NATIONAL NON COMMUNICABLE DISEASE RISK FACTOR SURVEY

Report

DIRECTORATE OF NON COMMUNICABLE DISEASE
MINISTRY OF HEALTHCARE AND NUTRITION
SRI LANKA

MINISTRY OF HEALTHCARE AND NUTRITION
HEALTH SECTOR DEVELOPMENT PROJECT / WORLD BANK
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01. INTRODUCTION AND RATIONALE

Non Communicable Diseases (NCDs) are emerging as the major cause of death and disability worldwide. This is the result of demographic and epidemiological transition, along with increases of risk factors resulting from social and economic changes. NCDs are estimated to be responsible for almost 60% of the deaths in the world and 43% of the global burden of disease (1). Based on current trends, these diseases are predicted to account for 73% of global deaths and 60% of the global burden of disease by the year 2020 (2).

For several decades, NCDs have been the burden of the developed countries of the world. Now they have been recognized as a public health threat in the developing world with the burden of disease from NCDs expected to rise by more than 60% in the developing and the newly industrialized countries over the next 30 years (2). In contrast, the increase in the developed countries is expected to be less than 10%.

The countries of the South-East Asia Region (SEAR) reported more than 7 million deaths due to NCDs in 1999, making up more than 20% of the total deaths (1). In Sri Lanka too, the NCDs are emerging as a major health priority. For example, the five leading causes of hospital deaths for 2001 were all NCDs (3).

In Sri Lanka, Non Communicable Diseases (NCD) are on the increase due to a rapid transition in lifestyle. Cardiovascular diseases solely contribute 18% deaths at the government health institutions compared to 8% deaths due to all communicable diseases. A significant reduction in births, fertility and mortality rates with a considerable increase of life expectancy had led to a growth of elderly population. In the aged population all major NCD are more visible and the prevalence is higher. When analyzing the key risk factors, the trends are in upward direction in Sri Lanka. These include increased consumption of energy-densed, nutrient-poor foods that are high in fat, sugar and salt. All these unhealthy eating patterns are in existence within the context of sedentary life.

In this background, prevention and control programmes for NCDs require specific goals and quantifiable outcomes to be reached within a defined timeframe and an assessment of their progress towards achieving them. The continuing assessment of a country’s progress towards attaining such goals requires surveillance of NCDs and their risk factors (4). Emphasis is laid on the fact that the ultimate goal of surveillance is the use of the data collected for the formulation of policies and programmes to promote health and prevent disease. It is also useful for measuring the impact of preventive efforts. Similarly, analysis of trends and important emerging health issues can be incorporated into a surveillance system as well.

Therefore, a well functioning NCD surveillance system is considered an integral part of public health surveillance and the wider health information system, providing information for planning, implementation, monitoring and evaluation of public health intervention programmes (5). It will also raise public and political awareness concerning the likely extent of the problem with regard to NCDs and their risk factors. In Sri Lanka, considering the upward trend in the incidence of NCDs, it is timely that we initiate a simple and sustainable surveillance mechanism for NCD risk factors; hence the initiation of this baseline survey as a first step.
In countries with limited resources, the priority is to ensure the collection of at least the minimum data necessary for policy formulation, programme implementation and monitoring and evaluation, within the existing health infrastructure. Thus the emphasis is to focus on NCD risk factors and their prevention and control. The World Health Organization (WHO) has formulated the **STEPwise approach to Surveillance (STEPS)** of NCD risk factors. It is based on sequential levels of surveillance of different aspects of non communicable diseases, allowing flexibility and integration at any level by maintaining standardized questionnaires and protocols to ensure comparability over time and across borders (6).

The STEPS approach, which strives to measure these risk factors, is based on the concept that surveillance systems require standardized data collection as well as sufficient flexibility to be appropriate in a variety of country situations and settings. It also advocates that small amounts of good quality data are more valuable than large amounts of poor quality data or none at all. In addition, monitoring a few modifiable NCD risk factors are thought to be beneficial as they reflect both a large part of future NCD burden as well as indicating the success of interventions for those NCDs (6).

STEPS is a sequential process and the recommended surveillance measures are categorised according to the degree of complexity in obtaining the data. The degree of difficulty equates to whether questionnaires alone are used (Step 1), physical measures are collected in the field (Step 2) or laboratory measurements requiring external expertise are involved (Step 3). At each Step, mandatory comparable core information is collected, with the potential to collect expanded comparable information, and also information on discretionary optional variables.

**Figure 1: The general concept of the STEPwise approach to surveillance (STEPS)**

This project is the first national NCD risk factor survey conducted to ascertain the basic risk factors responsible for major NCDs in Sri Lanka after a pilot survey conducted in one health area using the same methodology. It is considered as the initial step that will pave the way to establish a mechanism for NCD risk factor surveillance in Sri Lanka.
This national survey to assess the baseline levels of NCD risk factors with sufficient sample size to have the power to detect changes overtime was an appropriate first step towards initiating surveillance on NCDs in Sri Lanka whilst providing important information for determining the priorities for intervention.

2. GOALS AND OBJECTIVES

2.1 GOAL

To establish a mechanism for Non Communicable Disease risk factor surveillance in Sri Lanka.

2.2 OBJECTIVES

2.2.1 GENERAL OBJECTIVE

To conduct a Non Communicable Disease risk factor survey in Sri Lanka.

2.2.2 SPECIFIC OBJECTIVES

1. To ascertain the prevalence of key risk factors for major Non Communicable Diseases.
2. To assess the baseline for Healthy Lifestyle interventions of Non Communicable Disease component of Health Sector Development project.
3. To set up the infrastructure for a sustainable national Non Communicable Disease surveillance mechanism.
3. METHODOLOGY

3.1 OVERVIEW

Target population – 15-64 year old current population of Sri Lanka

Country
↓
5 Districts
↓
5 MOH areas (1 per District)
↓
50 PHM areas (10 per MOH area)
↓
Study Population
(A total of 12500 subjects comprising 1250 subjects from each 10 year age-sex category)
↓
STEPS Instrument for NCD Risk Factors (WHO)

Questionnaire based assessment (Home)
↓ within 2 weeks

Physical measures (Clinic)

Risk factors

1 Tobacco use
2 Alcohol consumption
3 Fruit and vegetable consumption (Green leafy vegetables included as an Optional module)
4 Physical inactivity
5 Overweight
6 Blood pressure
3.2 SURVEY DESIGN

A population based national survey to study selected risk factors for NCDs was carried out using a descriptive cross-sectional design. The survey design was based on the “STEPwise Approach to NCD Surveillance (STEPS)” (6). The survey was conducted at the level of Step 2 (Questionnaire based assessment and Physical measures). The risk factor assessment incorporated all Core modules as recommended by the WHO as well as a few Expanded and Optional modules to suit local requirements.

3.2.1 TIMING OF ASSESSMENTS
The physical measurements were measured in the field clinic within 2 weeks of the recruitment and questionnaire based assessment which was carried out in the environs of the participant’s residence.

Questionnaire based assessment (Home)

↓ Within 2 weeks

Physical measures (Clinic)

3.2.2 SURVEY VARIABLES

3.2.2.1 SELECTION OF RISK FACTORS

A “risk factor” refers to any attribute, characteristic or exposure of an individual, which increases the likelihood of developing a non communicable disease. Population measures of risk factors are used to describe the distribution of future disease in a population. The knowledge of risk factors can be applied to shift population distribution of these factors.

The WHO cites four main considerations for the choice of risk factors in surveillance activities (6):

1. The significance of the risk factors for public health in terms of the nature and severity of the morbidity, disability and mortality of the NCDs associated with these risk factors;
2. The cost of collecting valid data on a repeated basis;
3. The availability and strength of the evidence that intervening on the factor will reduce NCDs in the community and
4. The ability to measure the risk factor burden uniformly in different settings to ensure comparability and to measure changes over time.

