WOLKITE UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCIENCES

DEPARTMENT OF PUBLIC HEALTH

MAGNITUDE OF METABOLIC SYNDROME AND ITS ASSOCIATED FACTORS AMONG ADULTS SEEKING CARE AT KIBET PRIMARY HOSPITAL, SOUTH ETHIOPIA

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MASTER OF PUBLIC HEALTH (IN PUBLIC HEALTH NUTRITION) THESIS

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Examiners' approval sheet

We, the undersigned, members of the Board of Examiners of the final open defense by _____(Chairperson) have read and evaluated his/her thesis entitled “Magnitude of metabolic syndrome and its associated factors among adults seeking care at Kibet primary hospital, Southern Ethiopia”, and examined the candidate. This is, therefore, to certify that the thesis has been accepted in partial fulfillment of the requirements for the degree.

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Final approval and acceptance of the thesis is contingent upon the submission of the final copy of the thesis to the School of Graduate Studies (SGS) through the Department/School Graduate Committee (DGC/SGC) of the candidate’s department.

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Declaration

I hereby declare that this MPH thesis is my original work and has not been presented for a degree in any other university, and all sources of material used for this thesis have been duly acknowledged.

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LIST OF ABBREVIATIONS AND ACRONYMS

ASCDR	Age standardized Crude death rate
ASCVD	Atherosclerosis Cardiovascular Disease
BMI	Body mass index
CDR	Crude death rate
CVD	Cardiovascular diseases
DALY	Disable adjusted life year
T2DM	Type tow diabetes mellitus
HDL-C	High density lipoprotein cholesterol
HTN	Hypertension
IDF	International diabetic federation
LDL-C	Low density lipoprotein cholesterol
Mets	Metabolic syndrome
MPH	Master of public health
NCD	Non communicable diseases
NCEPATP III panel	National cholesterol education program's adult treatment
OPD	Outpatient department
WHO	World health Organization

Abstract

Background: Metabolic syndrome (Mets) is a cluster of cardiovascular risk factors secondary to an inflammatory and insulin resistance state that increases the risk of cardiovascular disease and type 2 diabetes mellitus in adulthood. Cardiovascular diseases, malignant neoplasms and type tow diabetic mellitus were the most common causes of mortality and disability. However, there is limited studies on it despite an increasing Metabolic syndrome related morbidity and mortality. This study used the definition of Mets was according to (NECP/APT) III criteria.

Objective: to assess the magnitude and factors associated with Mets among adult seeking care at Kibet primary hospital, Southern Ethiopia, April to May 2021.

Method: An institution based cross sectional study was conducted on 351 participants using a systematic random sampling technique. The data was collected using structured questionnaire and biochemistry indices. Bivariable and multivariable logistic regression analyses were used to determine an association between each independent and dependent variables. Odd ratio with their 95% confidence intervals was computed to ascertain the existence and strength of an association, and statistical significance was affirmed at a *p*-value of < 0.05.

Results: In this study, a total of 351 respondents were completed the interview successfully making the response rate of 97.2%. The observed magnitude of Mets was observed to be 18.5% according to (NCEPATP III). Individual with BMI ≥25 kg/m^2 (AOR=4.1; 95% CI=3.13-11.51), having a sedentary behavior ≥8 hours per day (AOR=3.76; 95% CI =1.38-10.25), serving vegetables or fruit ≥ 3 times per day (AOR=0.52; 95% CI=0.27-1.12), involving physical activity (AOR=0.41; 95% CI: 0.20-0.80) and consuming alcohol 5–6 days per week (AOR=2.9; 95% CI: 1.11-7.55) were significantly associated with Mets..

Conclusion: Generally, a higher proportion of an adult population had experienced Mets in the study area. Individual with BMI ≥25 kg/m^{2,} having sedentary behavior ≥8 hours per day, consuming alcohol 5–6 days per week were associated factors of Mets. On the other hand, serving vegetables and fruit ≥ 3 times per day, and having physical activity were preventive factors of Mets. The stakeholders should give an emphasis for the prevention of the identified risk factors of Mets

Key words: Magnitude, Metabolic syndrome, associated factors, Adults, Hospital

1. Introduction

1.1. Back ground

The metabolic syndrome (Mets) is a cluster of the most dangerous heart attack risk factors that increases the risk of cardiovascular disease and type 2 diabetes mellitus in adulthood (1). The risk factors include raised blood pressure, dyslipidemia (raised triglycerides and lowered high-density lipoprotein cholesterol), raised fasting glucose, and central obesity (2). Various diagnostic criteria have been proposed by different organizations over the past decade (3). Metabolic syndrome can be defined as according to definition of World Health Organization (WHO); insulin resistance, identified by one of the following either type 2 diabetes, impaired fasting glucose or impaired glucose tolerance and/Plus any tow of the following; blood pressure ≥140/≥90 mmHg, plasma triglycerides ≥1.7 mmol/l, HDL cholesterol <0.9 mmol/l in men, <1.0 mmol/l in women, BMI >30kg/m2 and/or waist to hip ratio >0.9 in men and >0.85 in women (3). National Cholesterol Education Program Adult Treatment Panel III (NCEP/ATP III); states the Mets that from the following five syndromes at least three of them are enough to be diagnosed Mets; abdominal obesity given as waist circumference for men >102 cm and for women >88 cm, triglycerides ≥1.7 mmol/l (≥150 mg/dl), HDL men <1.04 mmol/l (<40 mg/dl), women <1.30-mmol/l (<50 mg/dl), blood pressure ≥130/85 mmHg, fast blood glucose >6.1 mmol/l (>100 mg/dl) (4). And also International diabetes Federation (IDF) defined as; Central obesity (waist circumference; ≥94 cm for male and ≥80 cm for female) is mandatory plus two of the four following syndromes; fasting blood glucose > 100 mg/dl or patient receiving medicine for hyperglycemia, raised blood pressure ≥ 130/85 mm Hg or receiving antihypertensive medicines, raised blood triglycerides ≥ 150 mg/dl or receiving medication for hyper-triglycerides and reduced HDL-C < 40 mg/dl or <50 mg/dl in men and women respectively or receiving treatment for reduced HDL-C (4). Since, the study participants were among the whole of adult seeking care,

I have selected the NECP/ATP criteria to define Mets. It is more important to prevent Mets, because of the NECP/ATP criteria none of them was mandatory component.

Non-communicable diseases (NCDs) were the leading causes of death globally, killing more people each year than all other causes combined (5). Nearly 85% of the global premature deaths associated with NCDs occur in low- and middle-income countries (5). Mets greatly raises the risk of developing non-communicable diseases especially CVD, T2DM, stroke, cancer and nonalcoholic fatty liver diseases and are now a day the world's biggest killers (6).

There were potential factors related to Mets. Those were older age, overweight, sedentary life style, physically inactive, misused of alcohol, were associated with a higher prevalence of Mets (4). Dietary patterns like shift towards energy-dense diets, which are characterized by highly processed foods, high in refined starches, sugar, fats, and salt, accompanied by an insufficient intake of fruits and vegetables, whole grains, pulses, nuts and seeds (6).

Recently, in Ethiopia some initiatives under taken to prevent Mets components. Which were in general NCDs preventive and treatment aspects.

Moreover, Ethiopia has weak health system to control consequences of this disorders CVDs, cancer, and others NCDs. As its diagnosis and treatment is too expensive, more focus should be given to the risk factors Mets components. Hence, this study is supportive to the implementation of strategies of modify able risk factors which were potentially associated with Mets.

1.2. Statement of the problem

Metabolic syndrome (Mets) is becoming a global epidemiological challenge because of increasing prevalence of obesity and sedentary life styles (7). Globally, it was estimated that around 20–25% adult population has Mets (8). Associated with a 5-folds and 2-3 folds increase in type 2 diabetes and cardiovascular disease (CVD) respectively and they were twice as likely to die from compared with people without Mets (9). Patients with metabolic syndrome had a higher risk of cardiovascular events and death compared (10). The incidence of Mets often parallels the incidence of obesity, CVDs and of type 2 diabetes (11). Worldwide obesity has nearly tripled since 1975 (11) .

In Ethiopia according to 2016 NCD, caused an estimated to contributed to 39.3% of the total death (12), and the analysis of the economic burden of NCDs in 2017 resulted in an estimate of a total economic loss to 31.3 billion birr per year, equivalent to 1.84% of the country's GDP in 2017 (13).

The magnitude of Mets was associated with dietary patterns, mono saturated fatty acids and vitamins and trace elements were association with Mets (14). Development of Mets consumed more dietary lipids risk of Mets (14). In addition it was associated with age, sex, educational status, wealth index, intake of dietary pattern, physical activities, sedentary life style, alcohol drinking (15) and also smoking, chewing status, overweight were potential factors at adulthood (16).

To alleviate the burden of metabolic disorder, globally studies conducted at different settings but most of them carried out in developed countries. Globally, WHO has proposed that, global action plan on physical activity 2018–2030, set a target to reduce physical inactivity by 15% by 2030, and outlined 20 recommended policy actions and interventions, but uptake of the guidelines was not evaluated (17).

Though the pooled magnitude of metabolic syndrome in Ethiopia was found to be 34.89% (18), few hospital based studies were carried out to assess Mets. In addition, the majority of studies were from referral hospitals [(19),(20),(21)] and cities [(22),(23)]. In Ethiopia also some initiatives like periodic car-free days in Addis Ababa and other cities like activities to promote walking and cycling by constructing sidewalks, Public condominiums, (13). According to dietary habits, there were salt iodization initiatives, currently Policies and programs on food and Nutrition (24). In case of tobacco control system was stronger signed into law at 2019. And screening and treatment for hypertension and diabetes has been introduced in a number of primary health care facilities were the some initiatives. However, lack open spaces for walking, cycling and there was no standard brief intervention for physical activity in the health system, neither salt reduction strategy was in place nor front-of-pack labeling to reduce salt consumption . Likewise, there were no policies eliminating trans-fats in the food chained and reducing population intake of saturated fats.

Based on we had reviewed possible available articles there were little studies on metabolic syndrome in Ethiopia. Whereas, available evidence suggested an increasing prevalence of Mets among adult populations in Ethiopia but the existing disease prevention strategies were not addressing Mets in accessible way. Therefore, the aim of this study was to assess those metabolic syndrome risks and preventive factors in seeking care of adults used to reduce the incidence and magnitude of Mets by those concerned bodies like local government, kibet hospital, others health institutions and community at whole by paying improvement of life style change, prevent and management of the metabolic syndrome. As a final point, metabolic syndrome and NCDs would become consideration of health system and multi sectorial approach way.

1.3. Significance of the study

Information on the magnitude of metabolic syndrome and associated factors were limited in Ethiopia, particularly at study area.

This study is expected to provide data on the magnitude and associated factor of Mets was basic in educating the public and promoting healthy lifestyles and awareness about its associated factors. As a baseline data for planning and designing strategies and interventions for Kibet hospital, relative hospitals, woreda health office, Siltie Zone health department to improve the modifiable underlying risk factors like obese, physical inactive, unhealthy diet through life style changes in health institutions and in the Community.

In addition, it would also provide important information for local nongovernmental organization working in the area on improving modifiable risk factors.

The findings also provide relevant information for those who were interested in carrying out further research studies.

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2. Literature review

2.1. Magnitude of metabolic syndrome

Hospital based study conducted in Italy which showed that the magnitude of Mets was diagnosed 33.0% in outpatients (25). In USA study conducted on Epidemiology of Mets was 35% and 39% according to ATP and IDF criteria respectively (26). In addition, 2017 study conducted at primary health settings in Qatar, the magnitude of Mets was 48.8% (27). Based on available evidence sex of the adults is linked to magnitude of Mets and showed that sex proportion in male the highest and the lowest magnitude rate was 66.2% (28), 6% (16)respectively and in females the highest and the lowest prevalence rate was 57.8%(28), 3.1% (29) respectively in general population.

Health facility based studies conducted in Africa showed that the magnitude was the highest rate was found 55%, which was conducted at Egypt (30) and the lowest prevalence was 7.8 %,which conducted on attending university medical clinics for medical checkup in Khartoum(31). In South Africa showed that the magnitude of metabolic syndrome was 21.8% (32).

Even if there were little studies conducted in Ethiopia, which was conducted in 2017 among adult outpatients, the prevalence of Met was 20.3% (20). A cross-sectional hospital-based study showed that among 381 adults patient 26% were found to have metabolic syndrome(21). A systematic reviewed on 28 cross sectional studies, the pooled magnitude of metabolic syndrome in Ethiopia was found to be 34.89% (95%, CI: 26.77-43.01) and 27.92% (95%, CI: 21.32-34.51) by using NCEP/ATPIII and IDF criteria, respectively and sub group analysis based on the study subjects using NCEP/ATPIII showed that the weighted pooled prevalence was 63.78% (95% CI: 56.17, 71.40), 44.55% (95% CI: 30.71, 52.38) among type 2 diabetes patients, hypertensive respectively(33).

2.2 Associated Risk factors

According to some available evidences the risk factors of metabolic syndrome was as follow.

2.2.1. Socio demographic risk factor

The study conducted in Iran showed, that Strong associations were found, the magnitude of Mets was higher in older age (AOR= 95% CI) (34), a cohort study conducted in Poland after adjustment for age, OR =2.16 (95% CI 1.02–4.78; p =0.04) (35). In Nigeria, result has also been reported, that the prevalence of Mets increased from 11% among participants aged 20 through 29 years to 89% in participants aged 70 through 79 (36). And also in Ethiopia, it was conducted at Jimma University Teaching hospital among outpatients, Mets in adults aged 40 years and above had a 2.6 (AOR: 2.545, 95% CI: 1.201–5.392) times higher risk of developing compared to under 40 years (21).

Mets magnitude also link to sex difference, in Sudan the Mtes to be increased in females than males (31). But in another studies the result was inversely, in China 2017 being male is the risk factors of to develop Mets AOR 1.51 (95% CI 1.34–1.70) (37).

The magnitude of Mets was directly associated with Educational status. Study in China, at 2017, showed that the prevalence of Mets was higher in education with primary school or below level was 44%; (95% CI 1.13–1.84 higher than general population (37). And also in Brazil also expressed as higher prevalence of Mets was observed in lower educational level of individuals (38).

According to wealth index and Employment status of individuals, evidences showed that when wealth index of individuals increases more likely had higher Mets (39). In Ethiopia in 2020 Disease burden and associated risk factors for metabolic syndrome among adults in Ethiopia showed that, the high magnitude of Mets was in higher wealth index, (OR 3.31; 95% CI 1.11–9.84 (39).

In Sudan, verdict showed that the prevalence of Mets was higher in urban than in rural areas (31). Similarly in Ethiopia, showed that urban dwellers of Northern Ethiopia and significantly higher prevalence of Mets (82.8%) compared to rural inhabitants (17.2%), p = 0.003 (21).

2.2.2. Dietary factors

Based on available studies showed the dietary pattern was directly associated with prevalence of Mets. In Korean, analysis showed that carbohydrate consumption, along with protein and vitamin B-2, were significantly higher in the patients with metabolic syndrome (40).

In Ethiopia, at Ayder Comprehensive Specialized Hospital was conducted, the findings showed that less fruit intake [AOR 1.83 (1.05, 3.36)], eating vegetable and fruits once, twice, and four and above times in a typical week [AOR (95% CI) 0.41 (0.21-0.78), 0.35 (0.16-0.76), and 0.24 (0.07, 0.75) (19). In other way, which was conducted in Hawassa city, frequent consumption of sweets, meat and eggs were associated with overweight/obesity (41), Mets prevalence was significantly lower among those who reported consuming five or more servings of fruits and vegetables (P=0.04; 95% CI=0.01–0.27) (42).

2.2.3. Behavioral factors

Some studies point out that the prevalence of Mets was higher in physically inactive individual than physically active ones. In Poland leisure-time physical activity reduced the chances of developing Mets (OR 0.98; 95% CI 0.96–0.99 ;p 0.022) (35), and increased prevalence of Mets and related risk factor due to lack of physical activity (43). Consequences harmful use of alcohol was directly associated with development of Mets, which accompanied in china, that harmful use of alcohol more likely to develop Mets, OR 1.50 (95% CI 1.14–1.99) (37). Research in China high prevalence rate of Mets in smoking individuals (43) and in Poland after adjustment for cigarette smoking (OR 2.09; 95% CI 1.02–4.76; p=0.04) (35).

According to evidence offered in Ethiopia, showed that, Mets was high in physically inactivity (19), likewise, study conducted on among Working Adults in Eastern Ethiopia, those had Sedentary behavior ≥8 hours per day (AOR=2.29) higher risk of developing Mets than those had Sedentary behavior <8 hours per day (42). Likewise, higher levels of physical activity were inversely associated with abdominal obesity and elevated triglycerides. The odd ratio of Mets comparing those with high vs. low levels of physical activity was 0.56 (95% CI = 0.33–0.97) (44). In Hawassa city, Southern Ethiopia daily intake of alcohol more like high prevalence of Mets (41). At Eastern Ethiopia, indicated

that daily alcohol consumers (APR=1.57; 95% CI=1.16–2.13) and khat chewers (APR=1.30; 95% CI=1.06–1.60), (42) those had the chance of developing Mets.

