8.7
35 – 44	1 076	142 (13.2)	13.3, 17.6	1 455	242 (16.6)	17.6, 21.7	2 531	384 (15.2)	16.3, 19.3
45 – 54	971	204 (21.0)	21.1, 26.5	876	237 (27.1)	28.1, 34.2	1 847	441 (23.9)	25.2, 29.2
55 – 64	585	182 (31.1)	29.5, 37.1	430	153 (35.6)	37.3, 46.6	1 015	335 (33.0)	33.9, 39.9
65 +	508	196 (38.6)	36.6, 45.1	210	99 (47.1)	43.3, 56.7	718	295 (41.1)	39.9, 47.1
Total	4 312	798 (18.5)	17.2, 19.8	4 963	859 (17.3)	16.2, 18.5	9 275	1 657 (17.9)	17.0, 18.8

Table 7.7: Status of treatment and blood pressure control among previously diagnosed hypertensive respondents

Age (years)	Number	Not on medication and SBP < 140 and DBP < 90		On medication and SBP < 140 and DBP < 90		On medication and SBP ≥ 140 and DBP ≥ 90		Not on medication and SBP ≥ 140 and DBP ≥ 90	
		n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI
Men									
25 – 34	52	38 (73.0)	59.5, 83.4	5 (9.6)	4.1, 21.1	4 (7.7)	2.9, 18.8	5 (9.6)	4.1, 21.1
35 – 44	86	33 (38.4)	28.7, 49.0	11 (12.8)	7.2, 21.7	17 (19.8)	12.6, 29.5	25 (29.1)	20.5, 39.5
45 – 54	129	35 (27.1)	20.2, 35.5	25 (19.4)	13.4, 27.1	45 (34.9)	27.2, 43.5	24 (18.6)	12.8, 26.3
55 – 64	106	21 (19.8)	13.3, 28.5	28 (26.4)	18.9, 35.6	42 (39.6)	30.8, 49.2	15 (14.2)	8.7, 22.2
65 +	95	16 (16.8)	10.6, 25.8	13 (13.7)	8.1, 22.2	46 (48.4)	38.6, 58.4	20 (21.1)	14.0, 30.4
Total	468	143 (30.6)	26.5, 34.9	82 (17.5)	14.3, 21.2	154 (32.9)	28.8, 37.3	89 (19.0)	15.7, 22.8
Women									
25 – 34	136	73 (53.7)	45.3, 61.9	21 (15.4)	10.3, 22.5	15 (11.0)	6.8, 17.5	27 (19.9)	14.0, 27.4
35 – 44	201	81 (40.3)	33.7, 47.2	33 (16.4)	11.9, 22.2	38 (18.9)	14.1, 24.9	49 (24.4)	18.9, 30.8
45 – 54	191	38 (19.9)	14.8, 26.2	42 (22.0)	16.7, 28.4	70 (36.6)	30.1, 43.7	41 (21.5)	16.2, 27.9
55 – 64	112	11 (9.8)	5.5, 16.9	21 (18.8)	12.5, 27.1	51 (45.5)	36.6, 54.8	29 (25.9)	18.6, 34.8
65 +	48	4 (8.3)	3.2, 20.2	5 (10.4)	4.4, 22.7	27 (56.2)	42.1, 69.5	12 (25.0)	14.8, 39.1
Total	688	207 (30.1)	26.8, 33.6	122 (17.7)	15.1, 20.8	201 (29.2)	25.9, 32.7	158 (23.0)	20.0, 26.3
Both sexes									
25 – 34	188	111 (59.0)	51.9, 65.9	26 (13.8)	9.6, 19.5	19 (10.1)	6.5, 15.3	32 (17.0)	12.3, 23.1
35 – 44	287	114 (39.7)	34.2, 45.5	44 (15.3)	11.6, 20.0	55 (19.2)	15.0, 24.1	74 (25.8)	21.0, 31.2
45 – 54	320	73 (22.8)	18.5, 27.7	67 (20.9)	16.8, 25.7	115 (35.9)	30.9, 41.4	65 (20.3)	16.3, 25.1
55 – 64	218	32 (14.7)	10.6, 20.0	49 (22.5)	17.4, 28.5	93 (42.7)	36.3, 49.3	44 (20.2)	15.4, 26.0
65 +	143	20 (14.0)	9.2, 20.7	18 (12.6)	8.1, 19.1	73 (51.0)	42.9, 59.2	32 (22.4)	16.3, 29.9
Total	1 156	350 (30.3)	27.7, 33.0	204 (17.6)	15.6, 20.0	355 (30.7)	28.1, 33.4	247 (21.4)	19.1, 23.8