Hence, the following key risk factors as per the WHO Step approach were included in the survey.
1. Tobacco use
2. Alcohol consumption
3. Fruit and vegetable consumption (Green leafy vegetables included as an Optional module)
4. Physical inactivity
5. Overweight
6. Blood pressure

3.2.2.2 DATA VARIABLES AND DERIVED INDICATORS

The selected risk factors were assessed by transforming them into data variables and health indicators. Appropriate indicators which focus on determinants of NCDs with the goal of eliminating health disparities and improving the number and quality of years of healthy life were used. The core indicators are given below in table 1.

Table 1: Core indicators for the selected risk factors

<table>
<thead>
<tr>
<th>Step 1 Behavioural</th>
<th>Key Risk Factor</th>
<th>Data Variable</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobacco use</td>
<td>Current daily smoker</td>
<td>• Proportion of adults currently smoking cigarettes daily</td>
<td></td>
</tr>
<tr>
<td>Alcohol consumption</td>
<td>Current drinker</td>
<td>• Proportion of adults currently drinking – past 30 days</td>
<td></td>
</tr>
<tr>
<td>Physical inactivity</td>
<td>Duration of total activity</td>
<td>• Proportion of inactive adults</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Median level of physical activity</td>
<td></td>
</tr>
<tr>
<td>Fruit and vegetable consumption</td>
<td>Number of servings of fruit and vegetable</td>
<td>• Proportion of adults eating less than 5 servings a day</td>
<td></td>
</tr>
<tr>
<td>Step 2 Physical measures</td>
<td>Overweight</td>
<td>Body Mass Index, body weight, waist circumference</td>
<td>• Mean Body Mass Index, mean waist circumference</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>Systolic and diastolic blood pressure</td>
<td>• Mean systolic blood pressure</td>
<td>• Proportion of adults with elevated blood pressure</td>
</tr>
</tbody>
</table>
3.3 SURVEY SETTING
The survey was conducted to assess the baseline levels of the selected risk factors in Sri Lanka. The survey was community based and the collection of data was done in 5 randomly selected districts of the country. One Medical Officer of Health (MOH) area was selected randomly from each of these districts and participants were recruited from 10 randomly selected Public Health Midwife (PHM) areas from each of these MOH areas.

3.4 SELECTION OF STUDY POPULATION
A chronic disease generally occurs following prolonged exposure to risk factors and for this reason, surveillance for risk factors is recommended by the WHO in the population aged 25-64 years (6). Considering the impact of the risk factors selected for surveillance on lifestyles and the need and the potential for modification, the age group 15-24 has been added (e.g. age at initiation of smoking). Therefore, the target population comprises of males and females aged 15-64 years in Sri Lanka.

Target population – 15-64 year old current population of Sri Lanka

↓ sampling

Study Population

Sampling was carried out amongst those who are eligible to be participants (both females and males aged 15-64 years and resident in the geographical area) to select the actual study population.

3.4.1 EXCLUSION CRITERIA
- Age <15 years and 65 years and above
- Too frail or mentally unfit to participate
- Unable or unwilling to give informed consent

3.5 SAMPLE SIZE AND SAMPLING TECHNIQUE

3.5.1 SAMPLE SIZE

- Minimum sample size recommended
According to WHO estimates, a minimum of 250 subjects in each 10 year age and sex group across the age range 25-64 years (a total of 2000 subjects) is thought to be sufficient to estimate the means of the variables at Step 1 or Step 2 listed in the STEPwise approach with a high level of precision (6). This basic recommendation assumes that the population is homogenous, and allows analysis by sub-groups age and sex only.
Table 2: Minimum sample size recommended by WHO for STEPS

<table>
<thead>
<tr>
<th>Age (yrs)</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-34</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>35-44</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>45-54</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>55-64</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1000</strong></td>
<td><strong>1000</strong></td>
</tr>
</tbody>
</table>

In addition, the WHO recommends increasing the minimum sample size by a further 250 females and 250 males from the particular age group for the inclusion of an additional 10 year age group (age group 15-24 years in the case of this survey).

- **Total sample size of the survey**

A total of 250 subjects (125 females and 125 males) were recruited from each PHM area for the survey. Their age and sex composition is given below.

Table 3: Composition of the sample from each PHM area

<table>
<thead>
<tr>
<th>Age (yrs)</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-24</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>25-34</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>35-44</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>45-54</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>55-64</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>125</strong></td>
<td><strong>125</strong></td>
</tr>
</tbody>
</table>

Therefore, a total of **12500** subjects (250 subjects per PHM area × 50 PHM areas =12500 subjects) were recruited for the survey (table 4). This comprised of 1250 subjects from each age-sex category for the entire survey (compared to the minimum requirement of 2500), which will significantly increase the precision of the survey findings.

Table 4: Composition of the total sample for the survey

<table>
<thead>
<tr>
<th>Age (yrs)</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-24</td>
<td>1250</td>
<td>1250</td>
</tr>
<tr>
<td>25-34</td>
<td>1250</td>
<td>1250</td>
</tr>
<tr>
<td>35-44</td>
<td>1250</td>
<td>1250</td>
</tr>
<tr>
<td>45-54</td>
<td>1250</td>
<td>1250</td>
</tr>
<tr>
<td>55-64</td>
<td>1250</td>
<td>1250</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6250</strong></td>
<td><strong>6250</strong></td>
</tr>
</tbody>
</table>

3.5.2 SAMPLING TECHNIQUE

Multistage sampling was carried out considering the overwhelming geographical relevance of the survey and the economy in sampling and data collection. Initially, five districts were selected randomly from a list of all districts of Sri Lanka. Thereafter, from each of these districts, one MOH area was selected randomly. A list of all MOH areas of each of these districts was used for this purpose. From a complete listing of PHM areas for each of these MOH areas, ten PHM areas were selected randomly as the final-stage clusters.
Subjects who were eligible to participate in the survey were recruited from these PHM areas. Each of these 50 clusters were comprised of a total of 250 subjects (125 females and 125 males) consisting of 25 subjects from each age-sex category (Table 3).

<table>
<thead>
<tr>
<th>Country</th>
<th>5 Districts</th>
<th>5 MOH areas (1 per District)</th>
<th>50 PHM areas (10 per MOH area)</th>
</tr>
</thead>
</table>

This was the first among regular risk factor surveys planned to be conducted every 4-5 years thereafter with a view towards establishing a national NCD surveillance system, thus encompassing all districts of Sri Lanka within about 2 decades, in surveys.

3.6 DATA COLLECTION INSTRUMENT

3.6.1 DESCRIPTION OF THE STANDARD WHO INSTRUMENT

**STEPS Instrument for NCD Risk Factors (Core and Expanded Version 1.4)** is the standard instrument developed and disseminated by the WHO STEPS Programme for use after adaptation and translation according to the requirements of the local setting. The framework (for Step 1 and Step 2) is shown in table 5.