2.2.4. Biological risk factors

Studies displayed that, having excess mass index by any aspects had chance to develop Mets in both sexes (17). Study in Iran on adults compared to normal and underweight , overweight OR 2.32 (1.54–3.47) and obese 4.0 (2.68–6.1) higher risk of developing Mets (34) and also other study in same country showed strong associations were found between Mets prevalence and being overweight, being obese, having a higher waist-to-hip ratio (34). Magnitude of Mets was 19.8% in females with normal BMI, 48.1% in overweight females and 63.2% in obese females. In males, corresponding values were 3.7%, 18.0% and 40.1% (45).

In Ethiopia study showed a higher prevalence Mets was presented in overweight status was 21%; (95% CI 1.03–4.71) (20). Similarly, those who were overweight vs normal weight (AOR 2.21; 95% CI 1.03–4.71) were associated with Mets (18), overweight and obese participants had a 5.4 (AOR: 5.411, 95% CI: 2.549–11.487) times higher risk of developing Mets compared to normal and underweight participants (22) and similarly, participants with a raised waist to hip ratio were 4.9 (AOR: 4.910, 95% CI: 1.076–22.402) times at a higher risk of developing Mets compared to those with a low waist to hip ratio (22).

In Sudan, finding showed that, the prevalence of Mets was higher in urban than in rural areas (31). Similarly in Ethiopia, showed that urban dwellers of Northern Ethiopia and significantly higher magnitude of Mets (82.8%) compared to rural inhabitants (17.2%), p = 0.003 (21).

2.2.5. Conceptual framework

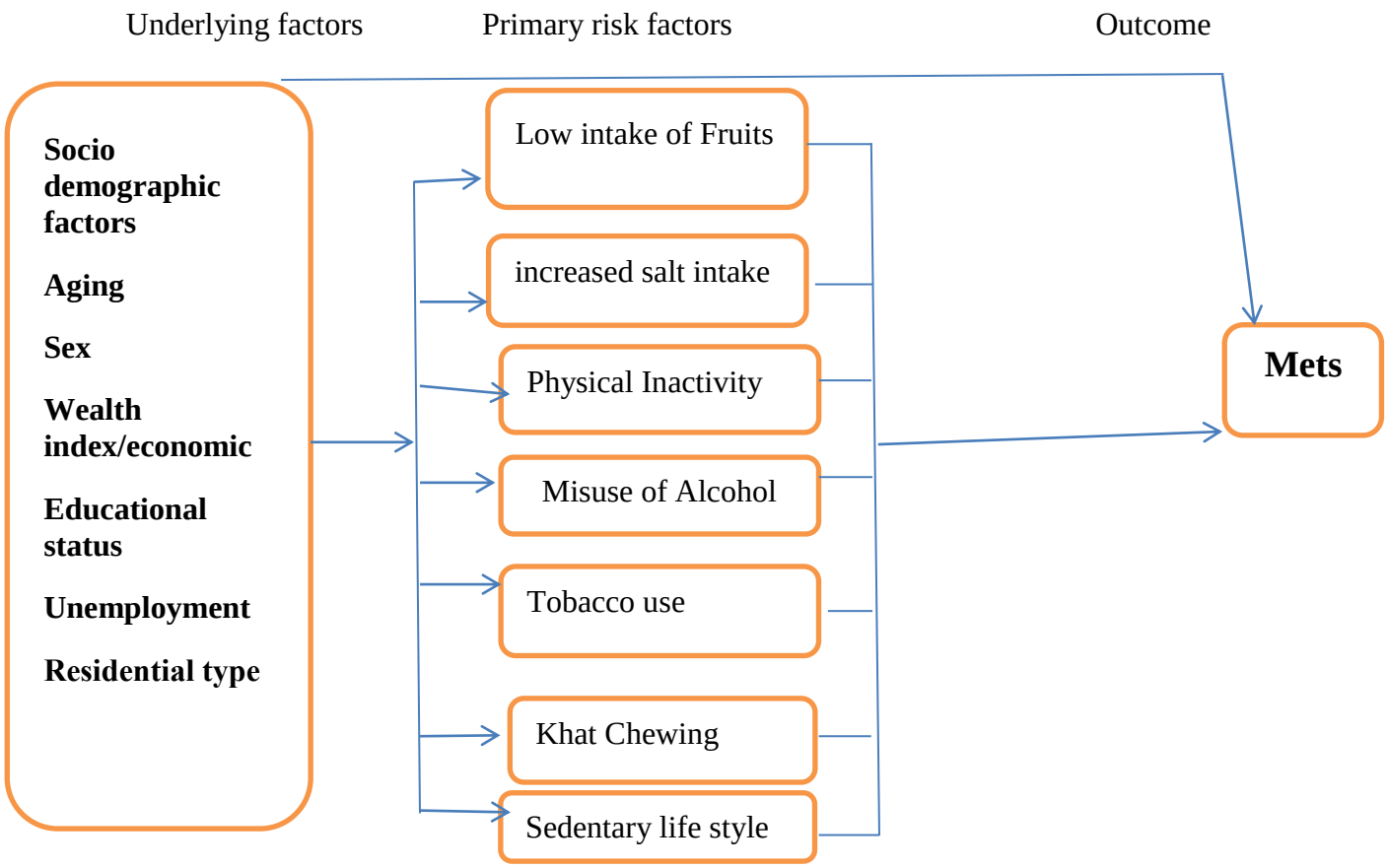

Figure 1 conceptual frame work for magnitude of Mets

(20), (21), (19), (42), (22).

The above conceptual frame work is adopted from different literatures. In the above conceptual frame work there were factors that significantly associated with Mets which were age, sex, wealth index, sedentary behavior, low intake of vegetable and fruit, physical inactive, tobacco use, misused alcohol, overweight, these factors on Mets magnitude in study area.

3. Objectives

3.1 General objective

To determine the magnitude and factors associated with metabolic syndrome among adult seeking care at Kibet Primary Hospital, between April and May, 2021.

3.2 Specific objectives

1. To determine magnitude of Mets among adult who visit OPD in Kibet Primary Hospital.
2. To identify factors associated with Mets among adult who visit OPD in Kibet Primary Hospital.

4. METHODS AND MATERIALS

4.1. Study Area

This study was conducted in adult seeking care of Kibet primary hospital. Kibet town is located from our capital city of Addis Ababa 147 kms away to southern. Kibet primary hospital has been established since 2014 and the catchment area population was 251171. From this population male 63997, female 66611 total 130609 were above 18 years. In catchment area transportation systems changing dramatically according to kibet town transport office report, 306 Bajaj, 346 motor cycles and 203 carts were served as taxi currently (46). Before 10 years the catchment area only two municipality towns, in study year five municipality towns and one administrative town. In these towns various number of restaurants and supermarkets (46). In 2013 EFY, 38867 liters of solid oil allocated from government body per month in addition to private shops supplied (46). From young adults up to elderly most of the population chewing khat daily. At this catchment one primary hospital, six health centers and 38 health posts were included. In this hospital adult seeking care mean monthly per capital was 959 visitors in a month. In addition, 554 cases diabetes mellitus and 112 hypertension cases enrolled (47).

4.2. Study design and period

An-institutional based cross sectional study was conducted between April and May, 2021.

4.3. population

4.3.1. Source Population

All adult seeking care at Kibet primary hospital during the study period.

4.3.2. Study population

All randomly selected among adult seeking care at Kibet primary hospital during the study period.

4.4. Eligibility criteria

4.4.1. Inclusion criteria

All seeking care who was ≥18 years included in the study.

4.4.2. Exclusion criteria

Those seeking care who were critical case/emergency case, unable to speak and hear, pregnancy mothers, known clients on long term steroid anti-inflammatory medication, known cases all type of mental ills on drug, HIV cases on treatment and physical deformity like scoliosis was not be included as reliable information may not collected in the former cases and the Mets estimate was inflated in latter cases.

4.5. Sample size determinations and process

4.5.1. Sample size determinations

The sample size was determined considering a proportional difference approach for cross sectional study using Epi info version 7 statistical software package taking into account the following exposure variables for magnitude of Mets; socio demographic, dietary, behavioral and biological factors. The sample size was determined using single population formula for estimating single population proportion from the infinite population. The formula calculated sample size (n) was (n) =

$n= (Z_2- \alpha/2)^2 * (p(1-q)) /d^2$

Considering the following assumptions = assumed the highest population proportion magnitude of metabolic syndrome in Ethiopian, adult outpatients of Jimma University Teaching hospital was 26% (21) ,non-response rate =10%

Where: n= sample size from the infinite population, z (a/2) = Z-score at 95% confidence interval = 1.96,

For objective one sample size;

The prevalence of Mets; P= 26% = 0.26 (positive prevalence), 1-P=q= 0.74 (negative prevalence), d= marginal error=0.05 (5%)

$n= (1.96)^2 * (0.26*0.74)/(0.05)^2$ =296 (21), n=296

For the second objective sample size;

The sample size was determined by reviewing different literatures for common factors that were found to significantly associate with Mets, according to studies in the area. EPI-info 7 statistical software was used to calculate the sample size.

Table 1 to calculate sample size for the second objective by using factors commonly associated with Mets

Variable as exposure	Assumptions						Reference
	OR	Exposed outcome	Unexposed outcome	Power	CI	Sample size	
Aged 40 and above	2.6	39.8	11.3	80%	95%	280	(25)
Vegetable and Fruit ≥3 serving per day	0.36	13.7	73.2	80%	95%	148	(34)
Daily alcohol consumers	1.57	60.7	17.6	80%	95%	286	(29)
Physical active	0.42	45.8	83.9	80%	95%	268	(35)
Sedentary behavior ≥8 hours per day	2.29	44.9	13.8	80%	95%	328	(42)

Based on be taking the higher sample size was 328 participants and by considering 10 % non-response rate the final sample size become 361 which was selected based on systematic random sampling method.

4.5.2. Sampling process

In Kibet primary hospital one triage room and four adults seeking care rooms that given routine medical services and were assigned, OPD 1, OPD 2, OPD 3 and OPD 4. The sample size was proportionally allocated to the four adult seeking care rooms in the hospital by considering the number of participants attending those rooms in the preceding year of the data collection year. By using a systematic random sampling techniques at each room we estimated expected number of participants for one month duration and divided

the number of participants for the one month duration by the required sample size to find the interval that we got to take our sample.

Table 2: Number of adult seeking care for the Four rooms at Kibet Primary Hospital in 2012 EFY

Adult seeking care rooms at Kibet Primary Hospital	Number of adult seeking care in the 2012 EFY	Intervals 'k'	Sample taking
OPD 1	254	2.7	94
OPD 2	206	2.4	86
OPD 3	231	2.6	89
OPD 4	268	2.8	94
Total	959	2.65	361

Therefore, that all the rooms had the same interval, which was the value of K ≈ 2 and random number between 1 and 2 was selected, subjects were taken every 2 interval of the selected number until the required number was reached. The starting point was selected by lottery method.

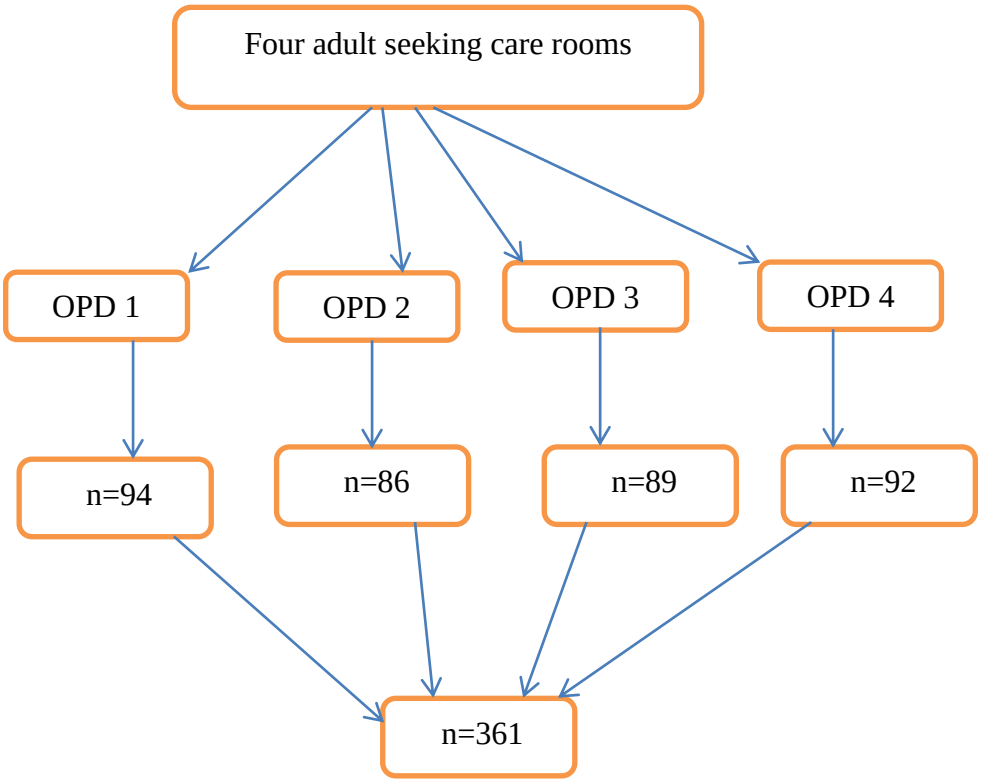

Figure 2: Schematic presentation of sampling procedure for adult seeking care at Kibet Primary Hospital.

4.6. Data collection tool and procedures

Afterward participants finished triage room assessments, got their waiting area, the interview followed. The interviewer clarified the objective of the study and got informed consent to conduct the interview and the left interview. Later participants got the required consultation with their physicians, then went to laboratory department to give sample or to be appointed for next morning.

In case of pandemic disease, to avoid risk of COVID-19 transmission necessary measures were taken by data collectors such as wearing mask properly, keeping their social distance, sanitizing their hands.

Data were collected through structured questionnaire based on face to face interview by trained health professionals.

4.6.1. Data collection tool

A structured questionnaire adapted from the WHO STEPS survey tool was used to collect the data collected (49), basic demographic information, including age, sex, literacy, level of education, marital status, occupation and wealth index. Next behavioral like tobacco use, alcohol consumption, khat consumption, fruit and vegetable consumption, physical activity, sedentary behavior, Oil consumption, history of blood pressure, history of diabetes, thirdly taking physical measurement like weight and height, waist circumference, blood pressure, hip circumference (49). Lastly biochemical measurement; HDL-cholesterol LDL-Cholesterol triglycerides and Fasting blood sugar was taking accordingly (49).

A Questionnaire was developed as equal as sample size. The questionnaire was initially prepared in English and translated into the Amharic and local language Siltigna by fluent speakers and then after collection data back-translated into English by bilingual experts to ensure the translation's consistency and accuracy. The questionnaire 5% (n=20) was pre-

tested at another nearby public hospital Tora. Before data collection, questions and the translation was refined based on the feedback obtained during the pre-test. The data was collected and supervised by 5 health professionals (1 supper visor, 3 data collectors and 1 laboratory technologist). For 2-days training was focused on the content of the questionnaire, data collection techniques, and ethical conduct of human research was offered for the data collectors, supper visor and laboratory technologist. The supervisors closely supervised the data collection processes and checked a sample of filled questionnaires for completeness.

About assessing physical activity for adult was based on WHO step wise for adults of this age group. Physical activity includes recreational or leisure-time physical activity, transportation (e.g walking or cycling), occupational (i.e. work), household chores, play, games, sports or planned exercise, in the context of daily, family, and community activities. These all physical activities categorized in to three;

Physically-vigorous-intensity activity; was defined as any activity that caused large increase in breathing or heart rate, if continued for at last 10 minutes (e.g. running carrying or lifting heavy loads, digging or construction work) (49). This physical vigorous- intensity activity recommended for adult 75-150 minute throughout week (50).

Physically-moderate-intensity activity; was defined as any activity that caused small increase in breathing or heart rate, if continued for at least 20 minutes {brisk walking or carrying light loads}.,digging or construction work}(49). This physical moderate intensity activity recommended for adult 150-300 minute throughout week (50)

Physically-low-level activity was not doing above in high level and moderate level physical activities (49).

Wealth index was calculated using easy-to-collect data on a household's ownership of selected assets, such as ownership of television, radio, and materials used for housing construction and types of water access and sanitation facilities. It was generated with a statistical procedure known as principal components analysis; the wealth index places individual households on a continuous scale of relative wealth which will categorized in to 3 wealth quintiles (51).