Table 8.1: Distribution of the respondents by measurement of blood glucose and diagnosis of diabetes

Age (years)	Number	Never measured		Measured, not diagnosed		Measured, diagnosed	
		n (%)	95% CI	n (%)	95% CI	n (%)	95% CI
Men							
25 – 34	1 172	1 092 (93.2)	91.6, 94.5	73 (6.2)	5.0, 7.8	7 (0.6)	0.2, 1.2
35 – 44	1 076	911 (84.7)	82.4, 86.7	127 (11.8)	10.0, 13.9	38 (3.5)	2.5, 4.9
45 – 54	971	770 (79.3)	76.6, 81.7	150 (15.4)	13.3, 17.9	51 (5.3)	3.9, 6.9
55 – 64	585	431 (73.7)	70.0, 77.1	91 (15.6)	12.8, 18.7	63 (10.8)	8.3, 13.8
65 +	508	376 (74.0)	70.0, 77.6	106 (20.9)	17.6, 24.6	26 (5.1)	3.3, 7.5
Total	4 312	3 580 (83.0)	81.9, 84.1	547 (12.7)	11.7, 13.7	185 (4.3)	3.7, 5.0
Women							
25 – 34	1 992	1 781 (89.4)	88.0, 90.7	193 (9.7)	8.5, 11.1	18 (0.9)	0.5, 1.4
35 – 44	1 455	1 195 (82.1)	80.1, 84.0	205 (14.1)	12.4, 16.0	55 (3.8)	2.9, 4.9
45 – 54	876	645 (73.6)	70.6, 76.4	164 (18.7)	16.3, 21.4	67 (7.6)	5.9, 9.7
55 – 64	430	323 (75.1)	70.8, 79.0	76 (17.7)	14.4, 21.6	31 (7.2)	4.9, 10.2
65 +	210	170 (81.0)	75.1, 85.7	31 (14.8)	10.6, 20.2	9 (4.3)	1.7, 8.1
Total	4 963	4 114 (82.9)	81.8, 83.9	669 (13.5)	12.6, 14.5	180 (3.6)	3.1, 4.2
Both sexes							
25 – 34	3 164	2 873 (90.8)	89.7, 91.8	266 (8.4)	7.5, 9.4	25 (0.8)	0.5, 1.2
35 – 44	2 531	2 106 (83.2)	81.7, 84.6	332 (13.1)	11.9, 14.5	93 (3.7)	2.9, 4.5
45 – 54	1 847	1 415 (76.6)	74.6, 78.5	314 (17.0)	15.4, 18.8	118 (6.4)	5.3, 7.7
55 – 64	1 015	754 (74.3)	71.5, 76.9	167 (16.5)	14.3, 18.9	94 (9.3)	7.5, 11.3
65 +	718	546 (76.0)	72.8, 79.0	137 (19.1)	16.4, 22.1	35 (4.9)	3.4, 6.8
Total	9 275	7 694 (83.0)	82.2, 83.7	1 216 (13.1)	12.4, 13.8	365 (3.9)	3.5, 4.4

Table 8.2: Diabetic respondents who are currently taking insulin or oral antidiabetic drugs