Step 1 provides data from self-reported information. Standard WHO definitions for measuring prevalence of tobacco use and alcohol consumption and a new internationally devised measure of physical activity are used in the Step 1 questionnaire. Step 2 includes as a minimum, a core module and adds the physical measurements weight, height, waist circumference and blood pressure. (Details of Step 3 which incorporates Steps 1 and 2 and adds information obtained from blood samples are not given here since this survey does not include biochemical assays)
### Table 5: Standard WHO instrument at a glance

<table>
<thead>
<tr>
<th>Step 1 Behavioural</th>
<th>Core Items</th>
<th>Expanded Items</th>
<th>Optional Items</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age, sex and years at school</td>
<td>Ethnicity, employment, household income</td>
<td>Examples include: items on behavioural factors such as mental health, disability, unintentional and violent injury; and/or items aimed at programme development and evaluation such as attitudes and barriers related to the CORE and EXPANDED items</td>
</tr>
<tr>
<td></td>
<td>Tobacco use</td>
<td>household income, nutrition, and physical activity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alcohol consumption</td>
<td>Smokeless tobacco, food preparation and fat consumption, types of physical activity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physical inactivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fruit and vegetable consumption</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2 Physical Measures</td>
<td>Weight and height</td>
<td>History of blood pressure, recall of treatment for elevated blood pressure</td>
<td>Skinfold thickness, measured pulse rate, objective behaviour of physical activity behaviour, assessment of physical fitness</td>
</tr>
<tr>
<td></td>
<td>Waist girth</td>
<td>Hip circumference</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blood pressure</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3.6.2 Compilation of the current survey instrument (Appendix 3)

### Table 6: Current survey instrument at a glance

<table>
<thead>
<tr>
<th>Step 1 Behavioural</th>
<th>Core Items</th>
<th>Expanded Item</th>
<th>Optional Items</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age, sex and years at school</td>
<td>Smokeless tobacco use</td>
<td>Green leafy vegetable consumption</td>
</tr>
<tr>
<td></td>
<td>Tobacco use</td>
<td></td>
<td>Sedentary - watching television</td>
</tr>
<tr>
<td></td>
<td>Alcohol consumption</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Physical inactivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fruit and vegetable consumption</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2 Physical Measures</td>
<td>Weight and height</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Waist girth</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blood pressure</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The current survey operated at the second level and incorporates all Core modules of the questionnaire based Step 1 and physical measures of Step 2. In addition, it includes a few modules extracted from the Expanded items and also, selected Optional items. It does not include biochemical measures. A description of the adapted version is given in Table 6.
3.6.3 TRANSLATION, CULTURAL ADAPTATION AND PILOT TESTING OF THE QUESTIONNAIRE
Translation, cultural adaptation and pilot testing of the questionnaire have been done and the instrument has already been adopted at national level. Some questions have been modified from the WHO instrument to suit local needs whilst preserving their original meaning and intent in a culturally appropriate manner. This includes the examples given for the tobacco products (smoking and smokeless), alcoholic beverages, standard size of alcohol consumption, standard serving of fruit/vegetable and examples for the kinds of physical activity. The forward-backward translation procedure was followed for the translation of the instrument. (Annexure 1).

3.6.4 ASSESSMENT OF CONTENT VALIDITY
Appraisal of content validity assesses whether the conceptual definition has been appropriately translated into operational terms and whether the components of each section cover all aspects attributed to be measured. The content validity was assessed by the members of the National Technical Advisory Committee on NCD risk factor survey comprising of multidisciplinary experts in Community Medicine, Clinical Medicine, Medical Administration Health Education and Communication.

3.7 METHOD OF DATA COLLECTION
The existing regional public health structure was utilized for the collection of data considering the need for continued surveillance in future in order to integrate into the health system.

Recruitment and Questionnaire based assessment during field visit by PHM

↓ within 2 weeks

Physical measures during referral clinic visit by PHM/PHI/PHNS supervised by MOH

3.7.1 RECRUITMENT AND QUESTIONNAIRE BASED ASSESSMENT
The recruitment was done randomly using the household list. The PHM visited the household and assesses the patient for eligibility. The PMH explained the purpose of the study and the data collection procedure to eligible subjects. Thereafter, the participants were recruited after obtaining informed written consent using a standard consent form (Annexure 02). The subjects were then interviewed for the completion of sections on demographic details, tobacco use, alcohol consumption, diet and physical activity. Important aspects with regard to collection of data in each of these sections were given in the operations manual.
In none of these sections, a proxy rating by a third person (such as a family member) was allowed. If a participant refuses to answer a question or a section, it was to be noted on the form with the reason for refusal. Maximum efforts were taken to ensure the completion of all sections of the questionnaire. Special attention was paid to ensure smooth flow of questions and confidentiality was assured.
Completed questionnaires were kept in the custody of the interviewer. The participant were issued a referral card (Annexure 3) and invited to attend the field clinic for measurement of physical parameters within 2 weeks. The date, time and the location of clinic were marked on the card.

3.7.2 PHYSICAL MEASURES

Existing field clinics of the selected MOH areas were chosen as survey clinics. They were equipped with the necessary measuring equipment and stationary prior to the survey. Separate stations were set up for measurement of weight, height, waist circumference and blood pressure as well as registration and checkout in sequence. A quiet room was identified to measure blood pressure.

Maximum efforts were taken to ensure the privacy of the participant during measurement. Females and males were accommodated in separate sections of the clinics to ensure privacy. On arrival, each participant was located from the list of invited individuals at the registration section. A sequential survey number was given and this was written beside the name in the census list and at the top of the individual’s survey form. The participant was then given the survey instrument form and was instructed to proceed from station to station for the various measures to be taken. Important aspects with regard to measurement of each of these variables were given in the operations manual.

At the end of all measures, each participant was issued with a leaflet on “Healthy Lifestyle”. Any query of the participant was discussed and thanked for the participation in the project. Those who were diagnosed to have elevated blood pressure were referred to the nearest health institute for follow up. A referral card was issued for this purpose.

All data forms were handed over to the MO/NCD who was function as the District Coordinator by the respective PHMs. The data forms in turn to be handed over to the central NCD unit. Confidentiality of all data was ensured at all stages.

3.8 COORDINATION AND SUPERVISION

The overall guidance was given by the Director/NCD as the Principal Investigator of the project.

A Coordinator from NCD unit was appointed to coordinate the survey with the field staff. The MOO/NCD from the relevant district was Coordinating at the district level and supervised the data collection procedure in the district. The relevant MOH was functioning as the Local Coordinator and supervised the data collection procedure for the survey in her/his area.
3.9 DATA ENTRY AND STATISTICAL ANALYSIS

Guidelines of the WHO for data entry and analysis were followed. Data analysis was carried out by the development assistant of the NCD unit of the Ministry of Health who were trained on the statistical data analysis package by the WHO/HQ. The standard WHO software package developed for NCD STEPwise Surveillance (STEPS) data analysis was used.

3.10 ETHICAL CONSIDERATIONS

The following ethical considerations were adhered to.

- Ethical Clearance was obtained from the Ministry of health.
- A standard consent form for the participants was used (Appendix 5).
- Subjects diagnosed to have high blood pressure were referred to the nearest health institute for follow up.
- A leaflet on “Healthy Lifestyle” was given to each subject with advice highlighting risk factors existing in them.
- Participants were reassured that there will be no discrimination for refusal to be enrolled or withdrawal while taking maximum effort to ensure the participation of all those eligible to participate.
- Confidentiality of all data was assured.
- All efforts were taken to adhere to the standard guidelines of the WHO protocol on “STEPwise Approach To NCD Surveillance (STEPS)”
### 4. RESULTS

#### 4.1. Smoking

Table 4.1.1. Smoking Status

<table>
<thead>
<tr>
<th>Category</th>
<th>Male number</th>
<th>Male percentage</th>
<th>Female number</th>
<th>Female percentage</th>
<th>Both Sexes number</th>
<th>Both Sexes percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-daily Smoker</td>
<td>431</td>
<td>7.0%</td>
<td>7</td>
<td>0.1%</td>
<td>438</td>
<td>3.5%</td>
</tr>
<tr>
<td>Daily Smoker</td>
<td>1,402</td>
<td>22.8%</td>
<td>18</td>
<td>0.3%</td>
<td>1,420</td>
<td>11.5%</td>
</tr>
<tr>
<td>Non Smoker</td>
<td>4,307</td>
<td>70.1%</td>
<td>6,236</td>
<td>99.6%</td>
<td>10,543</td>
<td>85.0%</td>
</tr>
<tr>
<td>Total</td>
<td>6,140</td>
<td>100.0%</td>
<td>6,261</td>
<td>100.0%</td>
<td>12,401</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 4.1.2. Smokers by Type of the Cigarettes Used Among Daily Smokers