Physical measurements

Physical measurements such as weight, height, blood pressure, waist and hip circumference were done using standardized techniques as follow. Each patient's weight

was measured in kilograms using (well-calibrated scales and adjusted to zero before each measurement) standard procedures by using adult weight scale (Germany brand weight scale); the person stand with minimal movement and his or her hands by his or her side. Moreover, the participants' shoes and excess clothing was removed. The height of participants was measured using a height board. Height was measured using standard procedure (bare foot, Frankfurt position, ankle, buttock and shoulder touching) in standing position by using height measuring board Stadiometer to the nearest 0.1 cm.

The blood measurements was taken three times at the midpoint of the left arm, if there were both arms available but there was no left arm taken from alternative arm in a sitting position. If participant was not able to sit, measurement would be taken by supporting the participant. The measurements was taken after participants rest for at least five mints or 30 minutes for those who was taken a hot drink like coffee, tea by using digital patient monitoring machine and younker monitor with a universal cuff and automatic blood pressure. Mean blood pressure measurement value was taken. Take as raised blood pressure ≥ 130/85 mm Hg systolic and diastolic respectively (3). Waist circumference was measured in centimeter at the narrowest point between the lower costal border and the iliac crest using flexible non-stretchable standard tape measure in cent meter with constant tension tape. High waist circumference was taken as men >102 cm, women >88 cm (NECP/ATP3) criteria. Hip circumference was taken around the maximum circumference of the buttocks using an inelastic measuring tape.

BMI and Waist to hip ratio was calculated to determine the obesity status. BMI measures body weight and height, and calculates with (Body weight (kg)/ Body height (m^2). Normal BMI 18.5-24.99 kg/m^2, overweight BMI 25-29.99 kg/m^2, obese BMI= >=30 kg/m^2 (3). High waist to hip ratio was taken as >0.9 in men and >0.85 in women (4).

Blood sample collection and processing

About 5 ml of blood sample was collected following minimum of eight hours fasting or early in the morning before breakfast, if breakfast taken, Participants were appointed to the next morning. With standardize serum separator tube from each participant by trained laboratory technologist. The process of blood sample collection was through aseptic/sterile technique. Serum was obtained from collected blood sample by centrifugation at 3000 rpm for 7 minutes using Rotanta 960 centrifuge in thermo stable condition after 30 minutes of

collection. Separated serum sample was done in Laboratory department of Kibet Primary Hospital and Worabe Comprehensive Specialized Hospital.

Biochemical measurement**;** Laboratory tests was performed for, triglyceride, HDL-cholesterol and LDL cholesterol by using ERBA and Cobas C 113 Clinical chemistry analyzer machine and for FBS measured by using senso-glucometeric machine.

Triglycerides

Triglycerides were measured enzymatically in serum or plasma using a series of coupled reactions in which triglycerides were hydrolyzed to produce glycerol. Glycerol was then oxidized using glycerol oxidase, and H2O2, one of the reaction products, absorbance was measured at 500 nm (52). According to Roche diagnostic of Triglycerides 2016. High levels of serum triglycerides (≥1.7 mmol/L/ ≥ 150 mg/dl) help mark conditions that were associated with increased risk for Mets and CVD (52).

High density lipoprotein (HDL) cholesterol

The cholesterol concentration of HDL cholesterol was measured enzymatically by cholesterol esterase (CHER) and cholesterol oxidase (CHOD). Cholesterol esters were broken down quantitatively into free cholesterol and fatty acids by cholesterol esterase. In the presence of oxygen, cholesterol was oxidized by cholesterol oxidaseto Δ4-cholestenone and hydrogen peroxide. The color intensity of the blue quinoneimine dye formed was directly proportional to the HDL-cholesterol concentration. It was determined by measuring the increased in absorbance at 583 nm (52). Low serum concentrations of HDL-cholesterol were associated with increased risk for Mets and CVD (52).

Glucose Testing

Fasting capillary blood glucose of each participant was measured by using senso-glucometric glucose monitoring apparatus. In fasting state, participants was diagnosed, they were defined as having pre-diabetes if the fasting blood glucose >100 mg/dl (52).

4.7. Data quality control

Before data collection the questionnaire was translated by language expert from English version to Amharic and Siltigna language and back translated to English language by different translators to keep the consistency of the questionnaire. Data collectors was health professionals, 2 health officers, 1 Bsc nurse, 1 laboratory technologist and under the

close supervision was covered every detail of the study and the full range of skills involved in the study and addresses the objectives of the study. Blood sample collection was done through standardized, calibrated and sterile technique. The instrument was pretested on 5% of the actual sample in Tora primary hospital with similar socioeconomic status with the study population before actual data collection and correction was taken accordingly. Weight scale was calibrated at zero with no object on it and placed in level surface before measurement was carried out. The weight scale was calibrated (on each participant if necessary) on daily basis and after moving the scale from place to place against the known objects. During data collection questionnaires was checked for completeness on daily basis by data collectors and supervisors. About the validity of questionnaire was checked by contents and consistency when translated. Besides this, questionnaire was modified from the World Health Organization instrument for stepwise surveillance (WHO STEPS) of chronic disease risk factors (49) . Reliability of questionnaire was checked by Cronbach's alpha and its value was 0.861. On the anthropometric particularly for waist and hip circumferences measurements was standardized, which means, the Participants stand with feet close together, arms at the side and body weight evenly distributed. The participant was relaxed and the measurements was taken at the end of a normal expiration. All of the the measurement was repeated twice; some repeated measurements were within 1 cm of one another, the average was calculated and other repeated measurements were exceed 1 cm, at that time the two measurements were repeated and again. Moreover, techniques and methods, techniques error measurement was done (intra measurer error and inter measurer error was checked when the pretest) and on the laboratory techniques and methods, techniques error measurement reliability checked for completeness during data management, storage, and analysis.

4.8. Variables

4.8.1. Dependent variable

Mets

4.8.2. Independent variables

Socio demographic; age, sex, educational level, wealth index, height. Behavioral factors**;** physical activity status, alcohol consumption, Cigarette smoking, Khat chewing, low fruit and vegetable intake and biological factors and other potential risk factors.

4.9. Operational and Terms definitions

Mets was: defined as the sum value of the following five components of Mets were ≥3 by using NECP/ATP3 criteria. Those five components were; high waist circumference (was taken as men >102 cm and women >88 cm) or triglycerides ≥150 mg /dl or reduced HDL-C (<40 mg/dl in males and <50 mg/dl in females) or high BP (systolic BP ≥130 and diastolic BP ≥85 mmHg) or increased fasting plasma glucose >100 mg/ dl. Measurements of the components were assigned zero when below the lowest cut-off value and one if the measurements are at or above the cut-off value for each component of Mets. For Mets was the sum value of the above five components of Mets measurements were ≥3 was coded as one indicated the presence of Mets, while the sum value of components of Mets ≤2 was coded as zero and was considered as no Mets. Then, Mets was grouped into two categories, which were coded as one "yes" and zero "no" (53).

Waist circumference: defined as waist circumference >102 cm in men and >88 cm in women (54).

Adult: any seeking care age ≥18 years at hospital.

Alcohol use: Those participants who has drunk any type of alcohol at least per week

Habitual khat user: frequent chewer of khat on a daily basis (55).

Hypertension: was defined as a rise in blood pressure when systolic blood pressure ≥135 mm Hg and diastolic blood pressure ≥85 mm Hg (3).

Body Mass Index (BMI): was calculated by dividing weight in kilograms (kg) by the square meter (m^2) of height. Adults: underweight (BMI < 18.5), Normal (BMI > 18.5 and < 25), overweight (BMI > 25 and < 30) and obese (BMI > 30) (4).

4.10. Data processing and analysis

After the data collection, data was checked manually for its completeness every day. The data was edited, coded, entered using Epi data version 3.1 daily basis and after complete entry of data it was exported to SPSS version 21 for analysis. Frequency distribution was done to check for outliers, inconsistencies and to identify missing values. Descriptive statistics such as frequencies, percentage, summary measures, tables and graphs was used to describe the

results of the respondents. Bivariable and multivariable binary logistic regression analysis was used to determine the potential determinants of metabolic syndromes. A statistically significant association was declared at p-value of <0.05. COR and AOR with its 95% confidence level was reported. Moreover, presence of multicollinearity was checked by using standard error estimate. Finally, Goodness fit of the model was tested using Hosmer and Lemeshow likelihood ratio statistics (value=0.799) . And the about Wealth Index- was a composite measure of the cumulative living standard of a household. The wealth index was calculated using easy-to-collect data on a household's ownership of selected assets. It was generated with a statistical procedure known as principal components analysis which was categorized in to 3 wealth quintiles (51).

4.11. Ethical consideration

Ethical clearance and support letter was obtained from research and ethics committee of Wolkite university institute of health ethics review board. A support letter was obtained from the department of post graduate public health. The necessary permission was obtained from Kibet town administrative office, health office and Kibet hospital authorities. Data was kept confidential and anonymous and it was used only for research purpose. If participants could read and was sign on the informed consent if the study participants was illiterates the data collector read and took the signed thump impression when they agreed to take part in the study. The participants was also informed their right to refuse if they did not want to participate.

4.12. Dissemination of the Result

The result will be submitted to Wolkite University, department of public health. Result shall be disseminated for stakeholders specially Kibet primary Hospital. In addition, the results will be disseminated through publication in peer reviewed local or international sound journal.

5. Results

5.1. Basic demographic characteristics of the participants

The response rate of participants was 97.2%. Out of the 351 study participants, 186 (53%) were men and 165 (47%) were women. The mean age (± standard deviation) of the participants was 38.57 (±11.1) years and 26% were under 30 years while 46% were in the

age range of 31–44 years and 28% were 45 and above years. The majority of the participants, 274 (78.1%) come from rural. Regarding education of the participants, illiterates were 131(37%) and 94 (27%) can read and write and attended formal education up to 12 grade 111 (31.7%), the remaining 15 (4.3%) were college and above level (Table 3)

Table 3 Socio-demographic characteristics among adults seeking care at kibet primary hospital, Southern Ethiopia, March to April 2021 (N 351)

Variables	Category	Frequency(N)	Percent (%)
Sex			
	Female	165	47
	Male	186	53
	Total	351	100
Age (year)			
	<30	91	25.9
	31-44	160	45.6
	45-54	57	16.2
	≥55	43	12.3
Education level			
	Illiterate	131	37.3
	Literate	94	26.8
	Grade 1-8	83	23.6
	Grade 9-12	28	8
	College and above	15	4.3
Religion			
	Muslim	310	88.3
	Orthodox	41	11.7
	Protestant	0	0
	Other	0	0
Residence			
	Rural	274	78.1
	Urban	77	21.9
Marriage			
	Married	308	87.7
	Single	27	7.7
	Divorce	5	1.4
	Widowed	11	3.1
Occupational status			
	Farmer	160	45.6
	Trader	30	8.5
	Student	17	4.8
	Government employed	27	7.7
	NGO	2	0.6
	House wife	105	29.9
	Daily labor	8	2.3
	Other	2	0.6
Wealth index			
	Low	38	10.8

	Medium	215	61.3
	High	98	27.9

5.2. Magnitude of metabolic syndrome and its components

Using the NECP/ATP3 criteria, the prevalence of Mets was 18.5.1% (Figure 3) among the participants, out of which 22.2% were females and 15% were males. Accordingly, out of the five components of Mets abdominal obesity was 18.5 , high blood pressure was 10.5%, FBS was 18.8% and elevated triglyceride was 23% (Figure 4).

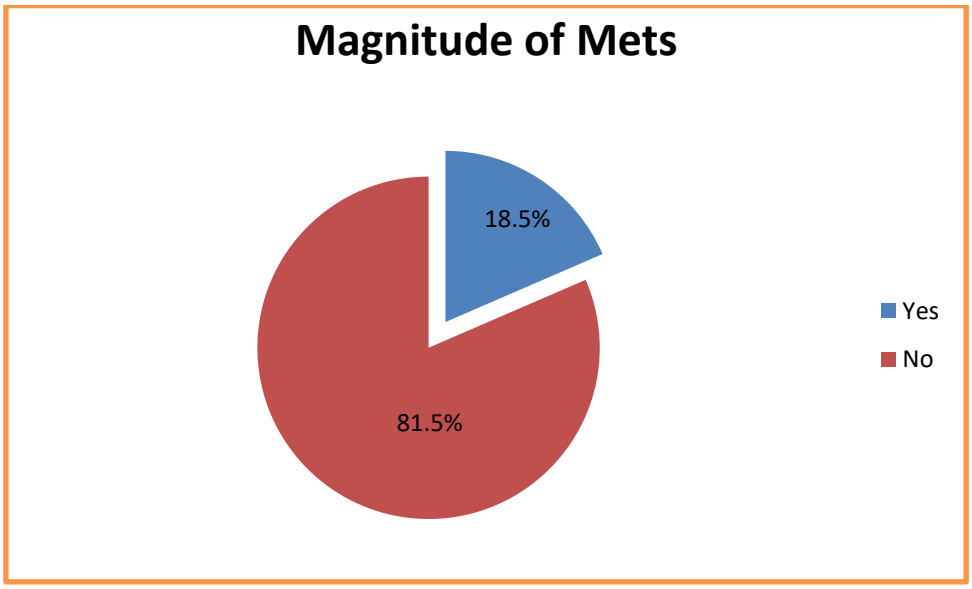

Figure 3. Magnitude of Mets among adults seeking care at kibet primary hospital, Southern Ethiopia, March to April, 2021.

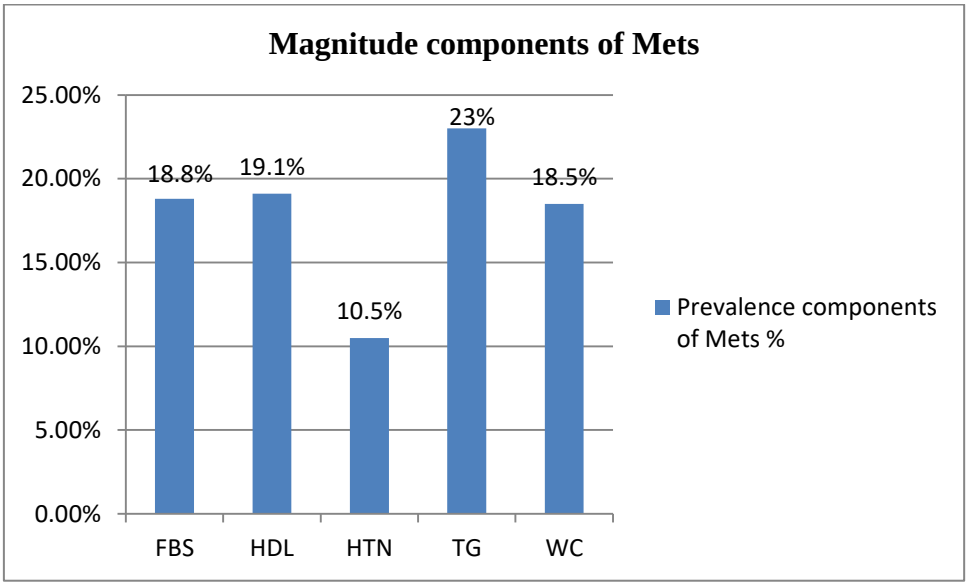

Figure 4. Magnitude Mets components among adults seeking care at kibet primary hospital, Southern Ethiopia, March to April 2021.

Lifestyle and Behavioral Characteristics

Out of 351 studied participants 50(14.2%) had history of any alcohol consumption from self-report, Consumption of khat chewing were 163 (46.4%), having Physical works (activities) were 166 (47.3%), those with 8 or more hours of sedentary behavior were 155 (44.2%) and adding of salt before eating food 261 (74.4%) (Table 4).

