

**ASSESSMENT OF HEALTH SEEKING BEHAVIOUR ON
HYPERTENSION AND ASSOCIATED FACTORS AT
GILGEL GIBE FIELD RESEARCH CENTER,
SOUTHWEST ETHIOPIA.**



BY:

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JIMMA UNIVERSITY
COLLEGE OF PUBLIC HEALTH AND MEDICAL SCIENCES

**Assessment of Health Seeking Behavior on Hypertension and
Associated Factors at Gilgel Gibe Field Research Center,
Southwest Ethiopia.**

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Here I in close with rising all my glory and praise for the greatest hand of -LORD! JESUS.

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Abstract

Background: Hypertension, the leading cause of mortality and the third largest cause of disability in the world. It is a growing public health problem in many developing countries including. However, it is poorly controlled worldwide. The fact shows that no study has been conducted in seeking health for hypertension in South West Ethiopia.

Objective: This study aim is to assess the health seeking behavior on hypertension and associated factors among adults in gilgel gibe field research center, South-West Ethiopia.

Methods: A community based cross-sectional chronic illness survey was conducted in 2008-09 in Gilgel Gibe Field Research Center, Jimma Zone, and South -West Ethiopia. Adults aged 15-64 y were recruited using random sampling technique after stratifying by age, sex and residence. Data on socio-demographic characteristics of adults and chronic non-communicable diseases inventories were collected using face-to-face interviewing and systolic and diastolic blood pressure measurements were also measured. This analysis was part of the survey for determination of magnitude of Chronic Non Communicable Diseases, risk factors of chronic noncommunicable diseases and biochemical, immunological and hematological value determination for the community at gilgel gibe field research center.

Results: A total of 4315, 52% female and 75% rural residents were included in this analysis. About 22% were aged 55 years or older. The proportion of those seeks blood pressure measured in the past 12 month were 9.9% (11.4% female and 8.2% male). About 17% (18% female and 6% male) of the 9.9% were told they had raised blood pressure by doctors or other health professionals. Of those who never had their BP measured almost 8% (7% female and 9% male) were diagnosed as hypertensive. Residence, occupation, educational level, age and BMI measure were among the factors associated with seeking health for hypertension.

Conclusion: The study revealed there were a higher proportion of respondents who never measured their raised blood pressure. It indicates majority of the community were poor in seeking health for hypertension. Being rural, being an uneducated, being nonpaid worker, being housewife, aging and being obese were a factors associated with seeking health for hypertension among gilgel gibe field research center adults. It is recommended to focus on this determinant when planning to control chronic noncommunicable diseases specially on hypertension.

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List of Abbreviation

Bp	Blood pressure
CNCD/NCD	Chronic Noncommunicable Disease
CVD	Cardio Vascular Disease
FMOH	Federal Minister of Health
GGFRC	Gilgel Gibe Field Research Center
HEW	Health Extension worker
HSB	Health Seeking Behavior
HSDP	Health Sector Development Plan
JU	Jimma University
MET	Metabolic Equivalent Task
NGO	Non-Governmental Organization
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1. Background

Chronic disease has been defined as illness that is prolonged in duration, does not often resolve spontaneously, and is rarely cured completely. Chronic diseases are complex and varied in terms of their nature, how they are caused and the extent of their impact on the community. Disease rates from chronic noncommunicable disease are accelerating globally, advancing across every region and pervading all socioeconomic classes. A total of 57 million deaths occurred in the world during 2008; 36 million (63%) were due to CNCD. Of this 12.8% death was attributing to Hypertension [1-3]. Measures should to be taken to diagnose and prevent or postpone this complication [4]

Hypertension is most commonly known as High Blood Pressure. It is a chronic medical condition in which the blood pressure is elevated. A person is considered to have hypertension (high blood pressure) if their blood pressure is above 140/90. Any blood pressure above normal should be attended to with appropriate treatments [5]. As hypertension rarely causes specific symptoms [4]; many people have it for many years without knowing their raised Bp [5]. Awareness on hypertension was significantly associated with gender, age, geographical location, occupation, and co morbidity [6].

Most of the time there are no symptoms and it is undetected until an individual's blood pressure is measured by a physician [4], but when high blood pressure untreated, it damage arteries and vital organs throughout the body and cause heart disease, stroke and kidney disease. Due to this high blood pressure is often called "silent killer. People who do not control their blood pressure die earlier than people who control their blood pressure [5]. This study is conducted to assess the health seeking behavior of GGFRC population on hypertension and the associated factors.

1.2 Statement of problem

Despite the increasing prevalence rates of chronic noncommunicable diseases; Public health and primary care intervention against noncommunicable disease in the low-income nations are often inadequate [7,8]. Worldwide, raised blood pressure estimated to cause 7.5 million deaths, about 12.8% of the total of all annual deaths. The overall prevalence of raised blood pressure in adults aged 25 and over was around 40% in 2008. The proportion of the world's population with high blood pressure, or uncontrolled hypertension fell modestly between 1980 and 2008. However, because of population growth and ageing, the number of people with hypertension rose from 600 million in 1980 to nearly 1 billion in 2008 [9].

The prevalence of raised blood pressure was highest in the African Region, where it was 46% for both sexes combined. The lowest prevalence of raised blood pressure was in the WHO Region of the Americas, with 35% for both sexes. Men in this region had a slightly higher prevalence than women (39% and 32% respectively). In all WHO regions, men have slightly higher prevalence of raised blood pressure than women [10].

In developing countries, patients develop symptoms earlier, get sicker, and die sooner than their counterparts in wealthier nations [11]. Almost 30% of all CNCD deaths occur to people under age 60 in low and middle-income countries; it is three times greater when compared with high-income countries. This pattern was observed among both men and women. However, in most countries, a higher proportion of CNCD death occur among men before age 60 than women [30].

The major risk factors of Hypertension include race, obesity, aging, sex, alcoholism, sedentary lifestyle, diet (including salt intake), and family history of hypertension. Some of these risk factors for hypertension are modifiable through lifestyle interventions or by lifestyle modifications and medical management. Myocardial infarction and stroke occur 2-3 times more often among individuals with untreated hypertension. Hypertension doubles the risk of cardiovascular diseases such as coronary heart diseases, congestive heart failure, stroke, renal failure, and peripheral arterial diseases [10-13].

Awareness about treatment and control of hypertension is extremely low among developing nations including Ethiopia. In these countries health care resources are overwhelmed by other priorities including HIV/AIDS, tuberculosis, and malaria. Little is known about the magnitude and determinants of hypertension in Ethiopia. However, recent evidences indicate that raised blood pressure are increasing partly because of the increase in risk factors including smoking, obesity, harmful use of alcohol and lack of exercise [17].

The failure to control hypertension takes an unacceptable toll on patients and their families. Uncontrolled hypertension creates huge, avoidable economic burdens when viewed in terms of the general population [14]. NCDs diminish household earnings and a family's ability to provide for and educate children; and expenditure on the risk factor especially tobacco, and alcohol are the other which contributes to household poverty. The loss of productivity reduces a society's effective labour force, resulting in reductions in overall economic output of the country [20].