<table>
<thead>
<tr>
<th>Category</th>
<th>Male number</th>
<th>Male percentage</th>
<th>Female number</th>
<th>Female percentage</th>
<th>Both Sexes number</th>
<th>Both Sexes percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoke Manufactured Cigarettes</td>
<td>1,202</td>
<td>85.7%</td>
<td>17</td>
<td>94.4%</td>
<td>1,219</td>
<td>85.8%</td>
</tr>
<tr>
<td>Doesn't Smoke Manufactured Cigarettes</td>
<td>200</td>
<td>14.3%</td>
<td>1</td>
<td>5.6%</td>
<td>201</td>
<td>14.2%</td>
</tr>
<tr>
<td>Total</td>
<td>1,402</td>
<td>100.0%</td>
<td>18</td>
<td>100.0%</td>
<td>1,420</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 4.1.3. Amount of Manufactured Cigarettes Used among Current Daily Smokers

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>Both Sexes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean No. of Manufactured Cigarettes</td>
<td>9.0</td>
<td>13.8</td>
<td>9.2</td>
</tr>
</tbody>
</table>

Table 4.1.4. Initiation and Duration of Smoking among Current Daily Smokers

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>Both Sexes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age started smoking (year)</td>
<td>27.6</td>
<td>23.9</td>
<td>27.5</td>
</tr>
<tr>
<td>Duration of Smoking (mean years)</td>
<td>16.1</td>
<td>20.1</td>
<td>16.1</td>
</tr>
</tbody>
</table>
4.2. Alcohol Consumption

Table 4.2.1. Drinking Status

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th></th>
<th>Female</th>
<th></th>
<th>Both Sexes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>percentage</td>
<td>number</td>
<td>percentage</td>
<td>number</td>
<td>percentage</td>
</tr>
<tr>
<td>Abstainer</td>
<td>2,881</td>
<td>47.2%</td>
<td>5,856</td>
<td>93.8%</td>
<td>8,737</td>
<td>70.8%</td>
</tr>
<tr>
<td>Current Drinker</td>
<td>1,586</td>
<td>26.0%</td>
<td>75</td>
<td>1.2%</td>
<td>1,661</td>
<td>13.5%</td>
</tr>
<tr>
<td>Not Current Drinker</td>
<td>1,636</td>
<td>26.8%</td>
<td>312</td>
<td>5.0%</td>
<td>1,948</td>
<td>15.8%</td>
</tr>
<tr>
<td>Total</td>
<td>6,103</td>
<td>100.0%</td>
<td>6,243</td>
<td>100.0%</td>
<td>12,346</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 4.2.2. Drinking of Alcohol during the Last Week (among those who drank alcohol in the last 30 days)

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th></th>
<th>Female</th>
<th></th>
<th>Both Sexes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>percentage</td>
<td>number</td>
<td>percentage</td>
<td>number</td>
<td>percentage</td>
</tr>
<tr>
<td>4 or more days</td>
<td>253</td>
<td>17.4%</td>
<td>1</td>
<td>1.5%</td>
<td>254</td>
<td>16.7%</td>
</tr>
<tr>
<td>Less than 4 days</td>
<td>1,200</td>
<td>82.6%</td>
<td>65</td>
<td>98.5%</td>
<td>1,265</td>
<td>83.3%</td>
</tr>
<tr>
<td>Total</td>
<td>1,453</td>
<td>100.0%</td>
<td>66</td>
<td>100.0%</td>
<td>1,519</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 4.2.3. No. of Standard Drinks per Day

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th></th>
<th>Female</th>
<th></th>
<th>Both Sexes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>percentage</td>
<td>number</td>
<td>percentage</td>
<td>number</td>
<td>percentage</td>
</tr>
<tr>
<td>1</td>
<td>893</td>
<td>28.6%</td>
<td>186</td>
<td>50.7%</td>
<td>1,079</td>
<td>31.0%</td>
</tr>
<tr>
<td>2 - 3</td>
<td>560</td>
<td>18.0%</td>
<td>66</td>
<td>18.0%</td>
<td>626</td>
<td>18.0%</td>
</tr>
<tr>
<td>4 - 5</td>
<td>109</td>
<td>3.5%</td>
<td>6</td>
<td>1.6%</td>
<td>115</td>
<td>3.3%</td>
</tr>
<tr>
<td>6+</td>
<td>1,556</td>
<td>49.9%</td>
<td>109</td>
<td>29.7%</td>
<td>1,665</td>
<td>47.8%</td>
</tr>
<tr>
<td>Total</td>
<td>3,118</td>
<td>100.0%</td>
<td>367</td>
<td>100.0%</td>
<td>3,485</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Table 4.2.4. Mean No. of Drinks per Day

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>Both Sexes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean No. of Drinks</td>
<td>4.8</td>
<td>3.2</td>
<td>4.6</td>
</tr>
</tbody>
</table>
Table 4.2.5. Frequency of Alcohol Consumption among Drinkers

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>Female</th>
<th>Both Sexes</th>
<th>Both Sexes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>percentage</td>
<td>number</td>
<td>percentage</td>
<td>number</td>
</tr>
<tr>
<td>Less than once a month</td>
<td>1,817</td>
<td>56.2%</td>
<td>376</td>
<td>95.2%</td>
<td>2,193</td>
</tr>
<tr>
<td>1 - 3 days per month</td>
<td>703</td>
<td>21.7%</td>
<td>13</td>
<td>3.3%</td>
<td>716</td>
</tr>
<tr>
<td>1 - 4 days per week</td>
<td>321</td>
<td>9.9%</td>
<td>2</td>
<td>0.5%</td>
<td>323</td>
</tr>
<tr>
<td>5 - 6 days per week</td>
<td>89</td>
<td>2.8%</td>
<td>2</td>
<td>0.5%</td>
<td>91</td>
</tr>
<tr>
<td>Daily</td>
<td>303</td>
<td>9.4%</td>
<td>2</td>
<td>0.5%</td>
<td>305</td>
</tr>
<tr>
<td>Total</td>
<td>3,233</td>
<td>100.0%</td>
<td>395</td>
<td>100.0%</td>
<td>3,628</td>
</tr>
</tbody>
</table>

4.3. Fruit and Vegetable Consumption

Table 4.3.1. Mean No. of Days Fruits / Vegetables Consumed

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>Both Sexes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean No. of days fruits consumed</td>
<td>3.6</td>
<td>3.7</td>
<td>3.7</td>
</tr>
<tr>
<td>Mean No. of days vegetables consumed</td>
<td>6.6</td>
<td>6.7</td>
<td>6.7</td>
</tr>
</tbody>
</table>

Table 4.3.2. Mean No. of Servings of Fruits / Vegetables Consumed per Day

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>Both Sexes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean No. of servings of fruits consumed per day</td>
<td>1.1</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>Mean No. of servings of vegetables consumed per day</td>
<td>2.2</td>
<td>2.2</td>
<td>2.2</td>
</tr>
<tr>
<td>Mean No. of servings of fruits &amp; vegetables consumed per day</td>
<td>3.3</td>
<td>3.2</td>
<td>3.2</td>
</tr>
</tbody>
</table>
### Table 4.3.3. No. of Servings of Fruits and Vegetables Consumed per Day