Age (years)	Men			Women			Both sexes		
	Number	n (%)	95% CI	Number	n (%)	95% CI	Number	n (%)	95% CI
<i>Taking insulin</i>									
25 – 34	7	3 (42.9)	14.4, 77.0	18	3 (16.7)	5.5, 40.9	25	6 (24.0)	11.2, 44.2
35 – 44	38	8 (21.1)	10.9, 36.8	55	8 (14.5)	7.4, 26.5	93	16 (17.2)	10.8, 26.3
45 – 54	51	10 (19.6)	10.9, 32.7	67	14 (20.9)	12.8, 32.3	118	24 (20.3)	14.0, 28.6
55 – 64	63	13 (20.6)	12.4, 32.4	31	6 (19.4)	9.0, 36.9	94	19 (20.2)	13.3, 29.5
65 +	26	9 (34.6)	19.1, 54.3	9	2 (22.2)	5.6, 57.9	35	11 (31.4)	18.3, 48.3
Total	185	43 (23.2)	17.7, 29.9	180	33 (18.3)	13.3, 24.7	365	76 (20.8)	17.0, 25.3
<i>Oral drug</i>									
25 – 34	7	4 (57.1)	23.0, 85.6	18	7 (38.9)	19.8, 62.1	25	11 (44.0)	26.3, 63.4
35 – 44	38	23 (60.5)	44.4, 74.6	55	32 (58.2)	44.9, 70.4	93	55 (59.1)	48.9, 68.6
45 – 54	51	28 (54.9)	41.2, 67.9	67	46 (68.7)	56.7, 78.6	118	74 (62.7)	53.7, 71.0
55 – 64	63	40 (63.5)	51.0, 74.4	31	18 (58.1)	40.4, 73.9	94	58 (61.7)	51.5, 70.9
65 +	26	19 (73.1)	53.3, 86.6	9	6 (66.7)	33.3, 88.9	35	25 (71.4)	54.6, 83.9
Total	185	114 (61.6)	54.4, 68.3	180	109 (60.6)	53.2, 67.4	365	223 (61.1)	56.0, 66.0
<i>Oral drug and/or insulin</i>									
25 – 34	7	4 (57.1)	15.6, 99.9	18	9 (50.0)	22.9, 94.9	25	14 (52.0)	27.7, 88.9
35 – 44	38	26 (68.4)	44.7, 100.0	55	34 (61.8)	42.8, 86.4	93	60 (64.5)	49.2, 83.0
45 – 54	51	29 (56.9)	38.1, 81.7	67	49 (73.1)	54.1, 96.7	118	78 (66.1)	52.3, 82.5
55 – 64	63	41 (65.1)	46.7, 100.0	31	18 (58.1)	34.4, 91.8	94	59 (62.8)	47.8, 80.9
65 +	26	20 (76.9)	47.0, 100.0	9	6 (66.7)	24.5, 100.0	35	26 (74.3)	48.5, 80.9
Total	185	120 (64.9)	53.8, 77.6	180	116 (64.4)	42.5, 70.5	365	236 (64.7)	56.7, 73.5

Table 8.3: Diabetic respondents who received advice for lifestyle modification from a doctor or health worker

Age (years)	Men			Women			Both sexes		
	Number	n (%)	95% CI	Number	n (%)	95% CI	Number	n (%)	95% CI
<i>Diet</i>									
25 – 34	7	5 (71.4)	32.7, 92.8	18	16 (88.9)	64.8, 97.2	25	21 (84.0)	64.3, 93.9
35 – 44	38	33 (86.8)	72.0, 94.4	55	49 (89.1)	77.8, 95.0	93	82 (88.2)	79.9, 93.3
45 – 54	51	44 (86.3)	73.9, 93.3	67	61 (91.0)	81.5, 95.9	118	105 (89.0)	81.9, 93.5
55 – 64	63	60 (95.2)	86.2, 98.5	31	28 (90.3)	73.9, 96.8	94	88 (93.6)	86.5, 97.1
65 +	26	25 (96.2)	77.2, 99.5	9	8 (88.9)	50.0, 98.5	35	33 (94.3)	79.8, 98.6
Total	185	167 (90.3)	85.1, 93.8	180	162 (90.0)	84.7, 93.6	365	329 (90.1)	86.6, 92.8
<i>Lose weight</i>									
25 – 34	7	5 (71.4)	32.7, 92.8	18	10 (55.6)	33.0, 76.0	25	15 (60.0)	40.3, 77.0
35 – 44	38	27 (71.1)	54.9, 83.2	55	39 (70.9)	57.7, 81.4	93	66 (71.0)	61.0, 79.3
45 – 54	51	40 (78.4)	65.1, 87.6	67	43 (64.2)	52.1, 74.7	118	83 (70.3)	61.5, 77.9
55 – 64	63	41 (65.1)	52.6, 75.8	31	18 (58.1)	40.4, 73.9	94	59 (62.8)	52.6, 71.9
65 +	26	18 (69.2)	49.4, 83.8	9	4 (44.4)	17.7, 74.9	35	22 (62.9)	46.0, 77.1
Total	185	131 (70.8)	63.9, 76.9	180	114 (63.3)	56.1, 70.1	365	245 (67.1)	62.1, 71.8
<i>Stop smoking</i>									
25 – 34	7	4 (57.1)	23.0, 85.6	18	2 (11.1)	2.8, 35.2	25	6 (24.0)	11.2, 44.2
35 – 44	38	26 (68.4)	52.2, 81.1	55	14 (25.5)	15.7, 38.5	93	40 (43.0)	33.2, 53.2
45 – 54	51	37 (72.5)	58.8, 83.0	67	15 (22.4)	14.0, 33.9	118	52 (44.1)	35.4, 53.1
55 – 64	63	45 (71.4)	59.1, 81.2	31	12 (38.7)	23.5, 56.5	94	57 (60.6)	50.5, 70.0
65 +	26	18 (69.2)	49.4, 83.8	9	0 (0)	-	35	18 (51.4)	35.3, 67.3
Total	185	130 (70.3)	63.3, 76.4	180	43 (23.9)	18.2, 30.7	365	173 (47.4)	42.3, 52.5
<i>Start or do more exercise</i>									
25 – 34	7	5 (71.4)	32.7, 92.8	18	14 (77.8)	53.5, 91.4	25	19 (76.0)	55.8, 88.8
35 – 44	38	31 (81.6)	66.1, 91.0	55	48 (87.3)	75.6, 93.8	93	79 (84.9)	76.2, 90.9
45 – 54	51	44 (86.3)	73.9, 93.3	67	56 (83.6)	72.7, 90.7	118	100 (84.7)	77.1, 90.2
55 – 64	63	57 (90.5)	80.4, 95.7	31	24 (77.4)	59.6, 88.8	94	81 (86.2)	77.6, 91.8
65 +	26	25 (96.2)	77.2, 99.5	9	5 (55.6)	25.1, 82.3	35	30 (85.7)	69.9, 93.9
Total	185	162 (87.6)	82.0, 91.6	180	147 (81.7)	75.3, 86.7	365	309 (84.7)	80.6, 88.0