Table 4 life styles and behavioral characteristics among adults seeking care at kibet primary hospital, Southern Ethiopia, March to April 2021

Variables	Category	Frequency(N)	Percent (%)
Smoking status			
	Yes	24	6.8
	No	317	93.2
Consuming alcohol 5–6 days per week			
	Yes	50	14.2
	No	301	95.8
Daily khat chewing			
	Ye	163	46.4
	No	188	53.6
Serving of green leafy vegetable per day			
	1 serving	9	2.6
	2 serving	90	25.6
	3 serving	246	70.1
	4 serving	6	0.6

Serving of fruit per day			
	0	68	19.3
	1 service	119	34
	2 service	73	20.7
	3 service	91	26
Adding of salt during preparation/ cooking food			
	Yes	261	74.4
	No	90	25.6
Number of day eating vegetable per week			
	<2 days/week	69	19.7
	2-4 days/week	110	31.3
	≥ 5 days/week	172	49
Type of oil for meal preparation			
	Vegetable oil	153	43.6
	Butter	2	0.6
	Solid fat oil	196	55.8
Involving physical activities			
	Yes	183	52.1
	No	168	47.9
Sedentary behavior per day			
	<8 hours	196	55.8
	≥8 hours	155	44.2

5.3. Associated factors of metabolic syndrome

According to binary logistic regression those who had involving daily physical activities showed to reduce the risk/odds of Mets (COR=0.28; 95% CI: 0.16-0.51). Among participants who had sedentary behavior ≥8 hours per day had great chance of developing Mets as compared to who had sedentary behavior <8 hours per day (COR =5.2; 95% CI: 2.82-9.60) while among participants who had vegetable and fruit 3 and more service per day less likely to develop Mets (COR 0.51; 95% CI: 0.30-0.90) (Table 5)

Table 5 Bivariat predictors for metabolic syndrome among adults seeking care at Kibet primary Hospital, Southern Ethiopia, March to April 2021

Variables	**Mets**		**COR(95% CI)**	**P-value**
	Yes	**No**		
Sex				
Female	37(22.4)	128(77.6)	1.63(0.95-2.81)	0.78
Male	28 (15.1)	158 (84.9)	Reference	
Age in years				
<30	6(6.6)	85 (93.4)	Reference	
30-44	30(18.8)	130(81.2)	3.27(1.31-8.20)	0.011
45-54	18(31.6)	39 (68.4)	6.5(2.41-17.75)	0.00
≥55	11(25.6)	32(74.4)	4.8(1.66-14.26)	0.004

Residence				
Rural	47(17.2)	227(82.8	Reference	
Urban	18(23.4)	59(76.6)	1.47(0.79-2.72)	0.22
Marriage status				
Married	59(19.2)	249(80.8)	Reference	
Single	2(7.4)	25(92.6)	0.34(0.08-1.46)	0.15
Divorce/widowed	4(25)	12(75)	1.41(0.44-4.52)	0.57
Educational status				
Primary 1-8 and less	61(19.8)	247(80.2)	Reference	
Secondary 9-12	1(3.6)	27(96.4)	0.15(0.02-1.13)	0.065
College and above	3(20)	12(80)	1.01(0.28-3.70)	0.98
Occupational status				
Farmer	26(16.3)	134(83.8)	Reference	
Trader	9(30)	21(70)	2.21(0.91-5.36)	0.08
House wife	23(21.9)	82(78.1)	1.44(0.77-2.70)	0.25
Government employed	6(22.2)	21(77.8)	1.47(0.54-4.00)	0.45
Others	1(3.4)	28(96.6)	0.18(0.02-1.41)	0.11
Wealth index				
Low	7(18.4)	31(81.6)	Reference	
Medium	32(14.9)	183(85.1)	0.8(0.31-1.91)	0.58
High	26(26.5)	72(73.5)	1.6(0.63-4.07)	0.32
BMI				
<25 kg/m^2	13(5.4)	229(94.6)	Reference	
≥25 kg/m^2	52(47.7)	57(52.3)	11.07(8.19-31.51)	0.000
Current smoking status				
Yes	10(41.7)	14(58.3)	3.53(1.49-8.36)	0.004
No	55(16.8)	272(83.2)	Reference	
Consuming alcohol(at least 300 ml) 5–6 days per week				
Yes	21(42.0)	29(58.0)	4.2(2.22-8.070	0.000
No	44(14.6)	257(85.4)	Reference	
khat chewing				
Yes	44(27)	119(73)	2.9(1.66-5.21)	0.02
No	21(11.2)	167(88.8)	Reference	
Number of days eating vegetable per week				
<2 days/week	22(31.9)	47(68.1)	Reference	
2-4 days/week	28(25.5)	82(74.5)	0.73(0.38-1.42)	0.35
≥5 days/week	15(8.7)	157(91.3)	0.20(0.10-0.43)	0.01
Serving vegetables and fruit ≥ 3 times per day				
Yes	39(15.5)	213(84.5)	0.51(0.30-0.90)	0.003
No	26(26.3)	73(73.7)	Reference	
Adding of salt or a salty sauce during preparation food				
Yes	61(23.4)	200(76.6)	6.56(2.31-18.60)	0.01
No	4(4.4)	86(95.6)	Reference	
Oil				
Vegetable oil	9(5.8)	146(94.2)	Reference	
Fat/solid oil	56(28.6)	140(71.4)	6.5(3.1-13.6)	0.00
Other	0	0	0	0
Involving physical activity				
Yes	18(9.8)	165 (90.2)	0.281(0.16-0.51)	0.001
No	47(28.0)	121 (72.0)	Reference	
Sedentary behavior in hours per day				
≥8	49 (31.6)	106(61.4)	5.20 (2.82-9.60)	0.02
<8	16 (8.2)	180(91.8)	Reference	

After controlling for possible confounders using the multivariable binary logistic regression model and fitting a model using the Hosmer and Lemeshow, among participants who had sedentary behavior ≥8 hours per day higher risk of developing Mets (AOR=3.76; 95% CI=1.38-10.25), Individual with BMI ≥25 kg/m^2 had a higher likelihood of developing Mets than who were with BMI <25 kg/m^2 (AOR=4.1; 95% CI: 3.13-11.51) whereas, in case Serving of vegetables or fruit ≥ 3 times per day less likely develop Mets (AOR=0.52; 95% CI=0.27-1.12) and also involving physical activity had less risk of developing Mets (AOR=0.41; 95% CI=0.20-0.80). While, consuming alcohol 5–6 days per week had the risk of developing Mets (AOR=2.9; 95% CI=1.11-7.55) were significant in multivariable logistic regression analysis with Mets (Table 6)

Table 6. Factors associated with metabolic syndrome among adults seeking care at Kibet primary Hospital, Southern Ethiopia, March to April 2021

Variables	**Mets**		**COR(95% CI)**	**AOR(95% CI)**
	Yes	**No**		
BMI				
<25 kg/m^2	13(5.4)	229(94.6)	Reference	
≥25 kg/m^2	52(47.7)	57(52.3)	11.07(8.19-31.51)*	4.1(3.13-11.51)**
Sedentary behavior in hours per day				
≥8	49 (31.6)	106(61.4)	5.20 (2.82-9.60)*	3.76(1.38-10.25)**
<8	16 (8.2)	180(91.8)	Reference	Reference
Serving vegetables or fruit ≥ 3 times per day				
Yes	39(15.5)	213(84.5)	0.51(0.30-0.90)*	0.52(0.27-1.12)**
No	26(26.3)	73(73.7)	Reference	Reference
Involving physical activity				
Yes	18(9.8)	165 (90.2)	0.28(0.16-0.51)*	0.41(0.20-0.80)**
No	47(28.0)	121 (72.0)	Reference	Reference
Consuming alcohol at least 300 ml 5–6 days per week				
Yes	21(42.0)	29(58.0)	4.2(2.22-8.070*	2.9(1.11-7.55)**
No	44(14.6)	257(85.4)	Reference	Reference

=significant at 0.25, **=significant at 0.05

6. Discussion

The purpose of this research was to find out the prevalence and factors associated with Mets. In this study, the magnitude of metabolic syndrome was found to be 18.5% according to NEP/APT3 criteria. This was lower than 21.8%, 20.3% , 26%, 51.1% and 24.5% which were reported in South Africa (32), St.Paul's Hospital Millennium Medical College in Addis Ababa (20), Jimma University Teaching hospital (21), Ayder Comprehensive Specialized Hospital (19) and Hawassa, Southern-Ethiopia(44)

respectively. The reason could be due to difference in participants' residence area, 63.6% of the participants came from urban area which was in Addis Ababa (20) while, the present study participants 78.1% of them came from rural area. Based on available evidences that urban residences might have more chance of facing Mets than rural residents (31). Additionally,, the previous studies were conducted at referral and teaching hospitals (20), (21). Whereas, the current study conducted at primary hospital, because more seriously ill and chronic patients came to referral hospital than primary hospital. Those seriously ill and chronic patients might have more chance of developing Mets components than other cases. Other hospital based studies in Ethiopia showed higher prevalence of Mets, but they were conducted solely in T2DM and with Severe Mental Illness patients (19), (44). This might be to have more risk of Mets.

. However, the magnitude obtained in this study was higher than 10.5%, 9.6% and 7.8% recorded in, Mizan Aman (8) Khartoum(24), and Jimma (56). The variation might be methodological difference, those studies were conducted on apparently healthy population. In addition, the prevalence of Mets can vary between and within geographical regions.

In this study, overweight and obese were associated factors of Mets. Individual with BMI ≥25 kg/m^2 had a higher likelihood of developing Mets than who were with BMI <25 kg/m^2 (AOR=4.1; 95% CI: 3.13-11.51). This finding is consistent with the studies conducted in Ethiopia (44), North Ethiopia (22) and Iran (34). This might be due to the fact that overweight/obesity is the consequences of positive energy balance occurred in the body and can predict a higher WC and FBS; which result in increased adipose tissues/fat cells in the body. Besides, the reason might be overweight/obesity makes variations in anthropometric measurements like (BMI, WC and BP) and biochemical factors including (HD, TG and FBS). The presence of variations in the components of Mets might be either direct or indirect relation with the development of Mets (57).

This study showed that, staying ≥8 hours in a day sedentary behavior was associated with nearly four times higher likelihood of developing Mets (AOR=3.76 95%, CI=1.38-10.25). This finding is consistent with the research conducted in Eastern Ethiopia (42), Southern Ethiopia (44), Kenya (58), and United Kingdom (59). The possible justification due to the effects of sedentary work life or life style can be direct or indirect. One of the most prominent direct effect of a sedentary life style is an increased BMI and leading to obesity. Sedentary life style and lack of physical activities can contribute to or

be a risk factor for Lipid disorders, BP, CVDs. Since physical inactivity and excess weight gain are the main underlying of contributors to the development of Mets.

This study also found that frequent consumption of vegetable and fruit (≥ 3 servings/day) was significantly associated with a lower risk of (AOR=0.52; 95% CI=0.27-1.12). Similar findings were also reported in previous studies conducted in North Ethiopia (22), Eastern Ethiopia (42), Korea (60) and USA (61). This might be due to vegetables and fruits contain many beneficiary health related chemicals like antioxidants, fiber, minerals and and low sugar and energy content. Various antioxidants from vegetables and fruits, such as Vitamin A, vitamin C, vitamin E, and other minerals might reduce the risk of Mets by neutralize free radicals, repair oxidized membranes, decrease reactive oxygen species production, via lipid metabolism, short-chain free fatty acids and cholesterol esters neutralize reactive oxygen species (62). And also taking high fiber diets have the potential to lower fasting plasma glucose, total cholesterol, triglyceride (57). it is inverse relationship between vegetable and fruit consumption and risk of Mets.

The current research also shown that, having a physical activities was significantly associated with Mets. Individuals were involving physical activities at least 150 minute per week less likely to develop Mets than physically inactivity (AOR=0.41; 95%, CI=0.20-0.80). This finding is supported by research conducted in Poland (34), Northern Ethiopia (45), Southern Ethiopia (38). The possible explanation might be individuals who were involving physical activities will be less likely to be obese and had less accumulation of fatty tissues. As a result, their less accumulation of fatty tissues, may have less chance to develop Mets.

This study also revealed that, usual use of alcohol drinking was significantly associated with higher chance of developing Mets.

Participants were consuming alcohol 5–6 days per week had greater chance of developing Mets (AOR=2.9; 95% CI=1.11-7.55). This finding is consistent with the result of studies conducted in Southern Ethiopia (38), Eastern Ethiopia (42), North Ethiopia (22). It's possible that the significant association was due to alcohol by itself has caloric nutrients. Thus, excess use of caloric nutrients might be more the chance of being obese and fatty. As a result, they will be more likely to develop Mets. Still now alcohol misused by communities members, based on finding excess intake of alcohol was risk of having obese, Mets, CVDs and others NCDs.

7. Strength and limitations of the study

One of the study's strengths is that the study include the clinical and socioeconomic factors using both interview and laboratory investigation data and the study participants were recruited using a probability sampling method to ensure the study's representativeness. But, as a drawback, this research has the limitations of a cross-sectional study.

8. CONCLUSION and Recommendation

8.1. CONCLUSION

Generally, a higher proportion of an adult population have experienced Mets in the study area. Individual with BMI ≥25 kg/m^2, having sedentary behavior ≥8 hours per day , consuming alcohol 5–6 days per week were associated factors of Mets. On the other hand, serving vegetables and fruit ≥ 3 times per day, and having physical activity were preventive factors of Mets..

8.2. Recommendation

For Kibet Primary Hospital

Health care providers who work at the hospital should educate the community on the risk factors and the use of healthy diets, physical exercise, and behavioral changing interventions for both the prevention and treatment of metabolic syndrome.

For Zone Health bureau

The Zone Health department should develop effective strategies of integrated screening, counseling, and management components of Mets should be in place at primary health care unit of health system.

For other health facilities

We recommend all the health facilities, which found at catchment area, to give health education about the associated factors of Mets

For Researchers

Further studies should be conducted using a strong research design.

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12. Annex I metabolic syndrome assessment among adult OPD visitors in Kibet primary hospital informed consent form

Introduction:

This form describes what participation in the survey of metabolic syndrome for NCD risk factor assessment among adult OPD visitors in Kibet primary hospital.

Title of Survey: Magnitude and factors associated with metabolic syndrome among adult who are visiting outpatient department at Kibet Primary Hospital.

Data Collection methods: We will collect information from systematic randomly selected OPD visitors in Kibet primary hospital.

Information will be gathered through: A face to face interview which will ask about lifestyle, behaviors and risk factors and medical problems, Measurements of height, weight, waist& blood pressure and Blood sampling to test for blood sugar and dyslipidemia

Time frame It is estimated of the survey will take approximately 1 hour.

Benefits: - the results of study will be used to help Kibet hoospital and Woreda health office to plan action in reducing the risk factors that contribute to Mets

It is your right to: Decline from taking part in the study, Withdraw from the study at any time

Decline to answer any question in the interview that you do not wish to answer.

Confidentiality Your participation and data provided will be completely confidential. Your name will not be used in any report of the study

Ethical letter: This study will be received ethical approval from the Wolkite University, Department of Public Health.

Dear study participant: you can withdraw from the study after having agreed to participate. You are free to refuse to answer any question that is asked in the questionnaire.

Name of study participant ---------- Sign ----------

Witness: ---------- Sign ----------

አባሪ II: -ተላላፊ ያልሆኑ በሽታዎች አጋላጭየሆኑ ሁኔታዎች ጥናት የተሳታፊዎች የስምምነት መረጃ ቅጽ

መግቢያ፡ ይህ ቅፅ በሆስፒታሉ ለሚካሄደው ተላላፊ ላልሆኑ በሽታዎች አጋላጭሁኔታዎች ጥናት እና ተሳትፎ ምን እንደሚመስል ይገልጻል፡፡

የጥናቱ ርዕስ፡ - የዚህጥናት ርእስ ሥር የሰደዱ ተላላፊ ያልሆኑ በሽታዎች አጋላጭሁኔታዎች እና ሥር ጭት ተጓዳኝ ምልክቶች የሚል ነው፡፡

የጥናቱ ዓላማ፡ - ተላላፊ ያልሆኑ በሽታዎች ማለት በበሽታ አምጭተህዋጽአ የማይመጡ በሽታዎች ማለት ናቸው፡፡ ይህ ጥናት ሆስፒታል ለህክምና ለመጡ ታካሚዎች ለበሽታው አጋላጭሁኔታዎችን ያጠናል፡፡

የመረጃ አሰባሰብዘዴ ፡ - መረጃው 361 ከሚሆኑ ተሳታፊዎች ይሰበሰባል፡፡ መረጃው የሚሰበሰበውም፡ - ከተሳታፊዎች ጋር ፊት ለፊት የሚደረግ መጠይቅ ሲሆን የአኗኗር ሁኔታን ባህልን አጋላጭ ሁኔታዎችን እናችግሮችን ይይዛል፣ የቁመት ክብደት የወገብ እና የደም ግፊት መለካትን ያካትታል፣ የደምናሙና ለስኳር በሽታ እና የደም ውስጥ ቅባት መጠን ምርመራን ይይዛል፡

የጥናቱ ደረጃ በጥቅሉ አንድሰአት አካባቢ እንደሚወስድ ይገመታል፡

የማህበረሰብ ጥቅሞች፡ - የዚህ ጥናት ውጤት የጤና ሁኔታዎን በቅዲሚያ እንዲያዉቁ ተላላፊ ያልሆኑ በሽታዎች አጋላጭ ሁኔታዎች ለመቀነስ የሚደረጉ ጥረቶች ለማገዝ እና የሆስፒታሉን የጤና ፕሮግራሞችን ለማጎልበት ያግዛል፡፡ ከዚህ በተጨማሪ ይህ ጥናት ተላላፊ ያልሆኑ በሽታዎች ጋር በተያያዘ የሚሠጠው አገልግሎት የተሻለ እንዲሆን ያግዛል፡፡

የእርስዎ መብቶች፡ - እርስዎ ቀጥሎ የተዘረዘሩት መብቶች አለዎት የጥናቱ ተሳታፊ የመሆን የመግለፅ በማንኛውም ሰዓት የማቋረጥ፤ መጠይቁ በሚካሄድበት ወቅት መመለስ ያልፈለጉትን ጥያቄ ያለመመለስ