<table>
<thead>
<tr>
<th>Category</th>
<th>Male number</th>
<th>Male percentage</th>
<th>Female number</th>
<th>Female percentage</th>
<th>Both Sexes number</th>
<th>Both Sexes percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>144</td>
<td>2.4%</td>
<td>119</td>
<td>1.9%</td>
<td>263</td>
<td>2.2%</td>
</tr>
<tr>
<td>1 - 2</td>
<td>3,151</td>
<td>52.3%</td>
<td>3,361</td>
<td>54.7%</td>
<td>6,512</td>
<td>53.5%</td>
</tr>
<tr>
<td>3 - 4</td>
<td>1,605</td>
<td>26.7%</td>
<td>1,643</td>
<td>26.7%</td>
<td>3,248</td>
<td>26.7%</td>
</tr>
<tr>
<td>5 or more</td>
<td>1,120</td>
<td>18.6%</td>
<td>1,027</td>
<td>16.7%</td>
<td>2,147</td>
<td>17.6%</td>
</tr>
<tr>
<td>Total</td>
<td>6,020</td>
<td>100.0%</td>
<td>6,150</td>
<td>100.0%</td>
<td>12,170</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

### Table 4.3.4.

<table>
<thead>
<tr>
<th>Category</th>
<th>Male number</th>
<th>Male percentage</th>
<th>Female number</th>
<th>Female percentage</th>
<th>Both Sexes number</th>
<th>Both Sexes percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;5 servings of fruits/vegetables per day</td>
<td>4,900</td>
<td>81.4%</td>
<td>5,123</td>
<td>83.3%</td>
<td>10,023</td>
<td>82.4%</td>
</tr>
<tr>
<td>5 or more servings of fruits/vegetables per day</td>
<td>1,120</td>
<td>18.6%</td>
<td>1,027</td>
<td>16.7%</td>
<td>2,147</td>
<td>17.6%</td>
</tr>
<tr>
<td>Total</td>
<td>6,020</td>
<td>100.0%</td>
<td>6,150</td>
<td>100.0%</td>
<td>12,170</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

### 4.4. Physical Activity

#### Table 4.4.1. Levels of Total Physical Activity

<table>
<thead>
<tr>
<th>Category</th>
<th>Male number</th>
<th>Male percentage</th>
<th>Female number</th>
<th>Female percentage</th>
<th>Both Sexes number</th>
<th>Both Sexes percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Level</td>
<td>3,730</td>
<td>64.7%</td>
<td>2,515</td>
<td>42.5%</td>
<td>6,245</td>
<td>53.5%</td>
</tr>
<tr>
<td>Moderate Level</td>
<td>1,002</td>
<td>17.4%</td>
<td>1,512</td>
<td>25.6%</td>
<td>2,514</td>
<td>21.5%</td>
</tr>
<tr>
<td>Low Level</td>
<td>1,033</td>
<td>17.9%</td>
<td>1,888</td>
<td>31.9%</td>
<td>2,921</td>
<td>25.0%</td>
</tr>
<tr>
<td>Total</td>
<td>5,765</td>
<td>100.0%</td>
<td>5,915</td>
<td>100.0%</td>
<td>11,680</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

#### Table 4.4.2. Total Physical Activity per Day

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>Both Sexes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median time spent in physical activity per day (minutes)</td>
<td>195.0</td>
<td>64.2</td>
<td>118.6</td>
</tr>
</tbody>
</table>
Table 4.4.3. Percent of Total Physical Activity by Category

<table>
<thead>
<tr>
<th>Category</th>
<th>Work</th>
<th>Transport</th>
<th>Recreation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>63.5</td>
<td>27.7</td>
<td>8.7</td>
</tr>
<tr>
<td>Female</td>
<td>53.7</td>
<td>41.5</td>
<td>4.8</td>
</tr>
<tr>
<td>Both Sexes</td>
<td>58.6</td>
<td>34.6</td>
<td>6.7</td>
</tr>
</tbody>
</table>

Table 4.4.4. Sedentary time

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>Both Sexes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median Sedentary time spent per day (Minutes)</td>
<td>120.0</td>
<td>120.0</td>
<td>120.0</td>
</tr>
</tbody>
</table>

4.5. Physical Measurements

Table 4.5.1. Body Mass Index (BMI)

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Height (cm)</td>
<td>163.5</td>
<td>152.2</td>
</tr>
<tr>
<td>Mean Weight (kg)</td>
<td>58.1</td>
<td>52.8</td>
</tr>
<tr>
<td>Mean BMI</td>
<td>22.0</td>
<td>23.1</td>
</tr>
</tbody>
</table>

Table 4.5.2. BMI Classifications

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>Both Sexes</th>
</tr>
</thead>
<tbody>
<tr>
<td>number</td>
<td>number</td>
<td>percentage</td>
<td>number</td>
</tr>
<tr>
<td>Underweight (&lt;18.5)</td>
<td>1,127</td>
<td>19.1%</td>
<td>854</td>
</tr>
<tr>
<td>Normal weight (18.5 - 24.9)</td>
<td>3,613</td>
<td>61.3%</td>
<td>3,308</td>
</tr>
<tr>
<td>Overweight (25 - 29.99)</td>
<td>939</td>
<td>15.9%</td>
<td>1,469</td>
</tr>
<tr>
<td>Obese (30+)</td>
<td>213</td>
<td>3.6%</td>
<td>351</td>
</tr>
<tr>
<td>Overweight (25+)</td>
<td>1,152</td>
<td>19.6%</td>
<td>1,820</td>
</tr>
</tbody>
</table>
Table 4.5.3. Average Waist Circumference

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average waist circumference (cm)</td>
<td>78.9</td>
<td>77.3</td>
</tr>
</tbody>
</table>

Table 4.5.4. Mean Blood Pressure

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>Both Sexes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Systolic Blood Pressure (excluding those currently on medication for raised BP)</td>
<td>125.4</td>
<td>120.2</td>
<td>122.8</td>
</tr>
<tr>
<td>Mean Diastolic Blood Pressure (excluding those currently on medication for raised BP)</td>
<td>72.3</td>
<td>71.7</td>
<td>72.0</td>
</tr>
</tbody>
</table>
Table 4.5.5. Raised Blood Pressure

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>Both Sexes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>percentage</td>
<td>number</td>
</tr>
<tr>
<td>SBP&lt;140 and DBP&lt;90 (excluding those on medication)</td>
<td>4,786</td>
<td>81.5%</td>
<td>5,041</td>
</tr>
<tr>
<td>SBP&gt;=140 and or DBP&gt;=90 (excluding those on medication)</td>
<td>1,088</td>
<td>18.5%</td>
<td>795</td>
</tr>
<tr>
<td>Total</td>
<td>5,874</td>
<td>100.0%</td>
<td>5,836</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>Both Sexes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>percentage</td>
<td>number</td>
</tr>
<tr>
<td>SBP&lt;160 and DBP&lt;100 (excluding those on medication)</td>
<td>5,632</td>
<td>95.9%</td>
<td>5,609</td>
</tr>
<tr>
<td>SBP&gt;=160 and or DBP&gt;=100 (excluding those on medication)</td>
<td>242</td>
<td>4.1%</td>
<td>227</td>
</tr>
<tr>
<td>Total</td>
<td>5,874</td>
<td>100.0%</td>
<td>5,836</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>Both Sexes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>percentage</td>
<td>number</td>
</tr>
<tr>
<td>SBP&lt;140 and DBP&lt;90 (excluding those on medication)</td>
<td>4,786</td>
<td>77.8%</td>
<td>5,041</td>
</tr>
<tr>
<td>SBP&gt;=140 and or DBP&gt;=90 or currently on medication</td>
<td>1,364</td>
<td>22.2%</td>
<td>1,226</td>
</tr>
<tr>
<td>Total</td>
<td>6,150</td>
<td>100.0%</td>
<td>6,267</td>
</tr>
<tr>
<td>Category</td>
<td>Male</td>
<td>Female</td>
<td>Both Sexes</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>----------</td>
<td>-----------</td>
<td>------------</td>
</tr>
<tr>
<td></td>
<td>number</td>
<td>percentage</td>
<td>number</td>
</tr>
<tr>
<td>SBP&lt;160 and DBP&lt;100</td>
<td>5,632</td>
<td>91.6%</td>
<td>5,609</td>
</tr>
<tr>
<td>SBP&gt;=160 and or DBP&gt;=100 or currently on medication</td>
<td>518</td>
<td>8.4%</td>
<td>658</td>
</tr>
<tr>
<td>Total</td>
<td>6,150</td>
<td>100.0%</td>
<td>6,267</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>Both Sexes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>percentage</td>
<td>number</td>
</tr>
<tr>
<td>Currently on medication for raised BP</td>
<td>276</td>
<td>4.5%</td>
<td>431</td>
</tr>
<tr>
<td>Not currently on medication for raised BP</td>
<td>5,874</td>
<td>95.5%</td>
<td>5,836</td>
</tr>
<tr>
<td>Total</td>
<td>6,150</td>
<td>100.0%</td>
<td>6,267</td>
</tr>
</tbody>
</table>