Table 8.4: Distribution of the diabetic respondents who sought advice or treatment from traditional healers for diabetes

Age (years)	Men			Women			Both sexes		
	Number	n (%)	95% CI	Number	n (%)	95% CI	Number	n (%)	95% CI
<i>Sought advice or treatment</i>									
25 – 44	45	5 (11.1)	2.0, 24.9	73	4 (5.5)	0.8, 15.6	118	9 (7.6)	2.0, 15.0
45 +	140	15 (10.7)	4.1, 34.5	107	4 (3.7)	0.7, 50.0	247	19 (7.7)	2.9, 30.1
Total	185	20 (10.8)	7.1, 16.2	180	8 (4.4)	2.2, 8.6	365	28 (7.7)	5.3, 10.9
<i>Currently taking herbal or traditional remedy</i>									
25 – 44	45	2 (4.4)	2.0, 16.5	73	5 (6.8)	2.8, 15.6	118	7 (5.9)	3.9, 10.9
45 +	140	8 (5.7)	2.4, 34.5	107	0 (0)	-	247	8 (3.2)	1.6, 26.8
Total	185	10 (5.4)	2.9, 9.8	180	5 (2.8)	1.2, 6.5	365	15 (4.1)	2.5, 6.7

Table 9: Distribution of the respondents by the number of risk factors*

Age (years)	Number	At least one		Two or more		3 or more	
		n (%)	95% CI	n (%)	95% CI	n (%)	95% CI
Men							
25 – 44	2 248	2 239 (99.6)	95.5, 99.9	1 733 (77.1)	73.5, 80.8	382 (17.0)	15.3, 18.8
45+	2 064	2 056 (99.6)	95.3, 99.9	1 840 (89.1)	85.1, 93.3	681 (33.0)	30.5, 35.6
Total	4 312	4 295 (99.6)	96.7, 99.9	3 573 (82.9)	80.2, 85.6	1 063 (24.7)	23.2, 26.2
Women							
25 – 44	3 447	3 353 (97.3)	94.0, 99.9	2 304 (66.9)	64.1, 69.6	813 (23.6)	22.0, 25.3
45+	1 516	1 504 (99.2)	94.3, 99.9	1 301 (85.8)	81.2, 90.6	751 (49.5)	46.1, 53.2
Total	4 963	4 857 (97.9)	95.1, 99.9	3 605 (72.6)	70.3, 75.1	1 564 (31.5)	30.0, 33.1
Both sexes							
25 – 44	5 695	5 592 (98.2)	95.6, 99.9	4 037 (70.9)	68.7, 73.1	1 195 (21.0)	19.8, 22.2
45+	3 580	3 560 (99.4)	96.2, 99.9	3 141 (87.7)	85.0, 91.0	1 432 (40.0)	37.9, 42.1
Total	9 275	9 152 (98.7)	96.6, 99.9	7 178 (77.4)	75.7, 79.2	2 627 (28.3)	27.2, 29.4

*Combined risk factors include current tobacco use, less than 5 servings of fruit and vegetables intake per day, low level of physical activity, overweight (BMI ≥ 25 kg/m²) and raised blood pressure ≥ 140 / 90 mmHg or currently on medication for raised blood pressure.





Bangladesh Society of Medicine



**World Health
Organization**
Country Office for Bangladesh



N.C.D
Directorate General of Health Services



Ministry of Health & Family Welfare