ምስጢራዊነት፡ - ስምና እና አድራሻ ይሰጡና ተሳትፎና የሰጡት መረጃ ሙሉ በሙሉ ምስጢራዊ ነው፣ በሚወጣው ማንኛውም ሪፖርት ላይ የእርስዎን ስም አንጠቀምም፡፡

የ ጥ ና ቱ ን ስ ነ ምግ ባ ራ ዊ ነ ት በ ተ መ ለ ከ ተ ፡ - ይ ህ ጥ ና ት በ ዉ ል ቂ ጤ ዩ ኒ ቨ ር ሲ ቲ የ ም ር ም ር ስ ነ ምግ ባ ር ገ ም ጋ ሚ ኮ ሚ ቴ ፀ ድ ቆ ፈ ቃ ድ አ ግ ኝ ተ ዋ ል ፡ ፡

ው ድ ተ ሳ ታ ፊ በ ፈ ቃ ደ ኝ ነ ት ላ ይ የ ተ መ ሠ ረ ተ ተ ዛ ት ፎ ነ ው ፤ በ ሚ ጠ የ ቁ ት ላ ይ እ ና መ መ ለ ስ ለ ማ ይ ፈ ል ጉ ት ጥ ያ ቄ አ ለ መ መ ለ ስ ይ ች ላ ሉ ፡ ፡

የ ተ ሳ ት ፎ ስ ም ም ነ ት ፡ -

ስ ም ----------ፊ ር ማ ----------

ም ስ ክ ር ----------ፊ ር ማ ----------

Annex III Questioner English Version

In kibet primary hospital survey questionnaire on prevalence and risk factors for metabolic syndrome

Step 1 interview

art A: Socio-demographic characteristics			
Q.no.	Questions	Choices for response	Skip
A01	Questionnaire with ID Number of study subjects **(to be numbered before interview)**	Code_____	
A02	Sex (Record Male / Female as observed	Male 1 Female 2	
A03	Age of the participan	Age in years_____	
A04	Religion of the participan	1. Muslim 2. Orthodox 3. Protestant 4. Other	
A05	Ethnicity of the participan	1. Siltie 2. Gurage 3. Amhara 4. Oromo	

		5. Other	
A06	Educational status of the participan	1. Not read and write 2. Read and write only 3. Primary education (1-8) 4. Secondary school (9-12) 5. Collage and above	
A07	Residence of the participan	1. Rural 2. Urban	
A08	Current marital status of the participan	1. Married 2. Single 3. Divorced 4. Widowed	
A09	Current occupation of the participan	1. Farmer 2. Merchant 3. Student 4. Government employed 5. Private employee /local NGO 6. House wife 7. Day laborer r 8. Others (Specify)	

Now I will ask you about some fixed assets that your household has.

art B: wealth index			
Q.no.	Questions	Yes	No
	Does the household have any of the following properties? (Circle)		
B01	Has household access to electricity?	1	0
B02	Functioning Television	1	0
B03	Refrigerator	1	0
B04	Mobile telephone	1	0
B05	Table	1	0
B06	Chair	1	0
B07	Bed with cotton/sponge/spring mattress	1	0
B08	Electric mitad	1	0

B09	Bicycle	1	0
B10	Motor cycle/ Bajaj	1	0
B11	Car	1	0
B12	Animal-drawn cart	1	0
B13	Hand pump water	1	0
B14	Piped into dwelling	1	0
B15	Public tap/stand pipe	1	0
B16	Dug well	1	0
B17	Water from spring	1	0
B18	River/Lake/Pond/Stream/Dam	1	0
B19	Has household toilet facility?	1	0
B20	Do you share this toilet facility with other households?	1	0
B21	Does any member of this household own any agricultural land?	1	0
B22	oes any member of this household have a bank or microfinance saving account?	1	0

	Does the household have any of the following animals? (Circle)	yes	No	How many?
B23	Oxen	1	0	
B24	Cows	1	0	
B25	Horse/mules/ Donkey	1	0	
B26	Goats/Sheep	1	0	
B27	Chickens	1	0	

Behavioural Measurments

Now I am going to ask you some questions about tobacco use.

art C tobacco use			
Q.no.	Questions	Choices for response	Skip
C01	Do you currently smoke any tobacco products?	Yes 1 No 2 If No, go to C08	

C02	Do you currently smoke tobacco products daily?	Yes 1 No 2	
C03	How old were you when you first started smoking?	Age (years) -------- Don't know	
C04	Do you remember how long ago it was?	In Years ------	
		OR in Months---------	
C05	n average, how many of the Manufactured cigarettes do you smoke each day/week	1. Daily---------- 2. Weekly----------	
C06	Do you smoke Shisha currently?	1. Yes 2. No	
C07	Number of Shisha sessions	1. Daily---------- 2. Weekly----------	

Now I am going to ask you some questions about drinking alcohol.

rinking alcohol			
Q.no.	Questions	Choices for response	Skip
C08	Have you ever consumed any alcohol such eer, Tella, Bordie, Tej, Arake, wine, spirits (beherawi, ye bale zaf,)	Yes 1 No 2 If No, go to Part D	
C09	During the past 12 months, how frequently ave you had at least one standard alcoholic drink?	Daily 1 5-6 days per week 2 3-4 days per week 3 1-2 days per week 4 1-3 days per month 5 Less than once a month 6	
C10	Have you consumed any alcohol within the past 30 days?	Yes 1 No 2 If No, go to D	
C11	During the past 30 days, when you drank alcohol, how many standarddrinks on average did you have during one drinking occasion	Number -------- Don;t know	
C12	During each of the past 7 days, how many standard drinks did you have each day?	Monday------Tuesday----- Wednesday---------- Thursday----- ---- Friday------ Saturday-----	

		Sunday---------	

Part D: Khat use (Expanded Khat Chewing)			
Q.no.	Questions	Choices for response	Skip
D01	Have you ever consumed khat?	Yes 1 No 2 if no go to part E	
D02	How old were you when you first started chewing?	Age in years ------- Don't know	
D03	During the past 12 months, how frequently have you chewed khat?	Daily 1 5-6 days per week 2 1-4 days per week 3 1-3 days per month 4 Less than once a month 5	
D04	During the past 30 days, how frequently have you chewed khat?	Daily 1 5-6 days per week 2 1-4 days per week 3 1-3 days per month 4 Less than once a month 5	
D05	Do you smoke when you chew?	Yes 1 No 2	
D06	Do you drink alcohol after you chew khat?	Yes 1 No 2 – Go to part E	
D07	How often do you drink alcohol after you chew khat?	Always 1 Sometimes 2 Rarely 3	

The next questions ask about the fruits and vegetables that you usually eat. Some examples of local fruits and vegetables. As you answer these questions please think of a typical week in the last year.

art E diet			
Q.no.	Questions	Choices for response	Skip
E01	In a typical week, on how many days do you eat fruit?	Number of days Don't Know If Zero days, go to E3	
E02	How many servings of fruit do you eat on one of those days?	Number of serving Don't know	
E03	In a typical week, on how many days do you eat vegetables?	Number of days Dont know	
E04	How many servings of vegetables do you eat on one of those days?	Number of serving Dont know	
Dietary salt			
With the next questions, we would like to learn more about salt in your diet. Dietary salt includes ordinary table salt, unrefined salt such as sea salt, iodized salt, salty stock cubes and powders, and salty sauces such as soya sauce or fish sauce .The following questions are on adding salt to the food right before you eat it, on how food is prepared in your home, on eating processed foods that are high in salt such as and questions on controlling your salt intake. Please answer the questions even if you consider yourself to eat a diet low in salt.			
E05	How often do you add salt or a salty sauce such as soya sauce to your food right before you eat it or as you are eating it?	Always 1 Often 2 Some times 3 Rarely 4 Never 5 Don't know	
E06	How often is salt or a salty sauce added in cooking or preparing foods in your household	Always 1 Often 2 Sometimes 3 Rarely 4 Never 5 Don't know	
E07	How often do you eat processed food high in salt? By processed food high in salt, I mean foods that have been altered from	Always 1 Often 2 Sometimes 3	

	heir natural state, such as packaged salty nacks, canned salty food including pickles nd preserves, salty food prepared at a fast food restaurant, cheese, bacon and processed meat	Rarely 4 Never 5 Don't know 77	
E08	low much salt or salty sauce do you think you consume?	Too much 1 Just the right amount 2 Too little 3 Don't know	
E09	Do you think that too much salt or salty sauce in your diet could cause a health problem?	Yes 1 No 2 Don't know	
The next questions ask about the oil or fat that is most often used for meal preparation in your household, and about meals that you eat outside a home.			
E10	What type of oil or fat is most often used for meal preparation in your household? howing use container) (select only one if use mixing, you will take more one)	Vegetable oil 1 Butter 2 Margarine 3 Solid fats 4 Other 5 None used 6 Don't know 7	

Part F: 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.

Q.no.	Questions	Choices for response	Skip
Work			
F01	oes your work involve vigorous-intensity activity that causes large increases in breathing or heart rate like [carrying or	Yes 1 No 2 If No, go to F 4	

	fting heavy loads, digging or construction ork] for at least 20 minutes continuously?		
F02	In a typical week, on how many days do ou do vigorous intensity activities as part of your work?	Number of days	
F03	How much time do you spend doing vigorous-intensity activities at work on a typical day?	Hours minutes	
F04	oes your work involve moderate-intensity activity, that causes small increases in eathing or heart rate such as brisk walking [or carrying light loads]for at least 30 minutes continuously?	Yes 1 No 2 If No, go to F 7	
F05	In a typical week, on how many days do ou do moderate intensity activities as part of your work?	Number of days	
F06	How much time do you spend doing moderate-intensity activities at work on a typical day?	Hours 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),[Insert relevant terms]			
F07	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 20 minutes continuously?	Yes 1 No 2 If No, go to F 13	
F08	In a typical week, on how many days do ou do vigorous intensity sports, fitness or recreational (leisure) activities?	Number of days	
F09	How much time do you spend doing vigorous-intensity sports, fitness or recreational activities on a typical day	Hours minutes	
F10	Do you do any moderate-intensity sports, fitness or recreational (leisure) activities hat cause a small increase in breathing or heart rate such as brisk walking,[cycling, swimming, and volleyball] for at least 20	Yes 1 No 2 If No, go to F16	

	minutes continuously?		
F11	In a typical week, on how many days do ou do moderate intensity sports, fitness or recreational (leisure) activities?	Number of days	
F12	How much time do you spend doing moderate-intensity sports, fitness or ecreational (leisure) activities on a typical day	Hours minutes	
Sedentary behavior			
he following question is about sitting or reclining at work, at home, getting to and from places, or with friends including time spent sitting at a desk, sitting with friends, traveling in car, bus, train, reading, playing cards or watching television, but do not include time spent sleeping.			
F13	How much time do you usually spend sitting or reclining on a typical day?	Hours : minutes	

History of any of the following case had been happened andClinical history

Part G; Clinical history			
History of Raised Blood Pressure			
Q.no.	Questions	Choices for response	Skip
G01	the past two weeks,or one month or more ave you taken any drugs (medication) for ised blood pressure prescribed by a doctor or other health worker?	Yes 1 No 2 If No, go to G2	
History of Diabetes			
G02	In the past two weeks or one month or more, have you taken any drugs (medication) for diabetes prescribed by a doctor or other health worker?	Yes 1 No 2 If No, go to G3	
History of Raised Total Cholesterol			
	Question	Response	Code
G03	In the past two weeks or one month or more, have you taken any oral treatment (medication) for raised total cholesterol prescribed by a doctor or other health worker?	Yes 1 No 2 If No, go to G4	

(for female only): Cervical Cancer Screening			
The next question asks about cervical cancer prevention. Screening tests for cervical cancer prevention can be done in different ways.			
	Question	Response	Code
G04	Have you ever had a screening test for cervical cancer?	Yes 1 No 2 Don't know	

Step 2Physical Measurements

Part H; Physical Measurements			
Blood Pressure measurment			
Q.no.	Questions	response	Code
H01	Respondant ID	----------	
H02	Reading 1	Systolic (mmHg)	
		Diastolic (mmHg)	
H03	Reading 2	Systolic (mmHg)	
		Diastolic (mmHg)	

H04	For female: Are you pregnant?	Yes 1 If Yes, stop measuring No 2	
H05	Height in Centimeters (cm)	---------- (cm)	
H06	Weight in Kilograms (kg	----------kg	
H07	Waist circumference	---------- (cm)	
H08	Hip circumference	---------- (cm)	

Step 3 BiochemicalMeasurements

Part I; BiochemicalMeasurements			
Blood Glucose/ FBS			
Q.no.	Questions	response	skip
	Respondant ID	-------	
I01	uring the past 8 hours have you had anything to eat or drink, other than water?	Yes 1 No 2	
I02	Time of day blood specimen taken (24 hour clock)	Hours : minutes	

I03	Fasting blood glucose	mmol/l ---------- or mg/dl----------	
I04	Today, have you taken insulin or other drugs (medication) that have been prescribed by a doctor or other health worker for raised blood glucose	Yes 1 No 2	
Blood Lipids			
I05	Total cholesterol	mmol/l ---------- or mg/dl----------	
Triglycerides and HDL Cholesterol			
I07	Triglycerides	mmol/l---------or mg/dl ----------	
I08	HDL Cholesterol	mmol/l ----------or mg/dl----------	

14. Annex IV: Questioner Amharic Version

ቃለ -መጠይቅ በ አማርኛ ቅጂ

በቅበት የመጀመሪያ ደረጃ ሆስፒታል ውስጥ የልብ ህመም፤ በሰውነት ውስጥ የስብ መጠን ና የኮሌስትሮል ክምችት፤ የደም ግፊት መጨመር ና የስኳር በሽታዎች ስርጭትና አጋላጭ ምክኒያቶች ላይ የዳሰሳ ጥናት ለማድረግ የተዘጋጀ መጠይቅ

ደረጃ 1 መጠይቅ

ፍልሀ፡ ማህበረ-ስነ ህዝባዊ መገለጫዎች

ጥ ያ ቄ ው ራ /ቁ	ያ ቄ ዎ ች	ማ ራ ጭ መ ል ሶ ች	መ ሳ ከ ሪ ያ
01	ᵓ ለ ያ ቁ ጥ ር ጋ ር (ለ ተ ጠ ያ ቂ ው መ ቅ ረ ቡ በ ፊ ት የ ሚ ሞ ላ)	ᵓ ለ ያ ቁ ጥ ር _____	
02	ታ (ወ ን ድ /ሴ ት ተ ብ ሎ ይ ፃ ፋ ል	ን ድ ከ ሆ ነ -1 ሴ ት ከ ሆ ነ -2	
03	ተ ጠ ያ ቂ ው እ ድ ሜ	ድ ሜ ው በ ዓ መ ት ----	
04	ተ ጠ ያ ቂ ው ም ነ ት (ሀ ይ ማ ኖ ት)	5. ሙ ስ ሊ ም 6. ኦ ር ቶ ዶ ክ ስ 7. ጴ ን ጤ 8. ሌ ላ ኦ ይ ነ ት	
05	ተ ሣ ታ ፊ ው ብ ሄ ር	6. ስ ል ጤ 7. ጉ ራ ጌ 8. አ ማ ራ 9. ኦ ሮ ሞ 10. ሌ ላ ብ ሄ ር	
06	ተ ሣ ታ ፊ ው የ ት ም ህ ር ት ደ ረ ጃ	6. መ ፃ ፍ ና ማ ን በ ብ የ ማ ይ ች ል 7. መ ፃ ፍ ና ማ ን በ ብ ብ ቻ የ ሚ ች ል 8. የ አ ን ዳ ኛ ደ ረ ጃ (1-8) 9. ሁ ለ ተ ኛ ደ ረ ጃ (9-12) 10. ኮ ሌ ጅ ና ከ ዚ ያ በ ላ ይ	
07	ተ ሣ ታ ፊ ው የ መ ኖ ሪ ያ ቦ ታ	3. ገ ጠ ር 4. ከ ተ ማ	
08	ተ ሣ ታ ፊ ው የ የ ጋ ቢ ቻ ሁ ኔ ታ ሁ ን)	5. የ ገ ባ 6. የ ላ ገ ባ 7. የ ፊ ታ 8. በ ሞ ት የ ተ ለ የ	
09	ተ ሣ ታ ፊ ው የ ስ ራ ሁ ኔ ታ	9. አ ር ሶ አ ደ ር 10. ነ ጋ ዴ 11. ተ ማ ሪ 12. የ መ ን ግ ስ ት ተ ቀ ጣ ሪ 13. የ ግ ል ተ ቀ ጣ ሪ /መ ን ግ ስ ታ ዊ ባ ል ሆ ነ ተ ቋ ም ተ ቀ ጣ ሪ 14. የ ቤ ት እ መ ቤ ት 15. የ ቀ ን ሰ ራ ተ ኛ 16. ሌ ላ (ይ ጠ ቀ ስ)	