### 4.6. Raised Risk

#### 4.6.1

<table>
<thead>
<tr>
<th>Category</th>
<th>Male</th>
<th>Female</th>
<th>Both Sexes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>number</td>
<td>percentage</td>
<td>number</td>
</tr>
<tr>
<td>0 Risk Factors</td>
<td>444</td>
<td>8.2%</td>
<td>390</td>
</tr>
<tr>
<td>1 - 3 Risk Factors</td>
<td>4,735</td>
<td>88.0%</td>
<td>4,965</td>
</tr>
<tr>
<td>4 - 5 Risk Factors</td>
<td>204</td>
<td>3.8%</td>
<td>177</td>
</tr>
<tr>
<td>Total</td>
<td>5,383</td>
<td>100.0%</td>
<td>5,532</td>
</tr>
</tbody>
</table>
REFERENCES

NATIONAL NCD RISK FACTOR SURVEY
Instrument

Adopted from:
The WHO STEPwise approach to Surveillance of Noncommunicable diseases (STEPS)

Non Communicable Disease Unit
Ministry of Healthcare and Nutrition
385, Deans Road, Colombo 10, Sri Lanka

For further information: dncd@health.gov.lk
Step 1  | Demographic Information

**CORE: Demographic Information**

<table>
<thead>
<tr>
<th>Questions</th>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 Sex (Record Male / Female as observed)</td>
<td>Male 1 Female 2</td>
<td>C1</td>
</tr>
<tr>
<td>12 What is your date of birth? Don't Know 7777777777</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>dd mm year</td>
<td>C2</td>
</tr>
<tr>
<td>13 How old are you?</td>
<td>Years</td>
<td>C3</td>
</tr>
<tr>
<td>14 In total, how many years have you spent at school or in full-time study (excluding pre-school)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Years</td>
<td>C4</td>
</tr>
</tbody>
</table>

**EXPANDED: Demographic Information**

<table>
<thead>
<tr>
<th>Questions</th>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 What is the highest level of education you have completed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No formal schooling 1 Less than primary school 2 Primary school completed 3 Secondary school completed 4 College/University completed 5 Post graduate degree 6 Refused 7</td>
<td>C6</td>
</tr>
</tbody>
</table>
# 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.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>16  Do you currently smoke any <strong>tobacco products</strong>, such as cigarettes, cigars or pipes?</td>
<td>Yes 1</td>
<td>T1</td>
</tr>
<tr>
<td></td>
<td>No 2 If No, go to T6</td>
<td></td>
</tr>
<tr>
<td>17  If Yes, do you currently smoke tobacco products daily?</td>
<td>Yes 1</td>
<td>T2</td>
</tr>
<tr>
<td></td>
<td>No 2 If No, go to T6</td>
<td></td>
</tr>
<tr>
<td>18  How old were you when you <strong>first started</strong> smoking daily?</td>
<td>Age (years)</td>
<td>T3</td>
</tr>
<tr>
<td></td>
<td>Don't remember  777 If Known, go to T5a</td>
<td></td>
</tr>
<tr>
<td>19  Do you remember how long ago it was?</td>
<td><strong>(RECORD ONLY 1, NOT ALL 3)</strong></td>
<td>T4a</td>
</tr>
<tr>
<td></td>
<td>Don't remember  777 If Known, go to T5a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OR in Years If Known, go to T5a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OR in Months If Known, go to T5a</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OR in Weeks If Known, go to T5a</td>
<td></td>
</tr>
<tr>
<td>20  On average, how many of the following do you smoke each day?</td>
<td>Manufactured cigarettes</td>
<td>T5a</td>
</tr>
<tr>
<td></td>
<td>Hand-rolled cigarettes</td>
<td>T5b</td>
</tr>
<tr>
<td></td>
<td>Pipes full of tobacco</td>
<td>T5c</td>
</tr>
<tr>
<td></td>
<td>Cigars, cheroots, cigarillos</td>
<td>T5d</td>
</tr>
<tr>
<td></td>
<td>Other If other, go to T5</td>
<td>T5e</td>
</tr>
<tr>
<td></td>
<td>Other (please specify):</td>
<td>T5other</td>
</tr>
</tbody>
</table>

**EXPANDED: Tobacco Use**

<table>
<thead>
<tr>
<th>Questions</th>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>21  In the past, did you <strong>ever</strong> smoke daily?</td>
<td>Yes 1</td>
<td>T6</td>
</tr>
<tr>
<td></td>
<td>No 2</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>T8a</td>
<td></td>
</tr>
<tr>
<td>23  Do you <strong>currently use</strong> any <strong>smokeless tobacco</strong> such as [snuff, chewing tobacco, betel]?</td>
<td>Yes 1</td>
<td>T9</td>
</tr>
<tr>
<td></td>
<td>No 2</td>
<td></td>
</tr>
<tr>
<td>24  If Yes, do you <strong>currently use</strong> smokeless tobacco products daily?</td>
<td>Yes 1</td>
<td>T10</td>
</tr>
<tr>
<td></td>
<td>No 2</td>
<td></td>
</tr>
<tr>
<td>25  On average, how many times a day do you use ....</td>
<td>Snuff, by mouth</td>
<td>T11a</td>
</tr>
<tr>
<td></td>
<td>Snuff, by nose</td>
<td>T11b</td>
</tr>
<tr>
<td></td>
<td>Chewing tobacco</td>
<td>T11c</td>
</tr>
<tr>
<td></td>
<td>Betel, quid</td>
<td>T11d</td>
</tr>
<tr>
<td></td>
<td>Other If Other, go to T11 other</td>
<td>T11e</td>
</tr>
<tr>
<td></td>
<td>Other (specify)</td>
<td>T11other</td>
</tr>
</tbody>
</table>
### CORE: Alcohol Consumption