In Ethiopia, routine health care reports are incomplete and erratic. Lack of nationwide data on causes of death clouds understanding of the burden of disease or its composition. Consequently, there is limited knowledge on the course of the epidemiological transition, which has left room for widespread skepticism concerning the importance of chronic diseases in the country [22].

Although risky behaviors are often perceived as being solely a matter of personal choice, behavior is shaped by multiple forces operating at different levels, and this study result will be one among those contributors. Behavior that presents a risk to health is influenced not only by individual choices, but also by socio-demographic, socio-economic, human biology; social norms; culture; and others. So this study aims to assess the blood pressure measurement and treatment seeking of GGFRC people on hypertension and factor associated. As a result the study will suggest feasible solutions to presented problem. It will also play great role in policy formulation and policy implications on the control and prevention of CNCD.

CHAPTER TWO

LITRATURE REVIEW

2.1. Health Seeking Behavior

Health seeking behavior forms an important component in formulating health programs as successful interventions. In widest sense, health behavior includes activities associated with establishing and retaining a healthy state plus dealing with any departure from that state. Health seeking behavior, gives an idea of what people do when diseased and the factors influencing their behavior. The factors influencing may be characteristics of the subject, characteristics of the disease, and characteristics of the health services [21].

The concept of studying health seeking behaviors has ultimately become a tool for understanding how people employ the health care system in their perspective socio-cultural, economic and demographic circumstances. All this behavior actually defines social position of health and provides a better understanding of the disease process. It is therefore imperative to study the impact of the determinants [25].

Health Seeking Behavior in this thesis refers action undertaken to diagnose hypertension and prevent or postpone its complications by individuals who perceive them to have a health problem or to be ill for the purpose of finding an appropriate remedy [24].

As hypertension rarely causes specific symptoms, it is undetected until an individual's blood pressure is measured by a physician. Physicians recommend that people with prehypertension undergo diet and lifestyle changes, such as losing weight and quitting smoking, in order to prevent a rise in blood pressure. Some patients can lower their blood pressure by limiting salt in their diet. Increasing physical activity and reducing alcohol consumption to less than two drinks per day for men and one drink per day for women may also lower blood pressure. For those with stage 1 and stage 2 hypertension , a physician may prescribe diet and lifestyle changes, as well as one or more drugs known as antihypertensive [15,17].

Health seeking behavior is preceded by a decision making process that is further governed by individual and /or household behavior, community norms and expectations as well as provider related characteristics and behavior. Context may be a factor of cognition or awareness, socio-cultural as well as economic factors. The interplay of these factors is central in the final choice of a care seeking option [25-28].

Social and demographic factors, social networks and biological signs and symptoms work synergistically to produce a pattern of health seeking behavior. The determinant models of health seeking behavior include demographic aspects such as the level of education; occupation and income of the head of household, which are critical, particularly in developing countries where these have been explored. To this extent, cost and physical accessibility of services clearly play a role in influencing the observed health-seeking behavior [26-28].

To build a responsive health system, there is a strong need to understand the health seeking behaviors on the demand side. As proper understanding of health seeking behavior will reduce delay to diagnosis, and improve health promotion strategies in a variety of contexts [27].

2.2 Some Empirical Evidence from Other Studies

A household survey in South Africa, found low income, limited social networks, prevented consultation with monthly expenditure for repeated consultations as high as 60% of income were the factor for CNCD treatment [27]. Study in Kelantan, Malaysia; found information from health care workers is a factor for treatment [37]. Similarly, the study conducted in Romania shows that male individuals of over 35 years of age have stated that they do not know what the right weight according to their height is. Overweight and obese men are not aware of their state of health being under the optimal level but the concern for the weight control has risen according to the educational level [29].

Study conducted on 4758 adult participants in Saudi reported gender, urbanization, low education, low physical activity and obesity as significant predictors of hypertension (40). Population based cross sectional survey conducted on 3713 adults in Addis Ababa: About 20% of males and 38% of females were overweight (body-mass-index ≥ 25 kg/m²),

with 10.8 (9.49, 12.11) % of the females being obese (body-mass-index ≥ 30 kg/m²). But reported use of anti-hypertensive medication, was 31.5% (29.0, 33.9) among males and 28.9% (26.8, 30.9) among females [19]. A community based cross-sectional study conducted on 679 in the northern part of Ethiopia shows. Hundred ninety two (28.3%) were hypertensive of whom more than a third (37.0%) did not know they had hypertension [18]. It is higher than the following findings; a national survey on hypertension and related-factors conducted on a total of 10,560 persons in Vietnam were 48.4% aware of their raised blood pressure [39]. Similarly a national Survey conducted on 4758 adult participants in Saudi reported 44.7% of hypertensive was aware of their raised blood pressure [40].

2.3 Health seeking and Socio demographic characteristics

The study conducted in South Africa clearly illustrated differences in socio-economic characteristics, health status and health care utilization. Participants from rural communities had a significantly lower available weekly budget, not only for health care itself, but also for transport to the health care facility [30]. The study of slums in India and Philippines shed light on the dependence of the urban on cash is a key issue of access to health care (30% of the poor women had an unmet need compared with 17% of non-poor women). The poor have great difficulty in comprehending the nature of their illness and understanding their course of treatment [31].

According of Cambodia survey most often the respondents used home remedies as a first step, followed by self-medication; subsequently, people used self-medication or the private sector. Very poor people used the health center more often than better-off as a first and second step [32]. Barriers to access included poverty, limited availability of care and others. Women initially used home remedies, and then sought advice from public and private providers, shifting from one sector to another in a pragmatic response to the child's illness [32]. Also expenditure on the risk factor especially tobacco and alcohol consumption is the other which contributes to household poverty [20].

Health service utilization varies from place to place with number of factors. Some study stated that a person's utilization of health services and acceptance of modern health

services greatly depend on the person's educational level [32]. In developing countries, health seeking behaviors and health care services utilization patterns have been studied and the determinants have been classified in physical, socio-economic, cultural and political contexts. Trends in utilization of a health care system, public or private, formal or non-formal, by and large, vary depending on factors such as age, gender, women's autonomy, urban or rural habitat, economic status, severity of illness, availability of physical infrastructure, type and cadre of health provider, etc. [26].