አ ሁ ን ለ ቤ ተ ሰ ቡ ስ ላ ለ ው ቋ ሚ ን ብ ረ ት የ ሚ መ ለ ከ ት ጥ ያ ቄ እ ን ጠ ይ ቆ ታ ለ ን ፡ ፡

ፍ ል ለ ፡ የ ሀ ብ ት ሁ ኔ ታ ን ጠ ቋ ሚ መ ረ ጃ ዎ ች			
/ቁ	ያ ቄ ዎ ች	ዎ ከ ሆ ነ	ይ ደ ለ ም ከ ሆ ነ
	አ ን ድ ቤ ተ ሰ ብ የ ሚ ከ ተ ሉ ት ሶ ች ኣ ሉ ት ወ ይ ? (መ ል ሱ ን ከ ብ ብ)		
01	መ ብ ራ ት ተ ጠ ቃ ሚ ኖ ት ወ ይ ?		
02	ሚ ሰ ራ ቴ ሌ ቪ ዥ ን አ ሎ ት ወ ይ ?		
03	ሪ ጅ አ ሎ ት ወ ይ ?		
04	ን ቀ ሳ ቃ ሽ ስ ል ክ አ ሎ ት ወ ይ ?		
05	ረ ጼ ዛ አ ሎ ት ወ ይ ?		
06	ን በ ር አ ሎ ት ወ ይ ?		
07	ል ጋ ከ ነ የ ጥ ጥ /የ እ ስ ፖ ን ጅ / እ ሰ ፕ ሪ ን ግ ት ራ ሱ ጋ ር አ ሎ ት ይ ?		
08	ኤ ሌ ክ ት ሪ ክ ም ጣ ድ አ ሎ ት ወ ይ ?		
09	ይ ከ ል አ ሎ ት ወ ይ ?		
10	ተ ር ብ ስ ክ ሌ ት / ባ ጃ ጅ አ ሎ ት ይ ?		
11	ኪ ና አ ሎ ት ወ ይ ?		
12	እ ን ስ ሳ ት የ ሚ ነ ተ ት ጋ ሪ አ ሎ ት ይ ?		
13	እ ጅ በ መ ና ጥ የ ሚ ወ ጣ ውሃ ጠ ቀ ማ ሉ ወ ይ ?		
14	ግ ሎ መ ኖ ሪ ያ ቤ ቶ ውሃ አ ሎ ት ይ ?		
15	ህ ዝ ብ የ ቦ ኖ ውሃ ይ ጠ ቀ ማ ሉ ወ ይ ?		
16	ጉ ድ ጓ ድ ውሃ ይ ጠ ቀ ማ ሉ ወ ይ		
17	ም ን ጭ ውሃ ይ ጠ ቀ ማ ሉ ወ ይ ?		
18	ወ ን ዝ /የ ሀ ይ ቅ /የ ኩ ሬ /የ ት ን ን ሽ ን ዝ / የ ግ ድ ብ ውሃ ይ ጠ ቀ ማ ሉ ወ ይ		
19	ተ ሰ ብ ዎ መ ፀ ዳ ጃ ቤ ት ተ ጠ ቃ ሚ ው ወ ይ ?		

20	ህ ን ን መፀ ዳ ጃ ቤ ት ከ ሌ ላ ተ ሰ ብ ለ ጋ ራ ነ ው ወ ይ ሚጠ ቀ ሙት ?			
21	ቤ ተ ሰ ቡ አ ባ ላ ት የ እ ር ሻ መ ሬ ት ለ ው ወ ይ ?			
22	ዚ ህ ቤ ተ ሰ ብ አ ባ ላ ት ቢ ያ ን ሰ አ ን ዱ ም ቢ ሆ ን የ ባ ን ክ ወ ይ ም አ ነ ስ ተ ኛ (አ ሞ) ፋ ይ ና ን ስ ቁ ጠ ባ የ ሂ ሳ ብ ቁ ጥ ር አ ለ ው ይ ?			
	ቤ ተ ሰ ቡ ከ ሚ ከ ተ ሉ ት ን ስ ሳ ቶ ች ው ስ ጥ የ ት ኛ ው አ ለ ው? ሞ ል ሱ ን ይ ክ በ ቡ)	ዎ	ይ ደ ለ ም	ን ት ?
23	ሬ ዎ ች አ ሎ ት ወ ይ ?			
24	ሞ ች አ ሎ ት ወ ይ ?			
25	ረ ስ / በ ቅ ሎ ዎ ች / አ ህ ያ አ ሎ ት ይ ?			
26	የ ሎ ች /በ ጎ ች አ ሎ ት ወ ይ ?			
27	ሮ ዎ ች አ ሎ ት ወ ይ ?			

የ ባ ህ ር መ ለ ክ ዎ ች .

አ ሁ ን የ ተ ወ ስ ኑ ጥ ያ ቄ ዎ ች በ ሲ ጋ ር የ ሚ ጠ ቀ ሙ ስ ዎ ች እ ጠ ይ ቃ ለ ሁ .			
ጥ ያ ቄ ቁ ጥ ር	ጥ ያ ቄ	አ ማ ራ ች ምላ ሽ	ይ ለ ፍ
ሐ 01	በ አ ሁ ን ስ ዓ ት ማ ነ ኛ ው ን ም የ ሲ ጋ ራ አ ይ ነ ት ያ ጨ ሳ ሉ ?	1. አ ዎ 2. አ ይ ደ ለ ም መ ል ሱ አ ይ ደ ለ ም ከ ሆ ነ ወ ደ ሐ 09	
ሐ 02	በ አ ሁ ን ስ ዓ ት በ የ ቀ ኑ ሲ ጋ ር ያ ጨ ሳ ሉ ?	1. አ ዎ 2. አ ይ ደ ለ ም	
ሐ 03	ለ መ ጀ መ ረ ያ ጊ ዜ ሲ ጋ ረ ሲ ያ ጨ ሱ እ ድ ሜ ዎ ስ ን ት ነ በ ር ?	እ ድ ሜ በ ዓ መ ት -----	
ሐ 04	ሲ ጋ ር ማ ጨ ስ ከ ጀ መ ሩ ም ን ያ ህ ል ጊ ዜ ሆ ኗ ል ?	ዓ መ ት ----- ወ ር -----	

ሐ05	በ አ ማካ ይ ምን ያ ህ ል ሲ ጋ ር በ ቀ ን /በ ሳ ምን ት ያ ጨሳ ሉ ?	1.በ ቀ ን -------- 2.በ ሳ ምን ት -----	
ሐ06	በ አ ሁ ን ስ ዓ ት ሺ ሻ ያ ጨሳ ሉ ?	1.አ ዎ 2.አ ይ ደ ለ መ	
ሐ07	በ ቀ ን ምን ያ ህ ል ጊ ዜ (session) ሺ ሻ ያ ጨሳ ለ ?	1.በ ቀ ን -------- 2.በ ሳ ምን ት -----	

አ ሁ ን የ ተ ወ ሰ ኑ ጥ ያ ቄ ዎ ች በ አ ል ኮ ል መ ጠ ዙ ሪ ያ እ ጠ ይ ጠ ይ ቆ ታ ለ ሁ .			
ጥ ያ ቄ ቁ ጥ ር	ጥ ያ ቄ	የ ጥ ያ ቅ ው ም ላ ሽ	ይ ለ ፍ
ሐ08	መ ቼ ም ቢ ሆ ን ለ አ ብ ነ ት ቢ ር ፤ ጠ ላ ፤ ቦ ር ዴ ፤ ጠ ጅ ፤ አ ራ ቄ ፤ ወ ይ ን ወ ዘ ተ ተ ጠ ቀ ማ ል ?	1.አ ዎ 2.አ ይ ደ ለ መ . መ ል ሱ አ ይ ደ ለ ም ከ ሆ ነ ወ ደ ይ ለ ፉ	
ሐ09	በ ለ ፈ ው 1 ዓ መ ት ው ስ ጥ በ ስ ታ ን ዳ ር ድ (በ ጠ ር ሙ ስ /300ሚ ሊ ሊ ት ር) መ ሰ ረ ት ቢ ያ ን ስ በ ቀ ን ም ን ያ ህ ል አ ል ኮ ል ይ ጠ ጣ ሉ ?	በ የ ቀ ኑ ፡ 1 በ ሳ ምን ት ው ስ ጥ 5-6 ቀ ን ፣ 2 በ ሳ ምን ት ው ስ ጥ 3-4 ቀ ን ፣ 3 በ ሳ ምን ት ው ስ ጥ 1-2 ቀ ን ፣ 4 በ ወ ር ው ስ ጥ 1-3 ቀ ን በ 6ወ ር ው ስ ጥ በ ት ሹ 1ቀ ን	
ሐ10	በ ለ ፈ ው 1ወ ር ው ስ ጥ አ ል ኮ ል ተ ጠ ቅ ማ ል ?	1.አ ዎ 2.አ ይ ደ ለ መ . መ ል ሱ አ ይ ደ ለ ም ከ ሆ ነ ወ ደ	

		መ ክ ፍ ል ይ ለ ፉ	
ሐ 11	በ ለ ፈ ው 1ወ ር ውስ ጥ በ ስ ታ ን ዳ ረ ድ መስ ረ ት በ አ ማ ካ ይ በ አ ን ድ ጊ ዜ ም ን ያ ህ ል አ ል ኮ ል ተ ጠ ቀ ማ ል ?	አ ማ ካ ይ ቁ ጥ ር ---------- -----	
ሐ 12	በ ለ ፈ ው 7 ቀ ና ት ውስ ጥ ም ን ያ ህ ል አ ል ኮ ል በ የ ቀ ኑ ተ ጠ ቀ ማ ል ?	ስ ኞ -----ማ ክ ስ ኞ ----- ዕ ር ብ -- ሀ ሙስ ----- አ ር ብ -----ቅ ዳ ሜ----- እ ሁ ድ -----	

ቀ ጥ ሎ ያ ሉ ት መ ጠ ይ ቆ ች ስ ለ ጫ ት ይ ሆ ና ል			
መ 01	ጫ ት ተ ጠ ቅ መ ው/ቅ መ ው/ያ ወ ቅ ሉ /	አ ዎ ---1 አ ላ ው ቅ ም ----2 ፡ ተ ጠ ቅ መ ው የ ማ ያ ው ቁ ከ ሆ ነ ወ ደ ክ ፍ ል ሠ ይ ሂ ደ	
መ 02	መ ጀ መ ሪ ያ ጫ ት ሲ ጀ ም ሩ እ ድ ሜ ዎ ስ ን ት ነ በ ር	እ ድ ሜ በ ዓ መ ት ---------- አ ያ ው ቁ ም	
መ 03	ባ ለ ፈ ው አ ን ድ አ መ ት ጊ ዜ ው ስ ጥ በ ም ን ያ ህ ል ጊ ዜ እ የ ቃ ሙ ነ በ ር ?	በ የ ቀ ኑ ----------1 በ ሳ ም ን ት ከ 5 እ ስ ከ 6 ቀ ን ---2 በ ሳ ም ን ት ከ 1 እ ስ ከ 4 ቀ ን ----3 በ ወ ር ከ 1 እ ስ ከ 3 ቀ ን --------4 በ ወ ር ከ 1 ጊ ዜ በ ታ ች ----------5	
መ 04	ባ ለ ፈ ው አ ን ድ ወ ር ጊ ዜ ው ስ ጥ በ ም ን ያ ህ ል ጊ ዜ እ የ ቃ ሙ ነ በ ር ?	በ የ ቀ ኑ ----------1 በ ሳ ም ን ት ከ 5 እ ስ ከ 6 ቀ ን ---2 በ ሳ ም ን ት ከ 1 እ ስ ከ 4 ቀ ን ----3 በ ወ ር ከ 1 እ ስ ከ 3 ቀ ን --------4 በ ወ ር ከ 1 ጊ ዜ በ ታ ች ----------5	
መ 05	በ ሚ ቅ ሙ በ ት ወ ቅ ት ሲ ጋ ራ ያ ጨ ሳ ሉ ?	አ ዎ ---------1 አ ላ ጨ ስ ም -----2	
መ 06	ጫ ት ከ ቃ ሙ በ ኋ ላ አ ል ኮ ል ይ ጠ ጣ ሉ ?	አ ዎ ----------1 አ ል ጠ ጣ ም -------2-----ወ ደ E ይ ሂ ዱ	
መ 07	ጫ ት ቅ መ ው አ ል ኮ ል የ ሚ ጠ ጡ ት በ የ ስ ን ት ጊ ዜ ነ ው?	ሁ ሌ ም ----------1 አ ል ፎ አ ል ፎ ----------2	

		በ ጣ ም ቆ ይ ቶ ቆ ይ ቶ -------3	

ቀ ጣ ይ ጥ ያ ቄ ዎ ች በ አ መ ጋ ገ ብ ስ ር ዓ ታ ች ን አ ት ክ ል ት እ ና ፍ ራ ፍ ሬ ዎ ች ን ም ን ያ ኽ ል እ ን ጠ ቀ ማ ለ ን ? በ ሚ ለ ው ዙ ሪ ያ የ ሚ ያ ተ ኩ ር ይ ሆ ና ል ። በ አ ካ ባ ቢ ያ ች ን የ ሚ ገ ኙ ፍ ራ ፍ ሬ ዎ ች ን ና አ ት ክ ል ቶ ች ን እ ን ደ ም ሣ ሌ እ ን ጠ ቀ ማ ለ ን ። እ ያ ን ዳ ን ዱ ሳ ህ ን የ ም ን ወ ስ ደ ው ን የ አ ት ክ ል ት ና ፍ ራ ፍ ሬ መ ጠ ን ያ ሳ ያ ል ። ጥ ያ ቄ ዎ ች ን ሲ መ ል ሱ አ ይ ነ ተ ኛ መ ደ በ ኛ አ ን ድ ሳ ም ን ት ታ ሳ ቢ ባ ደ ረ ገ መ ል ኩ እ ን ደ ወ ካ ይ ሳ ም ን ት በ መ ው ሰ ድ ይ ሆ ና ል ።

ክ ፍ ል ሠ አ መ ጋ ገ ብ			
ጥ . ቁ	ጥ ያ ቄ ዎ ች	አ ማ ራ ጭ ም ላ ሾ ች	
ሠ 01	በ አ ን ድ ሳ ም ን ት ም ን ያ ኽ ል ቀ ና ት ን ፍ ራ ፍ ሬ ይ መ ገ ባ ሉ ?	የ ቀ ና ት ቁ ጥ ር አ ላ ው ቅ ም ም ላ ሽ ዎ የ ለ ም ከ ሆ ነ ወ ደ ጥ ያ ቄ ሠ 03 ይ ሻ ገ ሩ	
ሠ 02	በ አ ን ደ ቀ ን ው ስ ጥ ም ን ያ ህ ል ጊ ዜ ፍ ራ ፍ ሬ ይ መ ገ ባ ሉ ? (እ ራ ት ፣ ቁ ር ስ ፣ ም ሳ ፣ መ ክ ሳ ስ ካ ለ)	ጊ ዜ ው በ ቁ ጥ ር አ ላ ው ቅ ም	
ሠ 03	በ አ ን ድ ሳ ም ን ት ም ን ያ ኽ ል ቀ ና ት ን አ ት ክ ል ቶ ች ን ይ መ ገ ባ ሉ ?	የ ቀ ና ት ቁ ጥ ር አ ላ ው ቅ ም	
ሠ 04	በ አ ን ደ ቀ ን ው ስ ጥ ም ን ያ ህ ል ጊ ዜ አ ት ክ ል ቶ ች ን ይ መ ገ ባ ሉ ? (እ ራ ት ፣ ቁ ር ስ ፣ ም ሳ ፣ መ ክ ሳ ስ ካ ለ)	ጊ ዜ ው በ ቁ ጥ ር አ ላ ው ቅ ም	
የ ገ በ ታ ጨ ው			