The next questions ask about the consumption of alcohol.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you consumed alcohol (such as beer, wine, spirits, fermented cider or add other local examples) within the past 12 months? (USE SHOWCARD OR SHOW EXAMPLES)</td>
<td>Yes 1</td>
<td>A1</td>
</tr>
<tr>
<td></td>
<td>No 2 If No, go to D1</td>
<td></td>
</tr>
<tr>
<td>In the past 12 months, how frequently have you had at least one drink? (READ RESPONSES USE SHOWCARD)</td>
<td>Daily 1</td>
<td>A2</td>
</tr>
<tr>
<td></td>
<td>5-6 days per week 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1-4 days per week 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1-3 days per month 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Less than once a month 5</td>
<td></td>
</tr>
<tr>
<td>When you drink alcohol, on average, how many drinks do you have during one day?</td>
<td>Number</td>
<td>A3</td>
</tr>
<tr>
<td></td>
<td>Don't know 77</td>
<td></td>
</tr>
<tr>
<td>Have you consumed alcohol (such as beer, wine, spirits, fermented cider or add other local examples) within the past 30 days? (USE SHOWCARD OR SHOW EXAMPLES)</td>
<td>Yes 1</td>
<td>A4</td>
</tr>
<tr>
<td></td>
<td>No 2 If No, go to A 6</td>
<td></td>
</tr>
<tr>
<td>During each of the past 7 days, how many standard drinks of any alcoholic drink did you have each day? (RECORD FOR EACH DAY USE SHOWCARD)</td>
<td>Monday</td>
<td>A5a</td>
</tr>
<tr>
<td></td>
<td>Tuesday</td>
<td>A5b</td>
</tr>
<tr>
<td></td>
<td>Wednesday</td>
<td>A5c</td>
</tr>
<tr>
<td></td>
<td>Thursday</td>
<td>A5d</td>
</tr>
<tr>
<td></td>
<td>Friday</td>
<td>A5e</td>
</tr>
<tr>
<td></td>
<td>Saturday</td>
<td>A5f</td>
</tr>
<tr>
<td></td>
<td>Sunday</td>
<td>A5g</td>
</tr>
</tbody>
</table>

### 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.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>In a typical week, on how many days do you eat fruit? (USE SHOWCARD)</td>
<td>Number of days</td>
<td>D1</td>
</tr>
<tr>
<td></td>
<td>Don't know 77</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If Zero days, go to D3</td>
<td></td>
</tr>
<tr>
<td>How many servings of fruit do you eat on one of those days? (USE SHOWCARD)</td>
<td>Number of servings</td>
<td>D2</td>
</tr>
<tr>
<td></td>
<td>Don't know 77</td>
<td></td>
</tr>
<tr>
<td>In a typical week, on how many days do you eat vegetables? (USE SHOWCARD)</td>
<td>Number of days</td>
<td>D3</td>
</tr>
<tr>
<td></td>
<td>Don't know 77</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If Zero days, go to D5</td>
<td></td>
</tr>
<tr>
<td>How many servings of vegetables do you eat on one of those days? (USE SHOWCARD)</td>
<td>Number of servings</td>
<td>D4</td>
</tr>
<tr>
<td></td>
<td>Don't know 77</td>
<td></td>
</tr>
</tbody>
</table>

### OPTIONAL: Diet

<table>
<thead>
<tr>
<th>Questions</th>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>In a typical week, on how many days do you eat green leafy vegetables? (USE SHOWCARD)</td>
<td>Number of days</td>
<td>D6</td>
</tr>
<tr>
<td></td>
<td>Don't know 77</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If Zero days, go to P1</td>
<td></td>
</tr>
<tr>
<td>How many servings of green leafy vegetables do you eat on one of those days? (USE SHOWCARD)</td>
<td>Number of servings</td>
<td>D6</td>
</tr>
<tr>
<td></td>
<td>Don't know 77</td>
<td></td>
</tr>
</tbody>
</table>
CORE: Physical Activity

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

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

<table>
<thead>
<tr>
<th>Questions</th>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity at work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37 Does your work involve vigorous-intensity activity that causes large increases in breathing or heart rate like [carrying or lifting heavy loads, digging or construction work] for at least 10 minutes continuously?</td>
<td>Yes 1</td>
<td>P1</td>
</tr>
<tr>
<td></td>
<td>No 2 if No, go to P 4</td>
<td></td>
</tr>
<tr>
<td>38 In a typical week, on how many days do you do vigorous-intensity activities as part of your work?</td>
<td>Number of days</td>
<td>P2</td>
</tr>
<tr>
<td>39 How much time do you spend doing vigorous-intensity activities at work on a typical day?</td>
<td>Hours : minutes</td>
<td>P3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(a-b)</td>
</tr>
<tr>
<td>40 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?</td>
<td>Yes 1</td>
<td>P4</td>
</tr>
<tr>
<td></td>
<td>No 2 if No, go to P 7</td>
<td></td>
</tr>
<tr>
<td>41 In a typical week, on how many days do you do moderate-intensity activities as part of your work?</td>
<td>Number of days</td>
<td>P5</td>
</tr>
<tr>
<td>42 How much time do you spend doing moderate-intensity activities at work on a typical day?</td>
<td>Hours : minutes</td>
<td>P6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(a-b)</td>
</tr>
<tr>
<td>Travel to and from places</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The next questions exclude the physical activities at work that you have already mentioned. Now I would like to ask you about the usual way you travel to and from places. For example to work, for shopping, to market, to place of worship. [insert other examples if needed]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>43 Do you walk or use a bicycle (pedal cycle) for at least 10 minutes continuously to get to and from places?</td>
<td>Yes 1</td>
<td>P7</td>
</tr>
<tr>
<td></td>
<td>No 2 if No, go to P 10</td>
<td></td>
</tr>
<tr>
<td>44 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?</td>
<td>Number of days</td>
<td>P8</td>
</tr>
<tr>
<td>45 How much time do you spend walking or bicycling for travel on a typical day?</td>
<td>Hours : minutes</td>
<td>P9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(a-b)</td>
</tr>
<tr>
<td>Recreational activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The next questions exclude the work and transport activities that you have already mentioned. Now I would like to ask you about sports, fitness and recreational activities (leisure). [insert relevant terms].</td>
<td></td>
<td></td>
</tr>
<tr>
<td>46 Do you do any vigorous-intensity sports, fitness or recreational (leisure) activities that cause large increases in breathing or heart rate like [running or football,] for at least 10 minutes continuously?</td>
<td>Yes 1</td>
<td>P10</td>
</tr>
<tr>
<td></td>
<td>No 2 if No, go to P 13</td>
<td></td>
</tr>
<tr>
<td>47 In a typical week, on how many days do you do vigorous-intensity sports, fitness or recreational (leisure) activities?</td>
<td>Number of days</td>
<td>P11</td>
</tr>
<tr>
<td>48 How much time do you spend doing vigorous-intensity sports, fitness or recreational activities on a typical day?</td>
<td>Hours : minutes</td>
<td>P12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(a-b)</td>
</tr>
</tbody>
</table>
**CORE: Physical Activity (recreational activities) contd.**

<table>
<thead>
<tr>
<th>Questions</th>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>49  Do you do any moderate-intensity sports, fitness or recreational (leisure) activities that causes a small increase in breathing or heart rate such as brisk walking, cycling, swimming, volleyball for at least 10 minutes continuously?</td>
<td>Yes 1</td>
<td>P13</td>
</tr>
<tr>
<td>50  In a typical week, on how many days do you do moderate-intensity sports, fitness or recreational (leisure) activities?</td>
<td>Number of days</td>
<td>P14</td>
</tr>
<tr>
<td>51  How much time do you spend doing moderate-intensity sports, fitness or recreational (leisure) activities on a typical day?</td>
<td>Hours : minutes</td>
<td>P15 (a-b)</td>
</tr>
</tbody>
</table>

**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, travelling in car, bus, train, reading, playing cards or watching television, but do not include time spent sleeping.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>52  How much time do you usually spend sitting or reclining on a typical day?</td>
<td>Hours : minutes</td>
<td>P16 (a-b)</td>
</tr>
</tbody>
</table>

**OPTIONAL: Physical Activity**

<table>
<thead>
<tr>
<th>Questions</th>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>53  How much time do you usually spend watching television on a typical day?</td>
<td>Hours : minutes</td>
<td>P17 (a-b)</td>
</tr>
</tbody>
</table>