2.6. Conceptual Framework

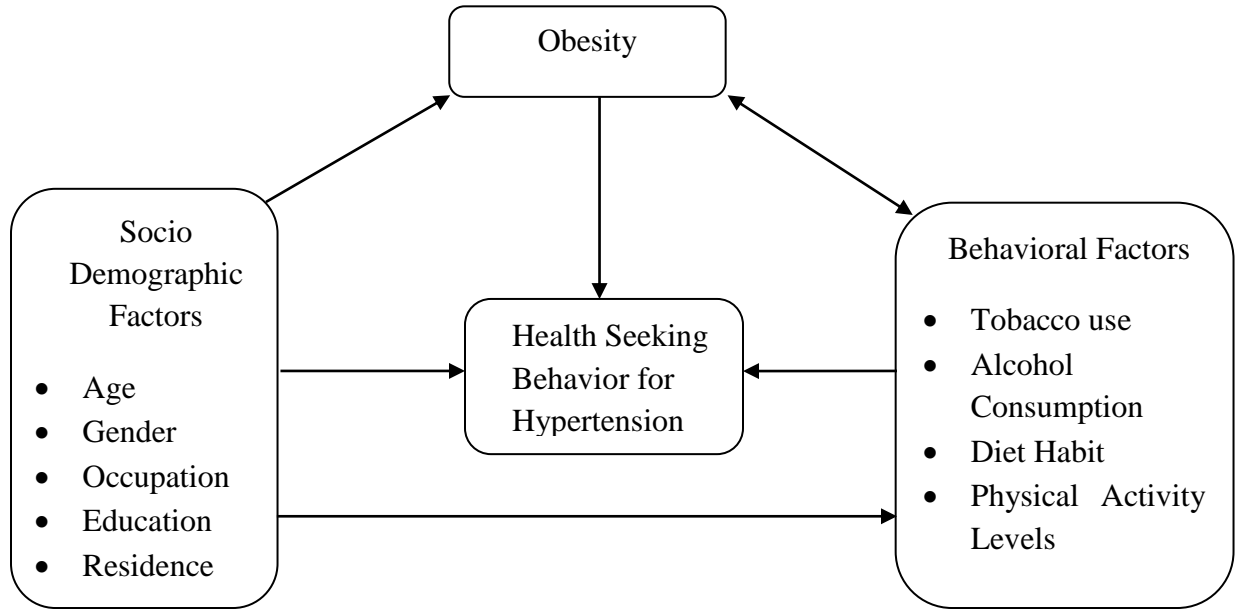


Figure 1: Conceptual model for studying health seeking behavior

CHAPTER THREE - SIGNIFICANCE OF THE STUDY

In order to respond to community perspectives and needs, health systems need to adapt their strategies, taking into account the findings from the population [34]. Designing health care policies and programmes, requires facts about health care seeking behavior. This study attempted to provide overall pictures on the health seeking behavior on hypertension and associated factors among residents of the GGFRC population. It enables program improvement and program development. This contributes for the development of to CNCDs controlling strategies.

CHAPTER FOUR

OBJECTIVES

4.1 General objective

The objective of this study was to assess Health Seeking Behavior and factors associated on hypertension among adult at Gilgel Gibe Field Research Center, Southwest Ethiopia, 2008/2009.

4.2 Specific objective

1. Describe health seeking behavior of adults on hypertension.
2. Identify determinants of health seeking practices for hypertension among adults.

CHAPTER FIVE

METHODS AND MATERIALS

5.1 Study area

Gilgel Gibe Field Research Center is located in Jimma Zone of Oromia regional state about 260 Kilo meter (Km) Southwest of Addis Ababa and about 55 K.m Northeast of Jimma Town around the reservoir of Gilgel Gibe Hydroelectric dam. The site is bounded by four woredas: Sekuru, Omo-Nada, Tiro- Afeta and Kersa. The center serves as health and demographic surveillance system for the University and comprises of 8 rural and two urban kebeles (the lowest administrative unit in Ethiopia) [22, 36].

The GGFRC comprised of about 11,000 households with a total population of 50,000. Out of the total population, age range of 15 to 64 years comprised of about 49% [22, 36].

The population comprised mainly of Muslims (67.5%), followed by Orthodox Christians (13.4%) and Protestant (3.1%). Majorities (87.3%) were Oromo's and the remaining constitutes Yem, Amhara and others by ethnicity. Among the population 7 years and above, more than 54.7% didn't attend any formal schooling. Of those 10 years and above 30.7% were farmers, 21.7% housewives and 25.6% students by occupation and with respect to marital status 49.6% were married and 43.4% were single. Moreover, 79.2% of households had male heads [22, 36].

There were one health center, two health stations and 4 health posts within the center since 2008/2009. There were also two trained health extension workers in each Kebele. In the urban kebeles the source of water was either shallow dug well, pipe water or protected springs whereas the major sources of water in rural kebeles were unprotected. All rural kebeles were accessible only during dry season by four-wheel drive. All the kebeles had access to mobile phone and in addition the urban kebeles had access to home phone [22, 36].

5.2 Study Period

The population-based cross-sectional study was conducted between September 2008 and January 2009.

5.3 Study design

The study design was a population-based cross-sectional survey.

5.4 Population

5.4.1 Source population

The source population for this study was all individuals' aged 15 to 64 years of both sexes, who were residents of urban and rural kebeles of the center.

5.4.2 Study population

Random sample of individuals from the source population were included in the analysis.

5.5 Sampling frame, Sample size determination and Sampling procedures

5.5.1 Sample frame

To select the study participants, the 2008 updated census list of the population and households of the ten kebeles were used as sampling frame.

5.5.2 Sample size determination

The sample size was determined, based on the WHO STEPS guideline stratifying the population by sex, age and residence. Accordingly 250 individuals were taken from each age, sex and residence stratum giving a sample size of 2500. The sample size for step I and II of the survey was 5,500, for further information refer on Ethiop J Health Sci; 2012.Vol 22(Special issue)

5.5.3 Sampling Technique

The sample size was allotted to urban and rural strata proportion to their size in a ratio of 25% to 75%, respectively. Furthermore, equal sample were allotted in to each age, in interval of ten years and sex strata. Individual study subjects were then selected using simple random sampling technique.

5.6 Variables:

5.6.1 Dependent variables

Health seeking behavior on hypertension

5.6.2 Independent variables

- Socio Demographic Variables :- Age, Sex, Educational Status, Occupation,
- Economic Status (Income)
- Residence: Urban and Rural
- Behavioral Risk Factor: Alcohol Consumption, Tobacco Use, Diet Habit, Physical Activity.

5.7 Data collection tools and procedure

Data collectors for survey and physical measurement (blood pressure and anthropometries) were high school completed individuals who were fluent in local languages (Amharic and Afan Oromo) were recruited and trained on how to obtain consent, use equipment and how to perform and record the physical measurements. They were also provided with manuals that cover the standard physical measuring procedures. Recording formats were adapted from WHO guidelines to measure blood pressure [35, 36].

5.7.1 Interviews:

Pre-tested questionnaire was used to determine prevalence of non-communicable disease and their risk factors. The data was collected by trained data collectors with extensive supervisions at various levels and interviewing was done at home level after the interviewer explain the purpose of the survey and ask the participant for his/her consent to participate in the study [35, 36]. The electronic data on age, sex, residence, level of education, occupation, level of education, behavioral risk factors and data on BP measurements and types of treatment sought by diagnosed individual extracted for this study from the main study database.

5.7.2 Physical measurement:

After the interview for CNCDs survey, all selected respondents were given appointment to come to nearby health post, health station, health center, school, Kebele offices or other convenient sites for measurements. It was 2,507 sampled individuals' (1,225 men and 1,241 female) age 15 to 64 years who were selected. The measurement was undertaken according of standard procedures. Format was used to record blood pressure. The equipment used in the study was (sphygmomanometers and scales) standardizing and calibrating was been performed per protocol regularly. Individuals who had elevated blood pressure or having indication of any of the chronic diseases during the survey were referred to the nearest health center or hospital for further investigation and management [35, 36].