ቀጣይ ጥያቄዎች በአመጋገብ ስርዓታችን ምን ያክል የጨው የገበታ ጨው እንጠቀማለን ?በሚለው ዙሪያ የሚያተኩር ይሆናል። ጥያቄዎቹ በቤቶ የጨው አጠቃቀም ምን እንደሚመስል ፣ የጨው ይዘታቸው ከፍ ያሉ የተቀነባበሩ ምግቦች በተመለከተና የጨው አጠቃቀማችን እንዴት ሊሆን እንደሚገባ ሁሉ ይዳስሳል			
ሠ 05	ከመመገብዎ በፊት ጨው ወይም የምግብ ማጣፈጫ ይጠቀማሉ ?	ሁሌ 1 ብዙ ግዜ 2 አንዳንድ ግዜ 3 አልፎ አልፎ 4 በፍፁም 5 አላውቅም	
ሠ 06			
	በቤትዎ ምን ያህል ጨው ወይም የምግብ ማጣፈጫ (ሱጎ)ምግብ ለማብሰል ወይም ለማዘጋጀት ይጠቀማሉ ?	ሁሌ 1 ብዙ ግዜ 2 አንዳንድ ግዜ 3 አልፎ አልፎ 4 በፍፁም 5 አላውቅም	
ሠ 07	ምን ያህል ግዜ የተቀነባበሩ ምግቦችን የታሸጉ ምግቦችን ይጠቀማሉ ?	ሁሌ 1 ብዙ ግዜ 2 አንዳንድ ግዜ 3 አልፎ አልፎ 4 በፍፁም 5 አላውቅም	
ሠ 08	ምን ያህል ጨው /የ ምግብ ማጣፈጫ ሱጎ ይጠቀማሉ ?	በጣም ብዙ 1 ትክክለኛውን መጠን 2 በጣም ጥቂት 3 አላውቅም	
ሠ 09	በአመጋገብ ስርዓታችን ከፍተኛ የጨው መጠን መጠቀም ለጤና ችግር ይፈጥራል ብለው ያስባሉ ?	አዎ 1 አደለም 2 አላውቅም	
ቀጣይ ጥያቄዎች በቤት ውስጥ ምግብ ዝግጅት ወቅት ብዙ ግዜ የምንጠቀምበት የቅባት አይነት እንዲሁም ከቤት ውጭ ከተዘጋጁ ምግቦችን ከመጠቀም ጋር በተያያዘ ይሆናል።			

ሠ 10	በ ቤ ት ው ስ ጥ ም ግ ብ ሲ ያ ዘ ጋ ጁ ም ን አ ይ ነ ት ዘ ይ ት ይ ጠ ቁ ማ ሉ ? (ለ መ ግ ለ ጽ በ ማ ሸ ጊ ያ ው ላ ይ ያ ለ ው ን ያ ን ብ ቡ) (ቀ ላ ቅ ለ ው የ ሚ ጠ ቀ ሙ ከ ሆ ነ ብ ዙ ግ ዜ የ ሚ ጠ ቀ ሙ ት ን ይ ጥ ቀ ሱ)	የ አ ት ክ ል ት ዘ ይ ት 1 ቅ ቤ 2 የ ዳ ቦ ቅ ቤ 3 የ ሚ ረ ጋ ዘ ይ ት 4 ሌ ላ ም ካ ለ 5 የ ት ኛ ው ን ም አ ል ጠ ቀ ም ም 6 አ ላ ው ቅ ም 7	

ክ ፍ ል ረ :አ ካ ላ ዊ እ ን ቅ ስ ቃ ሴ

በ ቀ ጣ ይ በ ተ ለ መ ደ ው ሳ ም ን ት ው ስ ጥ የ ተ ለ ያ ዩ የ አ ካ ል ብ ቃ ት እ ን ቅ ስ ቃ ሴ ዓ ይ ነ ቶ ች ን ለ ማ ከ ና ወ ን ስ ለ ሚ ያ ሳ ል ፉ ት ጊ ዜ እ ጠ ይ ቅ ዎ ታ ለ ሁ ፡ ፡ እ ባ ክ ዎ ን እ ራ ስ ዎ ን አ ካ ላ ዊ እ ን ቅ ስ ቃ ሴ ያ ለ ው ሰ ው አ ድ ር ገ ው ባ ይ ቆ ጥ ሩ ም ለ እ ነ ዚ ህ ጥ ያ ቄ ዎ ች መ ል ስ ይ ስ ጡ ፡ ፡

ሥ ራ ለ መ ሥ ራ ት ስ ላ ሳ ለ ፉ ት ጊ ዜ በ መ ጀ መ ሪ ያ ያ ስ ቡ ፡ ፡ ሥ ራ መ ሥ ራ ት ያ ለ ብ ዎ ት እ ን ደ ደ መ ወ ዝ ወ ይ ም ያ ለ ክ ፍ ያ ሥ ራ ፣ ጥ ና ት / ሥ ል ጠ ና ፣ የ ቤ ት ው ስ ጥ ሥ ራ ዎ ች ፣ ም ግ ብ / ሰ ብ ሎ ች መ ሰ ብ ሰ ብ ፣ ማ ጥ መ ድ ወ ይ ም ም ግ ብ ማ ደ ን ፣ ሥ ራ መ ፈ ለ ግ ፡ ፡ [አ ስ ፈ ላ ጊ ከ ሆ ነ ሌ ሎ ች ም ሳ ሌ ዎ ች ን ያ ስ ገ ቡ]። የ ሚ ከ ተ ሉ ት ን ጥ ያ ቄ ዎ ች በ ሚ መ ል ሱ በ ት ጊ ዜ 'በ ጠ ን ካ ራ -ስ ሜ ት እ ን ቅ ስ ቃ ሴ ዎ ች ' ከ ባ ድ አ ካ ላ ዊ ጥ ረ ት የ ሚ ጠ ይ ቁ እ ና በ አ ተ ነ ፋ ፈ ስ ወ ይ ም በ ል ብ ም ት ላ ይ ከ ፍ ተ ኛ ጭ ማ ሪ የ ሚ ያ ደ ር ጉ እ ን ቅ ስ ቃ ሴ ዎ ች ና ቸ ው ፣ 'በ መ ካ ከ ለ ኛ -ስ ሜ ት እ ን ቅ ስ ቃ ሴ ዎ ች ' መ ጠ ነ ኛ አ ካ ላ ዊ እ ን ቅ ስ ቃ ሴ የ ሚ ጠ ይ ቁ እ ና ት ን ፋ ሽ ወ ይ ም የ ል ብ ም ት በ አ ነ ስ ተ ኛ እ ን ዲ ጨ ም ር የ ሚ ያ ደ ር ጉ እ ን ቅ ስ ቃ ሴ ዎ ች ና ቸ ው

ጥ ያ ቄ .ቁ	ጥ ያ ቄ ዎ ች	የ ም ላ ሽ ም ር ጫ ዎ ች	ዝ ለ ል (ይ ህ ጥ ያ ቄ ይ ለ ፈ ኝ)

ሥራ			
ረ 01	እ ር ሶ ሰ ያ ቋ ር ጡ ቢ ያ ን ስ ለ 20 ደ ቂ ቃ ዎ ች ከ ባ ድ የ ት ን ፋ ሽ ና የ ል ብ ም ት ፍ ጥ ነ ት ን የ ሚ ጨ ም ሩ ሥ ራ ዎ ች ን እ ን ደ [ከ ባ ድ ሽ ከ ሞ ች ን መ ሸ ከ ም ወ ይ ም ማ ን ሳ ት ፣ መ ቆ ፈ ር ወ ይ ም የ ግ ን ባ ታ ሥ ራ] ይ ሰ ራ ሉ ?	'አ ዎ ' 1 'አ ይ ደ ለ ም 2 የ እ ር ሶ መ ል ሶ አ ይ ደ ለ ም ከ ሆ ነ ወ ደ ረ 04 ይ ሂ ዱ	
ረ 02	እ ር ሶ ከ ሚ ሰ ሯ ቸ ው ስ ራ ዎ ች መ ካ ከ ል ከ ባ ድ የ ት ን ፋ ሽ ና የ ል ብ ም ት ፍ ጥ ነ ት ን የ ሚ ጨ ም ሩ ሥ ራ ዎ ች ን በ ሳ ም ን ት ስ ን ት ቀ ና ት ን ይ ሰ ራ ሉ ?	የ ቀ ኖ ች ብ ዛ ት	
ረ 03	በ አ ን ድ ቀ ን ው ስ ጥ ም ን ያ ክ ል ጊ ዜ ን (ሰ ዓ ት) በ ከ ባ ድ ስ ራ ላ ይ ይ ቆ ያ ሉ (ይ ሆ ና ሉ)?	ሰ ዓ ታ ት : ደ ቂ ቃ ዎ ች	
ረ 04	እ ር ሶ ሰ ያ ቋ ር ጡ ቢ ያ ን ስ ለ 20 ደ ቂ ቃ ዎ ች አ ነ ስ ተ ኛ የ ት ን ፋ ሽ ና የ ል ብ ም ት ፍ ጥ ነ ት ን የ ሚ ጨ ም ሩ መ ካ ከ ለ ኛ ሥ ራ ዎ ች ን እ ን ደ ፈ ጣ ን የ እ ግ ር ጉ ዞ ወ ይ ም ቀ ላ ል ሽ ከ ሞ ች ን ይ ሰ ራ ሉ ?	አ ዎ ' 1 'አ ይ ደ ለ ም 2 የ እ ር ሶ መ ል ሶ አ ይ ደ ለ ም ከ ሆ ነ ወ ደ ረ 07 ይ ሂ ዱ	
ረ 05	እ ር ሶ ከ ሚ ሰ ሯ ቸ ው ስ ራ ዎ ች	የ ቀ ኖ ች ብ ዛ ት	

	መካከል አነስተኛ የትንፋሽና የልብ ምት ፍጥነትን የሚጨምሩ ሥራዎችን በሳምንት ስንት ቀናትን ይሰራሉ?		
ረ 06	በአንድ ቀን ውስጥ ምን ያክል ጊዜን (ሰዓት) በመካከለኛ ስራላይ ይቆያሉ (ይሆናሉ)?	ሰዓታት :ደቂቃዎች	
የመዝናኛ እንቅስቃሴዎች በተመለከተ			
የሚቀጥሉት ጥያቄዎች ቀደም ሲል የጠቀሷቸውን የስራ እና የትራንስፖርት እንቅስቃሴዎች አያካትቱም ፡ ፡ አሁን ስለ ስፖርት ፣ የአካል ብቃት እና የመዝናኛ እንቅስቃሴዎች (መዝናኛ)ልጠይቅዎ እፈልጋለሁ ፣ [ተዛማጅ ቃላትን ያስገቡ]			
ረ 07	ያለማቋረጥ ለ 20ደቂቃዎች የመተንፈስ ወይም የልብ ምት በከፍተኛ የሚጨምሩ እንደ [ሩጫ ወይም እግር ኳስ]ኃይለኛ ኃይለኛ ስፖርቶችን ፣ የአካል ብቃት እንቅስቃሴዎችን ወይም የመዝናኛ (የቅንጦት) እንቅስቃሴዎችን ያደርጋሉ?	'አዎ' 1 'አይደለም 2 የእርሶ መልሶ አይደለም ከሆነ ወደ ረ 13 ይሂዱ	
ረ 08	በሳምንት ለስንት ቀናት	የቀኖች ብዛት	

	ኃይለኛ ኃይለኛ ስፖርቶችን ፣ የአካል ብቃት እንቅስቃሴዎችን ወይም የመዝናኛ (የቅንጦት) እንቅስቃሴዎችን ያደርጋሉ?		
ረ 09	በቀን ለምን ያህል ጊዜ ኃይለኛ ኃይለኛ ስፖርቶችን ፣ የአካል ብቃት እንቅስቃሴዎችን ወይም የመዝናኛ እንቅስቃሴዎችን እያሰሩ ይቆያሉ?	ሰዓታት :ደቂቃዎች	
ረ 10	ያለማቋረጥ ቢያንስ ለ 20 ደቂቃዎች አነስተኛ አተነፋፈስ ወይም የልብ ምት እንዲጨምር የሚያደርጉ እንደ ፈጣን የእግር ጉዞ ፣ [ብስክሌት መንዳት ፣ መዋኘት እና ቮሊቦል]መካከለኛ ስፖርቶችን ፣ የአካል ብቃት እንቅስቃሴዎችን ወይም የመዝናኛ እንቅስቃሴዎችን ያደርጋሉ?	'አዎ ' 1 'አይደለም 2 የእርሶ መልሶ አይደለም ከሆነ ወደ ረ 16 ይሂዱ	
ረ 11	በሳምንት ስንት ቀናትን	የቀኖች ብዛት	

	መካከለኛ ስፖርቶችን ፣ የአካል ብቃት እንቅስቃሴዎችን ወይም የመዝናኛ እንቅስቃሴዎችን ያደርጋሉ?		
ረ 12	በቀን ምን ያህል ጊዜ መካከለኛ ስፖርቶችን ፣ የአካል ብቃት እንቅስቃሴዎችን ወይም የመዝናኛ እንቅስቃሴዎችን እየሰሩ ይቆያሉ?	ሰዓታት :ደቂቃዎች	
የመቀመጥ ሁኔታ በተመለከተ			
የሚከተለውጥያቄ በሥራ ቦታ ፣ በቤት ውስጥ ፣ የሆነ ቦታ በመሄድና እና መመለስ ፣ ወይም ከጓደኞች ጋር በጠረጴዛ ላይ ለመቀመጥ ፣ ከጓደኞች ጋር በመቀመጥ ፣ በመኪና ጉዞ ፣ በአውቶቡስ ጉዞ ፣ በባቡር ጉዞ ፣ በንባብ ፣ ካርድ በመጫወት ወይም ቴሌቪዥን በመመልከት ማሳለፍን የተመለከተ ጥያቄ ነው። ነገር ግን ለመተኛት የሚያጠፉውን ጊዜ አያካትትም።			
ረ 13	በየቀኑ ተቀምጠው ወይም ተጋድመው ምን ያህል ጊዜ ያጠፋሉ?	ሰዓታት :ደቂቃዎች	

ከዚህ በፊት ከሚከተሉት ህመሞች የገጠመት መሆኑንና ምን ህክምና እንዳገኑ ስለመጠየቅ

ፍልሰ፣ የህክምና ታሪክ በተመለከተ
ደም ግፊት በተመለከተ

.no.	ያ ቄ	ማራ ጭ መል ሶ ች	
01	ለ ፈ ው 2 ሳ ምን ት ወ ይ ም አ ን ደ ር ቄ ም ከ ዚ ያ በ ላ ይ ባ ለ ው ጊ ዜ ደ ም ግ ፊ ት መ ድ ሃ ኒ ት በ ጤና ለ ሙ ያ ታ ዞ ሎ ት ወ ስ ደ ዋ ል ወ ይ ?	ዎ 1 ይ ደ ለ ም 2 መ ል ሱ ይ ደ ለ ም ከ ሆ ነ ወ ደ 02 ለ ፉ	
ስ ኳ ር በ ሽ ታ ን ሁ ኔ ታ በ ተ መ ለ ከ ተ			
02	ለ ፈ ው 2 ሳ ምን ት ወ ይ ም አ ን ደ ር ቄ ም ከ ዚ ያ በ ላ ይ ባ ለ ው ጊ ዜ ስ ኳ ር በ ሽ ታ መ ድ ሃ ኒ ት በ ጤና ለ ሙ ያ ታ ዞ ሎ ት ወ ስ ደ ዋ ል ወ ይ ?	ዎ 1 ይ ደ ለ ም 2 መ ል ሱ ይ ደ ለ ም ከ ሆ ነ ወ ደ 03 ለ ፉ	
ደ ም ቅ ባ ት ሁ ኔ ታ ን በ ተ መ ለ ከ ተ			
	ያ ቄ	ል ስ	
03	ለ ፈ ው 2 ሳ ምን ት ወ ይ ም አ ን ደ ር ቄ ም ከ ዚ ያ በ ላ ይ ባ ለ ው ጊ ዜ ደ ም ቅ ባ ት (ኮ ሌ ስ ት ሮ ል ከ ፍ ተ ኛ ኗ ል በ ሚል) በ ሽ ታ ማ ን ኛ ውን ም አ ፍ የ ሚ ወ ሰ ድ መ ድ ሃ ኒ ት ጤና ባ ለ ሙ ያ ታ ዞ ሎ ት ወ ስ ደ ዋ ል ይ ?	ዎ 1 ይ ደ ለ ም 2 መ ል ሱ ይ ደ ለ ም ከ ሆ ነ ወ ደ 04 ለ ፉ	
ሴ ቶ ች ብ ቻ ስ ለ ማ ህ ፀ ን ካ ን ሰ ር በ ተ መ ለ ከ ተ			
ሚ ከ ተ ሉ ት ጥ ያ ቄ ዎ ች ስ ለ ማ ህ ፀ ን ካ ን ሰ ር በ ተ መ ለ ከ ተ በ መ ከ ላ ከ ል ፣ ም ር መ ራ ተ ለ ያ ዩ መ ን ገ ድ መ ደ ረ ጉ ን ይ ሆ ና ል ፣ .			
	ያ ቄ	ማ ራ ጭ መ ል ስ	
04	ማ ህ ፀ ን በ ር ካ ን ሰ ር ም ር መ ራ ድ ር ገ ው ያ ቃ ሉ	ዎ 1 ይ ደ ለ ም 2 ን እ ን ደ ተ ደ ረ ገ ላ ቅ ም 3	

Annex V Questioner Siltigna Version

በቅበት ያፍቴ መቃም ሆስፒታል ውስጥ በአዋቂ መርመራ ጎልጌ ሊክምና በመጡ ታካማሞ ደር በሰብነት ውስጥ የሞረ ቂጨዋ የኮሌስትሮል ጭምት፤ የደም ግፊ ዲበሎትዋ የስኳር ቂጨዲበሎትዋ ገነገናምሩክቦ ያለይሙምካትቸ ቲላለፎት ያቄብሎን መሳሶ ደር የዳሰሳ ሙጣሎላሶት የስናጀ ሬሬሰ ጨም ያስቡያን ቅፅ