*Thank you for your participation*
## Step 2 Physical Measurements

<table>
<thead>
<tr>
<th>CORE: Height and Weight</th>
<th>Response</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>54 Interviewer ID</td>
<td></td>
<td>M1</td>
</tr>
<tr>
<td>55 Device IDs for height and weight</td>
<td></td>
<td>M2a</td>
</tr>
<tr>
<td>56 Height in Centimetres (cm)</td>
<td></td>
<td>M3</td>
</tr>
<tr>
<td>57 Weight in Kilograms (kg)</td>
<td></td>
<td>M4</td>
</tr>
<tr>
<td>58 (For women) Are you pregnant?</td>
<td>Yes 1 If Yes, go to M 8</td>
<td>M5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CORE: Waist</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>59 Device ID for waist</td>
<td></td>
<td>M6</td>
</tr>
<tr>
<td>60 Waist circumference in Centimetres (cm)</td>
<td></td>
<td>M7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CORE: Blood Pressure</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>61 Interviewer ID</td>
<td></td>
<td>M8</td>
</tr>
<tr>
<td>62 Device ID for blood pressure</td>
<td></td>
<td>M9</td>
</tr>
<tr>
<td>63 Cuff size used</td>
<td>Small 1</td>
<td>M10</td>
</tr>
<tr>
<td></td>
<td>Medium 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Large 3</td>
<td></td>
</tr>
<tr>
<td>64 Reading 1 Systolic (mmHg)</td>
<td></td>
<td>M11a</td>
</tr>
<tr>
<td>65 Reading 2 Systolic (mmHg)</td>
<td></td>
<td>M12a</td>
</tr>
<tr>
<td>66 Reading 3 Systolic (mmHg)</td>
<td></td>
<td>M13a</td>
</tr>
<tr>
<td>67 During the past two weeks, have you been treated for raised blood pressure with drugs (medication) prescribed by a doctor or other health worker?</td>
<td>Yes 1</td>
<td>M14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXPANDED: Hip Circumference and Heart Rate</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>68 Hip circumference in Centimetres (cm)</td>
<td></td>
<td>M15</td>
</tr>
<tr>
<td>69 Heart Rate (Record if automatic blood pressure device is used)</td>
<td></td>
<td>M16a</td>
</tr>
<tr>
<td>Reading 1 Beats per minute</td>
<td></td>
<td>M16a</td>
</tr>
<tr>
<td>Reading 2 Beats per minute</td>
<td></td>
<td>M16b</td>
</tr>
<tr>
<td>Reading 3 Beats per minute</td>
<td></td>
<td>M16c</td>
</tr>
</tbody>
</table>
Annexure 02

ක්ෂ කෙටුණි ආරම්භය හෝ අරම්භ දුන්න කොටස්ගේද්ව ඉදිරිපත්

ක්ෂ අන්ධුනාංග නිවැරදි මාලිණිය මධ්‍ය නැතම් යන්න ගැටීම මතුදක් කෙටුණි මත යනමුළු කොටසක් විශේෂ තමන්ගේ විධි දැක්වා කෙටුණි යන්න. මෙම විධි අන්ධුනාංග නිවැරදි මධ්‍ය පිහිටිවිට කොටසක් පක්ෂීන් මේවා ඉරිය ගෙන එක විධි හා ප්‍රධාන සහයත්තා ගැටීම මතුදක් කෙටුණිගේ දැක්වා කෙටුණි යන්න. මෙහෙයින් අතර මෙම නිවැරදීය මේවා විධි හා ප්‍රධාන සහයත්තා ගැටීම මතුදක් යන්න. 

ක්ෂිය මේවා නම් මතුදක් ප්‍රධාන සහයත්තා ගැටීම මතුදක් යන්න, මෙහෙයින් විධි ප්‍රධාන සහයත්තා ගැටීම මතුදක් යන්න.

ශ්‍රී දේශපාලන මහත්මීය ඉදිරිපත්කමවත් අන්ධනරඳු මෙරට මෙහෙයින් ඉදිරිපත්කමය අපුරුෂ් විශේෂ ප්‍රධානමතුදක් දත්කාලයක් අවසන් කිරීම.

................................. .................................
සමග  හොඳම
Annexure 03

REFERRAL CARD

National NCD Risk Factor Survey

<table>
<thead>
<tr>
<th>SBP (mm Hg)</th>
<th>DBP (mm Hg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
</tr>
</tbody>
</table>

Referred by: ___________________________      Clinic: ___________________________
Date: ___________________________      Time: ___________________________

Referred to: MO / OPD
GH / BH / DH / RH / PU / CD ___________________________
# Diet (Typical Fruit and Vegetables and Serving Sizes)

<table>
<thead>
<tr>
<th>Vegetables Are considered to be:</th>
<th>1 Serving =</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw green leafy vegetables</td>
<td>1 cup</td>
<td>Spinach, Salad, etc...</td>
</tr>
<tr>
<td>Other vegetables, cooked or chopped raw</td>
<td>½ cup</td>
<td>Tomato, Carrots, Brinjals, Beans, Bitter gourd, etc...</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fruits Is considered to be:</th>
<th>1 Serving =</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Apple, Banana, Orange, Mango</strong></td>
<td>1 medium size</td>
<td></td>
</tr>
<tr>
<td><strong>Melon</strong></td>
<td>half (1/2) of medium</td>
<td></td>
</tr>
<tr>
<td><strong>Papaya</strong></td>
<td>¼ of medium size</td>
<td></td>
</tr>
<tr>
<td><strong>Avocado</strong></td>
<td>quarter (1/4) of medium size</td>
<td></td>
</tr>
<tr>
<td><strong>Pineapple</strong></td>
<td>2 slices</td>
<td></td>
</tr>
<tr>
<td><strong>Grapes</strong></td>
<td>1 ½ cup</td>
<td></td>
</tr>
</tbody>
</table>
## Physical Activity

<table>
<thead>
<tr>
<th>MODERATE Physical Activities</th>
<th>VIGOROUS Physical Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involve moderate physical effort for at least 10 minutes continuously</td>
<td>Involve hard physical effort for at least 10 minutes continuously</td>
</tr>
<tr>
<td>This make you breathe somewhat harder than normal</td>
<td>This makes you breathe much harder than normal</td>
</tr>
</tbody>
</table>

### Examples:

#### Work related
- Cleaning
- Farming
- Washing
- Painting/plastering
- Gardening
- Milking cows (by hand)
- Weaving
- Mixing cements (with shovel)
- Labouring (e.g. pushing loaded wheelbarrow)
- Drawing water
- Tending animals
- Climbing stairs

#### Leisure / Spare time
- Cycling
- Dancing
- Aerobics
- Swimming
- Brisk walking
- Jogging

#### Work related
- Carrying heavy loads
- Heavy construction
- Digging
- Forestry
- Ploughing
- Shovelling
- Sawing wood

#### Leisure / Spare time
- Running
- Strenuous sports
- Weight lifting
Alcohol Consumption

1 standard drink =

- 1 standard bottle of regular beer (285ml)
- 1 single measure of spirits (30ml)
- 1 medium size of glass of wine (120ml)
- 1 measure of aperitif (30ml)
- 1 medium size coconut shell of toddy (160ml)

ALCOHOL EQUIVALENTS

Wine:
1 GLASS OF WINE 1 Drink
1 BOTTLE OF WINE 6 Drinks
1 "WINE COOLER" 1 Drink

Beer:
1 SMALL BOTTLE / CAN OF BEER 1 Drink
1 CASE OF BEER 6/12/24 Drinks

Hard Liquor:
1 HIGHBALL OR SHORT GLASS 1 Drink
1/2 PINT OF LIQUOR (30ml) 6 Drinks
1 PINT OF LIQUOR 12 Drinks