5.8 Data quality

Data was extracted based on the study variables and examined again for completeness and consistency. Incompleteness, inconsistency and missing values were assessed. The following cases was excluded from analysis due to missing values: 116 case those who completely missing step, 50 cases that had missing on age and 6 cases missed on both steps. After removing the above cases, the final analysis was based on sample of 4315 adults.

5.9 Data processing and analysis

SPSS -20 (Feature 1200-IBM APSS statistics) was used for data analysis.

Descriptive statistics, such as frequency and percentage were used to summarize the socio-demographic characteristics of the sample population. Multiple logistic regressions were fitted and Odds ratios with 95% confidence intervals were calculated to identify associated factors. The correlation matrix was examined in order to ascertain if multicollinearity existed between variables (residence, age, sex, Occupation, Educational Level, BMI measure). Based on Cohen and Holliday, correlation is considered low (weak) - from 0 to 0.39; moderate 0.4-0.69, and strong 0.7 - 1.0[41]. Fortunately, there is no significant correlations were found.

5.10 Operational and Definition of terms

- **Hypertension/Raised blood pressure:** Is defined as systolic blood pressure of ≥ 140 mmHg and/or diastolic blood pressure of ≥ 90 mmHg, or using medication to lower blood pressure [3].
- **Health Seeking Behavior for hypertension:** Health Seeking Behavior in this thesis refers action undertaken to diagnose hypertension and prevent or postpone its complications by individuals who perceive them to have a health problem or to be ill for the purpose of finding an appropriate remedy or in need of getting to know his/her blood pressure status[4, 24].
- **Unhealthy diet habit:** Consuming less than five total servings (400 grams) of fruit and vegetables per day (3). Serving vegetable: This refers to one cup of raw, green leafy vegetables (example; spinach, salad, etc.), one half cup of other vegetables, cooked or chopped raw (example; tomatoes, carrot, corn, etc.), or a half cup of vegetable juice. Serving fruit: This refers to one medium-sized piece of fruit (banana, orange, etc.) or a half cup of raw, cooked or canned fruit or a half cup of fruit juice (example; Juice from fruit, not artificially flavored)[35].
- **Alcohol consumption:** Those had the past 12 and current (the last 30 days) drinking habit.
- **Physical activity levels:** For the calculation of a categorical indicator, the total time spent in physical activity during a typical week, the numbers of days as well as the intensity of the physical activity are taken into account [38].
 1. **High:** – 7 or more days of any combination of walking, moderate- or vigorous-intensity activities achieving a minimum of at least 3,000 MET-minutes per week.
 2. **Moderate** - 5 or more days of any combination of walking, moderate- or vigorous-intensity activities achieving a minimum of at least 600 MET-minutes per week.
 3. **Low** - A person not meeting any of the above mentioned criteria falls in this category.
- **Cigarette smoking classification criteria :**
 1. Current Smoker – someone who currently smokes one or more manufactured or hand rolled tobacco cigarettes per day.
 2. Never smoked regularly – someone who has never smoked manufactured or hand rolled tobacco cigarettes at all or smoked less than one per day [35].

5.11. Ethical Consideration

Ethical clearance was obtained from the Ethical Review Board of Jimma University, College of Public Health and Medical Science. Then the letter was been presented for Gilgel Gibe Field Research Center (GGFRC) in need of data extraction.

CHAPTER SIX

RESULT

6.1. Socio demographic characteristics of study respondents.

Of the 4315 cases included in the analysis, 51.9% were female and 75.2% were from rural area. Majority of the respondent 43.6% were farmers and 72% of the respondents can't read and write (Table.1).

Table 1 Socio demographic characteristics of household respondents (n=4315), GGFR, 2008 /2009

Soci-demographic variables	Female		Male		Total	
	N ₀ (%)	%	N ₀ (%)	%	N ₀ (%)	%
Age in year						
15-24	369	16.5	359	17.3	728	16.9
25-34	468	20.9	390	18.8	858	19.9
35-44	467	20.8	439	21.2	906	21.0
45-54	436	19.5	419	20.2	855	19.8
55 and above	500	22.3	468	22.6	968	22.4
Total	2240	100.0	2075	100.0	4315	100.0
Residence						
Rural	1653	73.8	1590	76.6	3243	75.2
Urban	587	26.2	485	23.4	1072	24.8
Total	2240	100.0	2075	100.0	4315	100.0
Educational level						
Can' read and write	1845	82.4	1274	61.4	3119	72.3
Read and write only	22	1.0	100	4.8	122	2.8
Grade 1-4	115	5.1	279	13.4	394	9.1
Grade 5-8	145	6.5	248	12.0	393	9.1
Grade 9 and above	113	5.0	174	8.4	287	6.7
Total	2240	100.0	2075	100.0	4315	100.0
Occupation						
Farmer	459	20.6	1423	68.8	1882	43.8
Civil servant	38	1.7	81	3.9	119	2.8
NGO employee	6	0.3	28	1.4	34	0.8
Merchant	78	3.5	131	6.3	209	4.9
Daily laborer	29	1.3	93	4.5	122	2.8
Non– paid worker	13	0.6	14	0.7	27	0.6
Student	106	4.7	128	6.2	234	5.4
Housewife	1394	62.5	0	0.0	1394	32.4
Housemaid	20	0.9	0	0.0	20	0.5
Pensioner	18	0.8	19	0.9	37	0.9
Unemployed	42	1.9	31	1.5	73	1.7
Other	29	1.3	119	5.8	148	3.4
Total	2232	100.0	2067	100.0	4299	100.0

One percent (0.7% men and 1.4% female) were overweight while 0.2% (0.1% men and 0.4% female) were obese. Regarding behavioral factor; 9.3% (18.4% male and 1% female) were current daily smoker (Table 2)

Table 2 Behavioral Background of study participants, GGFRC, 2008/2009.

	Rural		Urban		Total		Total № (%)
	Female № (%)	Male № (%)	Female № (%)	Male № (%)	Female № (%)	Male № (%)	
Daily smoker							
yes	18(1.1)	328(20.6)	4(0.7)	53(10.9)	22(1.0)	381(18.4)	403(9.3)
no	1634(98.9)	1261(79.4)	582(99.3)	432(89.1)	2216(99.0)	1693(81.6)	3909(90.7)
Alcohol Consumption							
No	1630(98.6)	1549(97.4)	508(86.5)	385(79.4)	2138(95.4)	1934(93.2)	4072(94.4)
Yes	23(1.4)	41(2.6)	79(13.5)	100(20.6)	102(4.6)	141(6.8)	243(5.6)
Total serving of fruits and vegetables consumed per day							
Eat < 5	211(12.8)	240(15.1)	58(9.9)	59(12.2)	269(12.0)	299(14.4)	568(13.2)
Eat >= 5	1442(87.2)	1350(84.9)	529(90.1)	426(87.8)	1971(88.0)	1776(85.6)	3747(86.8)
Levels of Physical Activity							
Low Level [‡]	352(21.3)	110(6.9%)	149(25.4)	56(11.5)	501(22.4)	166(8.0%)	667(15.5)
Moderate *	540(32.7)	253(15.9)	196(33.4)	100(20.6)	736(32.9)	353(17.0)	1089(25.2)
High [†]	761(46.0)	1227(77.2)	242(41.2)	329(67.8)	1003(44.8)	1556(75.0)	2559(59.3)
[‡] MET<600/week	*MET 600-3000/week		[†] >=3000 MET /week				

6.2. Health seeking Behaviors and socio demographic characteristics of the respondent.

Out of the 4315 respondents asked about their health seeking behavior on hypertension only 17.5% of the respondent reported to have measurement history (Figure 1) and 7.7 % were measured, but not within the past 12 month (Figure 1). The proportion of those seeks Bp measured in the past 12 month were 9.9% (11.4% female and 8.2% in male) (Table 4). About 17% (18% female and 6% men) of the 9.9% were told they had raised blood pressure by the doctors or other health professionals (Table 3)

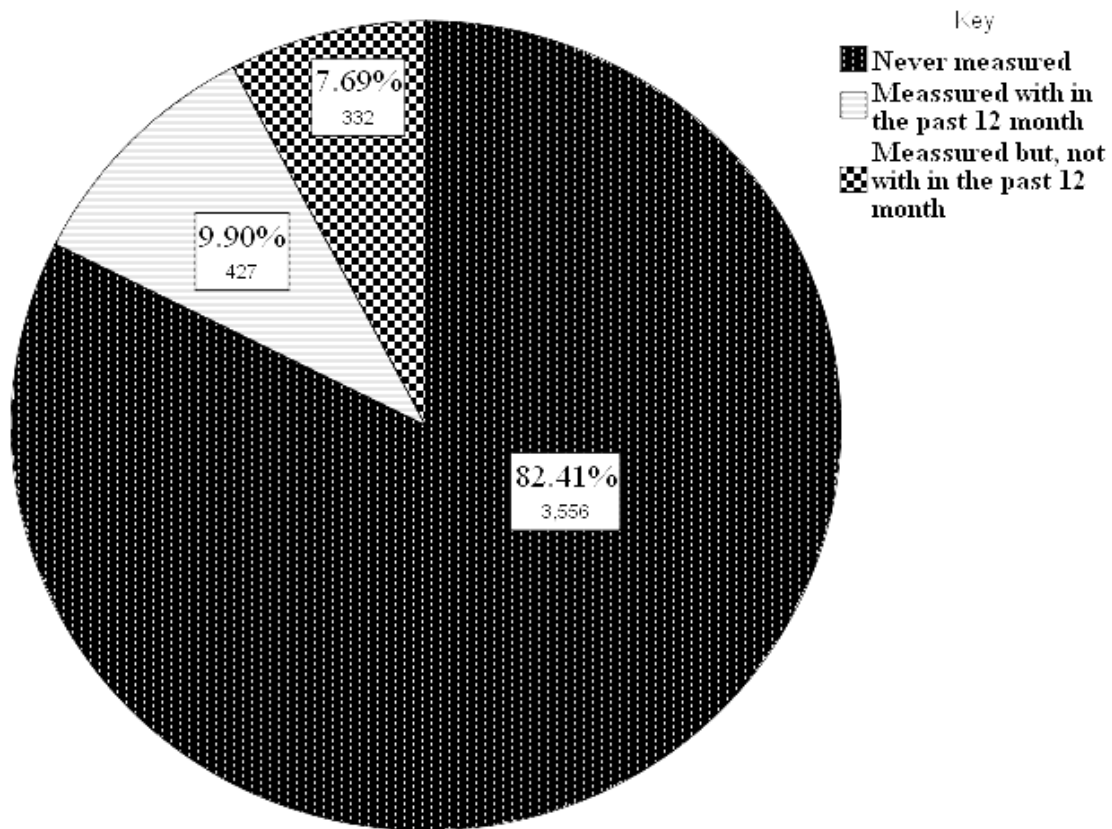


Figure 2 : Blood pressure measurement history of study participants, GGFRFC, 2008/2009.

Table 3 Those measured and diagnosed as hypertension in the past 12 month, distribution by age and sex, GGFRC, 2008/2009.

Age	Rural		Urban		Total		
	Female N (%)	Male N (%)	Female N (%)	Male N (%)	Female N (%)	Male N (%)	Total N (%)
15-24	4(13.8)	0(0.0)	3(7.5)	1(4.5)	7(10.1)	1(2.2)	8(7.0)
25-34	4(13.8)	3(13.0)	5(12.5)	2(9.1)	9(13.0)	5(11.1)	14(12.3)
35-44	5(17.2)	4(17.4)	6(15.0)	4(18.2)	11(15.9)	8(17.8)	19(16.7)
45-54	5(17.2)	9(39.1)	11(27.5)	5(22.7)	16(23.2)	14(31.1)	30(26.3)
55 & above	12(37.9)	7(30.4)	15(37.5)	10(45.5)	26(37.7)	17(37.8)	43(37.7)
Total (%)	30(25)	23(20)	40(35)	22(19)	70(61)	45(39)	115(100)

Of 2507 respondents randomly selected for survey Bp measurements; almost 8 % (7% women and 9% men) were diagnosed as hypertensive. Finally there were 304 respondents (115 from self-reported and 191 by survey measurement) were identified as hypertension among GGFRC respondents. This means all the 191 adults were didn't aware of their raised blood pressure in the past 12 month.

Table 4: Health seeking behavior on hypertension and background characteristics of study participants, GGFRC, 2008/2009.

	Ever seek Bp measured in the past 12 month			
	Yes=427		No=3888	
	N _o	N _o (%)	N _o	N _o (%)
Residence				
Rural	265	8.2	2978	91.8
Urban	162	15.1	910	84.9
Sex				
Female	256	11.4	1984	88.6
Male	171	8.2	1904	91.8
Age				
15-24	57	7.8	671	92.2
25-34	73	8.5	785	91.5
35-44	92	10.2	814	89.8
45-54	97	11.3	758	88.7
55 and above	108	11.2	860	88.8
Educational Level				
Can' read and write	271	8.7	2848	91.3
Grade 1-4	62	12.0	454	88.0
Grade 5-8	45	11.5	348	88.5
Grade 9 and above	49	17.1	238	82.9
Occupation				
Nonpaid Worker/Other	33	6.7	462	93.3
Farmer	128	6.8	1754	93.2
Housewife	185	13.3	1209	86.7
Paid worker	81	14.9	463	85.1
Current smoker				
Yes	34	8.4	369	91.6
No	393	10.1	3516	89.9
Alcohol Consumers				
Yes	33	13.6	210	90.3
No	394	9.7	3678	86.4
Total servings of fruit and vegetables consumed per day				
Eat < 5	46	8.1	522	89.8
Eat >= 5	381	10.2	3366	91.9
Physical Activity Levels				
Low Level £	68	10.2	599	89.8
Moderate *	129	11.8	960	88.2
High †	230	9.0	2329	91.0
BMI measurement				
18.5-25 or Normal	313	10.2	2758	89.8
<18.5 or Under weight	98	8.2	1091	91.8
25-30 or over weight	10	22.2	35	77.8
>30 or obese	6	60.0	4	40.0
£ MET<600/week	*MET 600-3000/week		† >=3000 MET /week	

6.3 Type of Service sought

Of all 113 self-reported hypertensive individual 89 of them were on treatment (Figure 1). Drug (medication), special prescribed diet, advice to lose weight, advice to stop smoking, advice to start or do more exercise, seen traditional healer and take herbal or traditional remedy were the types of service sought by hypertensive individuals. Majority, 54%, of self-diagnosed hypertensive cases sought special prescribed diet or advice or treatment to lose weight followed by 40% advice to start or do more exercise, 38% drug (modern medication), 17% seen a traditional healer and 12% got herbal or traditional remedy. On the other hand, 26(22%) hypertensive individuals didn't take any treatment.

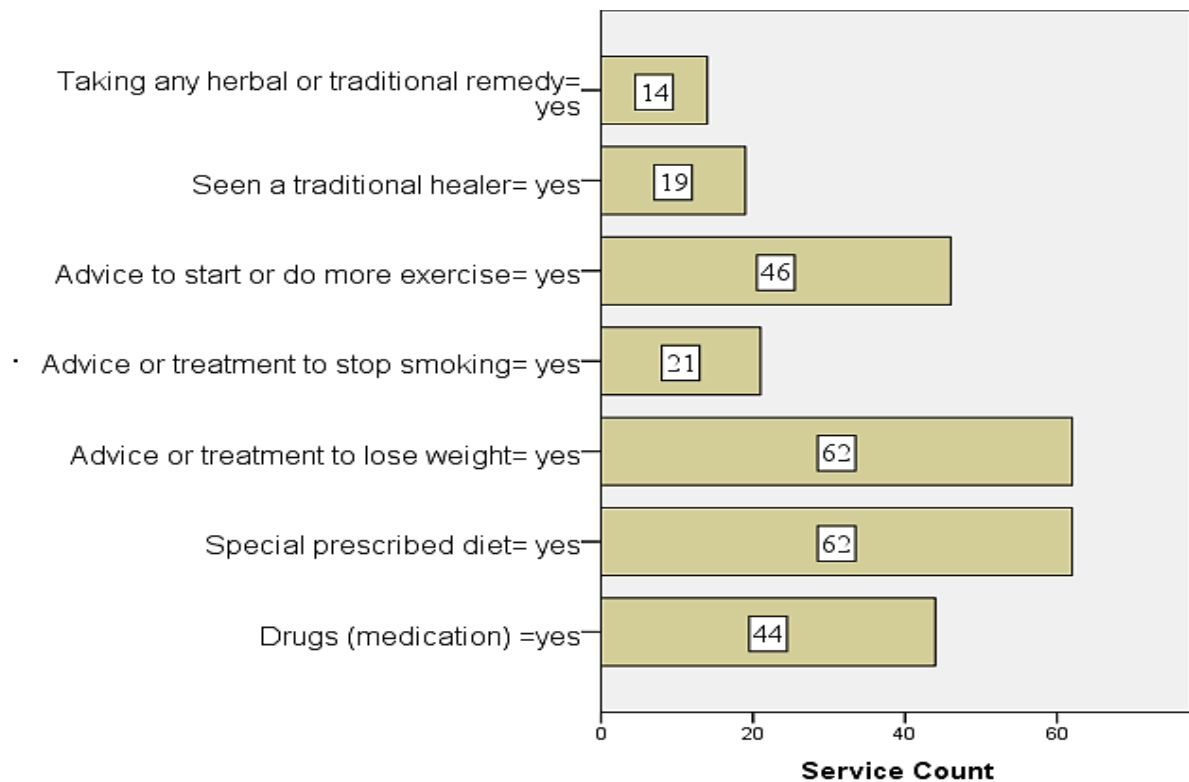


Figure 3 : Total numbers of treatment and advice taken by the 115 self-reported hypertensive cases, GGFRRC, 2008/2009.

6.4 Association of demographic and socio-economic variables with health seeking behavior.

No statistically significant association was observed between seeking Bp measurement in the past 12 month and physical activities level, alcohol consumption, smoking status, daily serving fruit and vegetable consumption. Those which showed significant association with health seeking behavior were age, sex, residence, occupation and educational level (Table 5).

Table 5: Cross tabulation of respondents the past 12 month Bp measurement seeking, GGFR, 2008 /2009.

	Yes=427 № (%)	No=3888 № (%)	Chi-Square Test X ² (p-value)
Residence			
Rural	265(8.2)	2978(91.8)	43.526(p<0.001) ¥
Urban	162(15.1)	910(84.9)	
Sex			
Female	256(11.4)	1984(88.6)	12.275(p<0.001) ¥
Male	171(8.2)	1904(91.8)	
Age			
15-24	57(7.8)	671(92.2)	8.245(p=0.004) £
25-34	73(8.5)	785(91.5)	
35-44	92(10.2)	814(89.8)	
45-54	97(11.3)	758(88.7)	
55 and above	108(11.2)	860(88.8)	
Educational Level			
Can' read and write	271(8.7)	2848(91.3)	18.814(p<0.001) £
Grade 1-4	62(12.0)	454(88.0)	
Grade 5-8	45(11.5)	348(88.5)	
Grade 9 and above	49(17.1)	238(82.9)	
Occupation			
Unpaid Worker	33(6.7)	462(93.3)	59.028(p<0.001) ¥
Farmer	128(6.8)	1754(93.2)	
Housewife	185(13.3)	1209(86.7)	
Paid worker	81(14.9)	463(85.1)	
BMI measurement			
18.5-25/Normal	313(10.2)	2758(89.8)	39.772(p<0.001) ¥
<18.5/under weight	98(8.2)	1091(91.8)	
25-30/over weight	10(22.2)	35(77.8)	
>30 or obese	6(60.0)	4(40.0)	
£ Linear by linear association			¥ Pearson Chi-Square

6.5. Predictors of Health Seeking Behavior

Using logistic regression analyses, residence, occupation, Educational level, Age and BMI was found to be a significant statistical predictor of failing to had Bp measured and diagnosed in the past 12 month, but sex doesn't found as significant statistically (Table 6). Beware that 'did not seeking was coded as 1 or no=1' and 'did seeking was coded as 0 or yes=0'.

Table 6 : Logistic Regression: Predictors for seeking Bp measurement in the past 12 month, GGFRC, 2008 /2009.

	Chi-Square Test of association	AOR
	X ² (p-value)	Odd(95% CI)
Residence		
Rural	43.526(p<0.001) ¥	1.495(1.15,1.93)
Urban †		
Sex		
Female	12.275(p<0.001) ¥	0.924(0.68,1.25)
Male †		
Age		
15-24 †	8.245(p=0.004) £	1
25-34		1.035(0.69,1.54)
35-44		0.806(0.53,1.19)
45-54		0.636(0.43,0.94)
55 and above		0.601(0.40,0.89)
Educational Level		
Can' read and write	18.814(p<0.001) £	2.758(1.79,4.23)
Grade 1-4		1.538(0.97,2.42)
Grade 5-8		1.543(0.981,2.43)
Grade 9 & > †		1
Occupation		
Unpaid Worker	59.028(p<0.001) ¥	1.833(1.154,2.91)
Farmer		1.192(0.81,1.74)
Housewife		0.617(0.41,0.92)
Paid worker †		1
BMI measurement		
18.5-25/Normal	39.772(p<0.001) ¥	8.372(2.29,30.54)
<18.5/under weight		9.007(2.43,33.34)
25-30/over weight		4.806(1.1,20.81)
>30 or obese †		1

CHAPTER SEVEN

7.1 Discussion

To build a responsive health system, there is a strong need to understand the health seeking behaviors on the demand side. Household surveys are the most common method of studying the health seeking behavior, generally under the names of, treatment (care) seeking behavior or health-seeking behavior. Very few studies are national in their geographic or demographic focus, most are concentrated in villages and districts [32].

The finding of this study shows that; except 427 (9.9%) majority (90. %) of adults in the study didn't seek Bp measurement in the past 12 month; consequently 67% of total hypertensive cases didn't aware of their raised blood pressure. The result of this study is lower than studies conducted in Vietnam 48.4% were aware of their raised blood pressure[39] , so do in Saudi 44.7% were aware of their raised blood pressure [40], and in Gondar, Northwest Ethiopia, 63.0% were aware of their raised blood pressure [18]. On the other hand, it is higher than a community-based survey conducted in Angola among the total hypertensive cases 21.6% were those aware of their raised blood pressure [23].

These variations might be due to socio-economic and cultural factors; such as age, gender, women's autonomy, urban or rural residence, cognition or awareness, availability of physical infrastructure, etc. [25-28, and 37]. A household survey in South Africa, found low income, limited social networks, prevented consultation with monthly expenditure for repeated consultations as high as 60% of income were the factor for CNCD treatment [27].

Rural residents have more chance of not seeking health for hypertension in the past 12 month than Urban; 92% of rural and 85% of urban were those didn't evaluate their Bp measurement in the past 12 month. This finding is consistent with findings of study conducted in South Africa which clearly illustrated Participants from rural communities had a significantly lower available weekly budget, not only for health care itself, but also for transport to the health care facility [30]. Similarly study of slums in India and Philippines shed light on the dependence of the urban on cash is a key issue for poor in lack to access to health care (30% of the poor women had an unmet need compared with

17% of non-poor women). The poor have great difficulty in comprehending the nature of their illness and understanding their course of treatment [31].

This study revealed that failing to seek health for hypertension was correlated with educational level. The chance of not to seek health for hypertension was 3 times higher among an uneducated respondents as compared with grade 9 and above completed respondents. It was only 9% of uneducated respondents who seek Bp measurement in the past 12 month while it was 17% among those had completed grade 9 and above. It supports what stated in Cambodia health seeking study; which stated that a person's utilization of health services and acceptance of modern health services greatly depend on the person's educational level [32]. Similarly study in Kelantan, Malaysia; which found information from health care workers is a factor for treatment [37].

Occupation is another variable identified as a factor in seeking health for hypertension. Being an unpaid worker has almost two times higher chance of not to evaluate blood pressure as compared with professional (paid worker). Being housewife has 0.62 times lesser chance of not seeking health for hypertension as compared to professional (paid worker), which means housewife has a higher chance of seeking health for hypertension. The study shows that 15% of paid worker, 13% of housewife & 7% of unpaid worker were among those gates their Bp measurement in the past 12 month. It was contrary to what was stated in other study, women initially used home remedies, and then sought advice from public and private providers, shifting from one sector to another [32].

In addition to the above predictors, BMI and age of respondents were also found as determinants of seeking health on hypertension among the adults. Being underweight (BMI < 18.5) has 8 times higher chance for not to evaluate BP status than when compared with obese individual. Also it was nearly equivalent that; the chance of failing to seek Bp measurements was 9 times higher among normal BMI (18.5-25) respondents relative to those obese individual. The relative chance of getting those who didn't measure their blood pressure was also higher among overweight and it was 4.806 times higher than obese. It is contrary to the study conducted in Romania that showed overweight and obese men were not aware of their state of health being under the optimal level but the concern for the weight control has risen according to the educational level [29].

The study also revealed a negative association between age and failing to seek health for hypertension. According of the result; as age of the respondent increase the need of Bp measurement becomes increase. Almost equal that; 11% of 45-54 years and 55 and above years of age groups were seeking Bp measurement in the past 12 month while it was 9% in 15-24 years age group. This research concurs with Morrison; which show that as people aged, the type of diseases change from cold, diarrhea and asthma to CNCD [42, 43]. Similarly this study revealed that aged people have a greater degree of reporting illness, and demanding of care.

7.1 Strength and Limitation of the study

Having it as a survey being conducted at household level was among the facts which make the study was great.

To list some of its limitation;

- Data were not collected in sequential order, and there was a big missing on household income.
- As being a cross-sectional survey and causality cannot be inferred, so do this study.
- The study is limited by being house hold and therefore nothing was determined on factors related with health facility. These indicate a need for further study on health care utilization and treatment adherence in controlling the raised blood pressure.

CHAPTER EIGHT

CONCLUSION AND RECOMMENDATION

8.1 Conclusion

The proportion of those evaluated their blood pressure in the past 12 months were 9.9% (11.4% female and 8.2% male). Totally 304 (2.6 % from self-report and majority 4.4 % from survey measurement) were identified as hypertensive cases. This shows that higher proportions of respondents never measured their Bp in the past 12 months as a result they were been in living with their raised pressure as if they are healthy. It indicates majority of the community were poor in seeking health for hypertension.

The study revealed that socio demographic and socio economic characteristics were the most significant predictors of seeking health for hypertension among GGFRC adults. These included age, place of residence, occupation, educational level, and BMI as determinants of seeking health on hypertension among adults. The study also showed no statistically significant association between behavioral factors (cigarette smoking, alcohol consumption, physical activity levels, and daily consumption of servings of fruit and vegetables) and health seeking for hypertension.

8.2 Recommendation

This study recommends that health professionals should give context-specific health education and awareness creation on early diagnosis and treatment of hypertension via BCC and IEC materials; especially for those whose BMI is less than 25.

Recommendations are also for infrastructure investments in rural communities, improvement of household socio-economic status and further research on the provider side plus treatment adherences in controlling the raised Bp among hypertensive individuals.

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ANNEX -1

Data were extracted on the follows survey variables.

I. Identification

Family individual Number _____

Family id Number _____

II. Demographic information

Demographic Information		Response	Code
201	Sex (Record Male/Female as observed)	Female Male	
202	How old are you (years)	_____ do not know _____	
	If you don't know/don't want to tell me your age could you tell me the age range if I read the different options to you	15-24 25-34 35-44 45-54 55-64 64 ⁺	
203	What is the highest level of education you have completed?	No formal schooling Less than primary school Primary school completed Secondary school completed College /University completed Post graduate degree Refused	
204	Which of the following best describes your main work status over the last 12 months?	Government employee Non-government employee Merchant Daily laborer Non – paid worker Students Housewife Housemaid Retired Unemployed Refused	
205	How many people older than 15 years, including yourself, live in your household?	Number of people _____	

206	Taking the past year, can you tell me what the average earnings of the household have been (in birr)?	Per month _____ OR per year _____ Refused	
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III. Risk factors

Tobacco use

Now in am going to ask you some questions about various health behaviors. This includes things like smoking, drinking alcohol, eating fruits and vegetables and physical activity. Let's start with tobacco.

Questions		Response	Code
301	Do you currently smoke any tobacco products, such as cigarettes, cigars or Shisha?	Yes No If No, go to 306	
302	If Yes, do you currently smoke tobacco products daily?	Yes No If No, go to 306	
303	How old were you when you first started smoking daily?	Age (years) _____ Don't remember _____ If known, go to 306	
304	If you don't remember, Do you remember how long ago it was?	In Years _____ If known, go to 306	
		OR in months _____ If known, go to 306	
		OR in Weeks _____	
305	On average, how many of the following do you smoke each day?	Manufactured cigarethes _____	
		Hand –rolled cigarettes _____	
		Shisha full of tobacco _____	
		Cigars _____	
		Other (specify) _____	
306	In the past, did you ever smoke daily?	Yes No If No, go to 315	
307	If yes, how old were you when you stopped smoking daily?	Age (years) _____ Don't remember _____	
308	If you don't remember How long ago did you stop smoking daily?	Years ago _____	
		Or Mothers ago _____	
		OR Weeks ago _____	

Alcohol Consumption

The next questions ask about the consumption of alcohol.

	Questions	Response	Code
309	Have you consumed alcohol (such as beer, wine, Tella, Tej, Katikala)	Yes No If No, go to 315	
310	In the past 12 months, how frequently have you had at least one drink?	Daily 5-6 days per week 1-4 days per week 1 –3 days per month Less than once a month	
311	When you drink alcohol, on average, how many drinks do you have during one day (show the standard measuring unit and)	Number _____ Don't know _____	
312	Have you consumed alcohol (such as beer, wine, Tella, Tej, Katikala) within the Past 30 days?	Yes No if No, go to 314	
313	During each of the past 7 days, how many standard drinks of any alcoholic drink did you have each day?	Monday _____	
		Tuesday _____	
		Wednesday _____	
		Thursday _____	
		Friday _____	
		Saturday _____	
		Sunday _____	
314	In the past 12 months what was the largest number of drinks you had on a single occasion, counting all types of standard together?	Largest number _____	

Diet habit

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.

Questions		Response	Code
315	In the typical week, on how many days do you eat fruit (defined during interview)?	Number of days ____ If zero day's go to 317 Don't know _____	
316	How many servings of fruit do you eat on one of those days?	Number of servings _____ Don't know _____	
317	In a typical week, on how many days do you eat vegetables?	Number of days ____ If zero day's go to 319 Don't know _____	
318	How many servings of vegetables do you eat on one of those days?	Number of servings _____ Don't know _____	
319	What type of oil fat is most often used for meal preparation in your household?	Vegetable oil Butter or ghee Other (specify) _____ None in particular None used Don't know	

Physical Activity

Next I am going to ask about the time you spend doing different types of physical week. Please answer these questions even if you do not consider yourself to be a physical 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 are activities that require hard physical effort and cause large increases in breathing or heart rate, 'moderate – intensity activities' are activities that require moderated physical effort and cause small increases in breathing or heart rate.

Questions		Response	Code
Activity at work			
320	Does your work involve vigorous – intensity activity that causes large increases in breathing or hart rate like for at least 10 minutes continuously?	Yes No If no, go to 323	

321	In a typical week, on how many days do you do vigorous intensity activities as part of your work?	Number of day's _____	
322	How much time do you spend doing vigorous – intensity activities at work on typical day?	Hours: _ _ _ . _ _ _ hrs minutes mins	
323	Does your work involve moderate – intensity activity, that causes small increases in breathing or heart rate such as brisk walking for carrying light loads]for least 10 minutes continuously?	Yes No If no, go to 326	
324	In a typical week, on how many days do you do moderate intensity activities as part of your work?	Number of day's _____	
325	How much time do you spend doing moderate – intensity activities at typical day?	Hours: _ _ _ . _ _ _ hrs minutes	
326	Do you walk for at least 10 minutes continuously to get to and from places?	Yes No If no, go to 329	
327	In a typical week, on how many days do you walk for at least 10 minutes continually to get to and from places?	Number of day's _____	
328	How much time do you spend walking or bicycling for travel on a typical day?	Hours: _ _ _ . _ _ _ hrs minutes	

Recreational activities

The next questions exclude the work and transport activities that you have already mentioned. Now I would like to ask you about sports, fitness and recreational activities (leisure).

329	Do you do any vigorous – intensity sports, fitness or recreational (leisure) activities that cause large increases in breathing or heart rate like [running of football,]for at least 10 minutes continuously?	Yes No If no, go to 332	
330	In a typical week, on how many days do you do vigorous intensity sports, fitness or recreational (leisure) activities?	Number of day's _____	
331	How much time doing vigorous – intensity sports, fitness or recreational activities on a typical day?	Hours: _ _ _ . _ _ _ hrs minutes	

332	Do you do any moderate-intensity sports, fitness or a recreational (leisure) activity that causes a small increase in breathing or heart rate for at least 10 minutes continuously?	Yes No If No, go to 335	
333	In a typical week, on how many days so you do moderate-intensity sports, fitness or recreational (leisure) activities?	Number of days _____	
334	How much time do you spend doing moderate-intensity sports, fitness or recreational (leisure) activities on a typical day?	Hours: __ __ . __ __ hrs minutes	
<i>Sedentary behaviors</i>			
335	How much time do you usually spend sitting or reclining on a typical day?	Hours: __ __ . __ __ hrs minutes	

IV. Chronic diseases

Raised Blood pressure

Now I would like to ask you question history of hypertension, treatment or medical care that you may have received.

Questions		Response	Code
350	Have you ever checked your blood pressure in the past?	Yes No	
351	When was your blood pressure last measured by a health professional?	Within past 12 months 1-5 years ago Not within past 5 years	
352	During the past 12 months have you been told by doctor or other health worker that you have raised blood pressure or hypertension?	Yes No	
353	Are you currently receiving any of the following treatments for raised blood pressure prescribed by a doctor or other health worker as well as any advice?		
353dr	Drugs (medication) that you have taken in the last 2 weeks	Yes No	
353fd	Special prescribed diet	Yes No	
353wtl	Advice or treatment to lose weight	Yes No	
353cig	Advice or treatment to stop smoking	Yes No	
353ex	Advice to start or do more exercise	Yes No	
354	During the past 12 months have you seen a traditional healer for raised blood pressure or hypertension	Yes No	
355	Are you currently taking any herbal or traditional remedy for your raised blood pressure?	Yes No	

ANNEX- 2

Physical measurement recording form used by the survey

V. Weight and Height measurement recording form

501	Participant's identification code	_ _ _ _ _ _ _ _ _
502	Person measuring weight and height (identification code)	_ _
503	Weight (kg)	_ _ _ _ _ _ _
504	Height (cm)	_ _ _ _ _ _ _

VI. Blood Pressure measurement recording form

601	Participant's identification code		_ _ _ _ _ _ _ _ _	
608	Measurement	Time of day (hh:mm)	Systolic (mmHg)	Diastolic (mmHg)
	1st			
	2nd			
	3rd			