ጎልጌ A፡ አመሰብ -ስናኡመት ማቻያዮ			
የሱሊ ኢልቅ	ሱልቸ	ያትማጣሪ ጀዋብቸ	ሻይድነት
A01	መትላዬ ኢልቅ ኮድ ኢትሜላን	መትላዬ ኢልቅ _____	
A02	ሊጋ (ሊጂ/ገረድ ባሌ ኢከትቤን	ሊጄቦነ -1 ገረድቦነ -2	
A03	የሳሉይ ኡምር	ኡምር ከ ባአ ይዶ ----	
A04	የሳሉይ ዲን (ሀይማኖት)	9. ሙስሊም 10. ኦርቶዶክስ 11. ጴንጤ 12. ገነ አይነት	
A05	የተሣታፊ ያአሸር መቃም	11. ኪተቦት ዋ ቂሮት ያቀትላን 12. ኪተቦት ዋ ቂሮት መጥ ያቀትላን 13. የ ፍቴ መቃም (ጎልጌ 1-8) 14. ሆሽትለኜ መቃም (9-12) 15. ኮሌጅዋ ታቲ ደር	
A06	የተሣታፊ ኢነብርቢያን አዝጋግ	5. ገጠር 6. ከተማ	
A07	የተሣታፊ የብተር ሃለት (አኩ)	9. ያገባ/ት 10. የላገበ/ት 11. የፈተ/ት 12. መውት የላዬይ	
A08	የተሣታፊ የብል ሃለት	17. አራሽ 18. ነጋዴ 19. ደራሲ 20. የመንግስት ብለተኘ 21. የግል/NGO ብለተኘ 22. የጋር ባልቴት	

		23. ያ አ ያ ም ብ ለ ተ ኛ 24. ገ ነ (የ ደ በ ል)----------	

አ ኩ ላ አ በ ሮ ስ ያ ለ ይ ቋ ሚ ዱ ኒ የ ኢ ት ም ሌ ከ ታ ን ሱ ል እ ሳ ል ነ ማ ን ፡ ፡

ን ል ጌ B ፡ የ ዱ ኒ የ ሃ ለ ት ኢ ጩ ቅ ማ ን ሬ ሬ ሰ			
ል ቅ .	ሱ ል ቸ	አ ዎ በ ሆ ነ	አ ሎ ን በ ሆ ነ
	ለ አ ድ አ በ ሮ ስ ኢ ት ኬ ተ ሎ ነ ይ ሙ ት ቸ ች ኣ ሉ ይ ወ ይ ? (ጀ ወ ብ ከ ቂ በ ይ)		
B01	የ ኮ ሮ ን ቴ ተ ፈ ያ ጂ ን ኩ ም ወ ይ ?	1	0
B02	ያ ሻ ን ቴ ሌ ቪ ዢ ን አ ለ ወ ይ ?	1	0
B03	ፍ ሪ ጅ አ ለ ወ ይ ?	1	0
B04	ጠ ረ ጴ ዛ አ ለ ወ ይ ?	1	0
B05	ወ ን በ ር አ ለ ወ ይ ?	1	0
B06	አ ል ጋ ዋ የ ጥ ጥ /የ እ ስ ፖ ን ጅ / የ እ ሰ ፕ ሪ ን ግ ት ራ ስ ጊ ነ አ ለ ወ ይ ?	1	0
B07	የ ኮ ሮ ን ቴ ም ጣ ድ አ ለ ወ ይ ?	1	0
B08	ቢ ሽ ክ ሊ ሊ ት አ ለ ወ ይ ?	1	0
B09	ዶ ቅ ዶ ቄ / ባ ጃ ጅ አ ለ ወ ይ ?	1	0
B10	መ ኪ ና አ ለ ወ ይ ?	1	0
B11	በ በ ሂ ም ኢ ጎ ቱ ያ ን ጋ ሪ አ ለ ወ ይ ?	1	0
B12	በ ኢ ን ጅ ባ አ ቅ ላ ቅ ሎ ት ዮ ጫ ን መ ይ ኢ ድ ጋ ለ ሎ ን ወ ይ ?	1	0
B13	ለ ገ ግ የ መ ኖ ሪ የ ጋ ር የ ባ ን በ መ ይ አ ለ ወ ይ ?	1	0
B14	ዩ መ ት የ ቦ ኖ መ ይ ኢ ድ ጋ ለ ሎ ን ወ ይ ?	1	0
B15	የ ለ ገ ዶ መ ዬ ኢ ድ ጋ ለ ሎ ን ወ ይ	1	0
B16	የ ብ ቆ መ ዬ ኢ ድ ጋ ለ ሎ ን ወ ይ ?	1	0
B17	አ በ ሮ ሳ ሙ የ ጡ ሃ ራ ጋ ር	1	0

	ኢድ ጋ ለ ሎን ወ ይ ?			
B18	ለ በ ሮ ሲ ወ ሻ ይ ር ሰ ት ደ ች አ ለ ይ ወ ይ ?	1		0
B19	ተ ኡ መ ቲ ወ ሻ ሾ ቢ ያ ን ሰ ለ አ ድ ኒ ሙ ቢ ዮ ን የ ባ ን ክ አ ነ ግ ነ የ እ ር ክ ተ ኜ (ኦ ሞ) ፋ ይ ና ን ስ የ ህ ር ሃ ሬ የ ሂ ሳ ብ ኢ ል ቅ አ ለ ወ ይ ?	1		0
	ለ ኣ በ ሮ ሲ ቢ ት ኬ ተ ሎ ነ ይ በ ሂ ም ች ው ስ ጥ ኣ ይ ታ ይ ኣ ሉ (ኣ ቂ ብ)	ኣ ዎ	ኣ ሎ ነ	ስ ት በ ኢ ል ቅ ት ከ ተ ብ
B20	ከ ራ ብ ቸ ኣ ሉ ወ ይ ?	1	0	
B21	ላ ም ቸ ኣ ሉ ወ ይ ?	1	0	
B22	ፈ ረ ስ / በ ቅ ሎ / ኡ ማ ር ኣ ሉ ወ ይ ?	1	0	
B23	ፌ ቅ ቸ /ጠ ይ ቸ ኣ ሉ ወ ይ ?	1	0	
B24	ኢ ን ጫ ቆ ኣ ለ ወ ይ ?	1	0	

የ ኣ ህ ላ ቅ መ ቃ ጫ ጮ

ጎ ል ጌ C ፤ ኣ ኩ - - - ሱ ል ቸ ስ ገ ረ ቤ ደ በ እ ሰ ለ ሃ ው .			
የ ሱ ል ኢ ል ቅ	ሱ ል	ፌ ሰ ሼ ጀ ዋ ብ	ይ ለ ፍ
C 0 1	ባ ኩ ይ ሳ ት ስ ገ ረ ካ ላ ሎ ተ ጩ ሰ ሀ ወ ይ	1 ኣ ው 2.ጀ ዋ ባ ሀ ኣ ሎ ነ በ ሆ ነ ፎ ኖ ኢ ለ ፍ	
C 0 2	ጀ ዋ ባ ሀ ኣ ው በ ሆ ነ C01ባ ያ ም ስ ተ ስ ገ ረ ተ ጩሳ ሀ ?	1. ተ 1 - 2. ተ 3-5 3. ተ 6-10 4. ተ 10 ደ ር	
C 0 3	ጀ ዋ ባ ሀ ኣ ው በ ሆ ነ C02ስ ገ ረ ኣ ጪ ሶ ት በ ጀ መ ር ከ ም ስ ተ ወ ከ ተ ሆ ነ ሃ ን	ኣ ይ ዶ - - - - - ወ ሪ -----	
C 0 4	ባ ኩ ይ ሳ ት ሺ ሸ ተ ጩ ሰ ሀ ወ ይ ?	1 . ኣ ው 2.ኣ ሎ ነ	
C 0 5	ጀ ዋ ባ ሀ ኣ ው በ ሆ ነ C04ም ነ ቂ ጨ ተ ጩ ሰ ሀ ባ ያ ም ም ስ ተ ስ ገ ረ ተ ጩ ሳ ሀ ?	1. በ የ ኣ ያ ም ቀ 2. 4-6 ኣ ያ ም በ ሳ ም ት	

		3. 2-3አያም በሳምት 4. በየሳምትክ	
፤ አኩ - - - ሱልች ስገረ ቤደበ እሰለሃው.			
C06	ስረውለባይትክ ቢረ፤ ጠለ፤ ቦርዴ፤ ብርዘ፤ አረፄ፤ ካሌሰቼሀ ትሸላሀ ወይ?	1. አ አሎነ .አሎነ በሆነ D ፎኖ ኢለፍ	
C07	ባለፈይ አይዶ ውስጥ 01ሹጉጠ (300ሚሊሌትሮ)ምስተተሰችናረ?	1. በ ሰ አ ያ ም 2. በሳምት ውስጥ 5-6አያም 3. በሳምትውስጥ 3-4አያም 4. በሳምንትውስጥ 1-2አያም 5. ቦሪ ውስጥ በጤቲክ 1አያም	
C08	ባለፈይ አድወሪ ክቲካለ ሰቼሀ ትሸላ ወይ?	2. አ አሎነ .አሎነ በሆነ D ፎኖ ኢለፍ	
C09	ባለፈይ 1ወሪ ውስጥ መምረ ሀሰነት(300ሚ.ሌትሮ)በጉተኜ በአደጊነ ምስተሹጉጠ ክቲክለ ሰቼሀ?	ጉተኜ በኢል - - - - - - - - - - -	
ኃልጌ D፤ ኢትኬተሎነይ ሱልቾ ጨተ ቤደበ ዮናን			
D01	ጨተ ቀመሀ ትሸላሀ ወይ	1. አ 2. አልቀምኮ፡ የልቀምክ በሆ	
D02	የD01ጁዋብ አውበሆነ ባለፈይ 1አይዶ ውስጥ ምስተ ወክተ ቀምክ?	1. በ የ አ ያ ም ቀ 2. በሳምት ተ5-6አያም 3. በሳምት ተ1-4አያም 4. ቦሪ ተ1-3አያም	
D03	ባለፈይ 1ወሪ ውስጥ በምስ ቀክተ ትቅምናረ?	5. በ የ አ ያ ም ቀ 6. በሳምት ተ5-6አያም 7. በሳምት ተ1-4አያም 8. ቦሪ ተ1–3አያም	
D04	በቀምክ ወክት ስገረ ተጩሰኀ ወይ?	1. አ 2እለዋጩሰ	
D	ብትቂምቢያ ወቅት ኮካኮላ፤ ፔፐሲ፤ ሚሪንዳ ተሰቻ ወይ	2. አ 1. እለዋጩሰ	

D	የ D ጀ የ ብ አ ው በ ሂ ነ መ ል ሶ አ ች ከ ሆ ነ በ አ ን ድ ኒ ቴ ሞ ን ታ ህ ል በ ላ ሳ (በ ጠ ር ሙ) 300 ሚ.ሊ ይ ጠ ቀ ማ ል ?	1. 1 - 2 በ ጠ ር ሙ 2. ከ 3-4 በ ጠ ር ሙ ሶ 3. 5 እ ና ከ ዚ ያ በ ላ ይ	
D 05	ጨ ት በ ከ ም ከ ዞ ፍ ከ ቲ ከ ለ ተ ሰ ቻ ህ ወ ይ ?	1. አ 2. እ ለ ው ሰ ች ጀ ዋ ባ ህ 2 በ ሆ ነ	
D 06	የ D 05 ጀ የ ብ አ ው በ ሆ ነ ጨ ት ቀ ም ካ ኔ በ ም ስ ት ወ ከ ት ን ?	1. ሁ ለ ም ጊ ነ 2. አ ለ ፈ አ ለ ፋ ኔ 3. ተ ስ ር ም ቄ ረ ቄ ራ ኔ	
D 07	የ D 05 05 ጀ ዋ ብ አ ው ም ስ ተ ሹ ጉ ጠ ተ ሰ ቻ ህ ?	1. 1 - 2 ሹ ጉ ጠ 2. 3-4 ሹ ጉ ጠ 3. 5-6 ሹ ጉ ጠ 4. ተ 6 ሹ ጉ ጠ ደ ር	

ኢ ት ኬ ተ ሎ ነ ይ ሱ ል ቸ በ ስ ን ቅ አ ዳ ብ ነ ኡ ስ ጥ አ ት ከ ል ት ህ ነ ግ ነ ቁ ጠ ላ ቁ ጠ ል ቸ ዋ ሰ መ ራ - ሰ መ ር ቻ ነ ምን ያ ላ ን እ ድ ጋ ለ ል ና ን ?ቢ ላ ነ ይ አ ዘ ር ያ ሰ ታ ን ዮ ና ን ። ። በ አ ዝ ጋ ግ ነ ኢ ት ረ ከ ቦ ን ሰ መ ራ - ሰ መ ር ቸ ዋ ቁ ጠ ላ ቁ ጠ ል ቸ /አ ት ከ ል ት ቸ ነ ለ ባ ይ ት ከ ቅ ጨእ ድ ጋ ለ ል ና ን ። ። በ ሰ አ ደ ድ ከ ሳ ይ ነ አ ድ ጋ ለ ል ነ ያ ነ ይ የ ቁ ጠ ላ ቁ ጠ ል /አ ት ከ ል ት ዋ ፍ ራ ፍ ሬ ቅ ጨያ ቴ ራ ን ። ። ሱ ል ቻ ይ ት ት ከ ነ ብ ሉ ሉ ሌ ካ ሌ ቆ ረ ህ ድ ሳ ም ተ ይ ጥ ር መ ቼ ኡ ስ ጥ ባ ገ በ ሃ ለ ት **<u>ወ ሻ ይ ብ</u>** ሳ ም ት በ ው ሰ ዶ ት ዮ ና ን ። ።

ሱ ረ - E የ ስ ን ቅ አ ዳ ብ በ ጀ ረ ቦ ት ዙ ረ ዮ ና ን

ወ . ኢ	ሱ ል ቸ	ፈ ሰ ሸ - ከ ም ባ የ	
E01	በ ህ ድ ሳ ም ት ኡ ስ ጥ ም ን ያ ይ ል አ ያ ም ቸ ሰ መ ራ - ሰ መ ር ቲ በ ሎ ሙ?ሰ	ወ ክ ተ ይ በ ኢ ል ቅ -------- ኢ ለ ው ች ል 9	
E02	በ ህ ድ አ ያ ም ኡ ስ ጥ ም ስ ተ ግ ን ?ሰ መ ራ - ሰ መ ር ቲ ት ረ ዘ ቆ ሙ? (ኡ ር ባ ት ፣ ባ ሬ ፣ ግ ን ዝ ር ዋ መ ክ ሰ ስ)	ያ ያ ም ቻ ይ እ ል ቅ ------- ኢ ለ ው ች ለ ል 9	
E03	በ ህ ድ ሳ ም ት ኡ ስ ጥ ም ን ያ ይ ል አ ያ ም ቸ ቁ ጠ ላ ቁ ጠ ል ቻ ነ /አ ት ከ ል ት ቻ ነ ቲ ት ረ ዘ ቆ ሙ?	ያ ያ ም ቻ ይ እ ል ቅ ------- ኢ ለ ው ች ለ ል 9	
	በ ህ ድ አ ያ ም ኡ ስ ጥ ም ስ ተ ግ ነ ቁ ጠ ላ ቁ ጠ ል ቸ ህ ነ ግ ነ	ወ ክ ቲ በ ኢ ል	

E04	አ ት ክ ል ት ቸ ቲ ት ረ ዘ ቆ ሙ?(ኡ ር ባ ት ፣ ባ ሬ ፣ ግ ን ዝ ር ዋ (መ ክ ሰ ስ)	ቅ -------- አ ለ ው ች ል 9	

የ ገ በ ተ - ሀ ሰ ቦ

ኢ ት ኬ ተ ሎ ነ ይ ሱ ል ቸ በ ሰ ን ቅ አ ዳ ብ ነ አ ይ ነ ቅ ጨሃ ሰ ቦ እ ድ ጋ ለ ለ ና ን ቢ ላ ነ ይ አ ዘ ር ኢ ጩቅ ማ ን ዮ ና ን ፡ ፡
ሱ ሊ በ ጋ ራ ሙ ያ ሃ ሰ ቦ ተ ድ ጋ ለ ሎ ት ሃ ለ ት ም ን እ መ ስ ላ ነ ኮ ዋ አ ይ ነ ኮ ሁ ኖ ት ያ ለ ቢ ኮ በ ሁ ን ዱ ሉ ሌ ዬ ድ ባ ን ፡ ፡

ወ . ኢ	ሱ ል ቸ	ፈ ሰ ሸ - ክ ም ባ ያ ዮ	
E05	ተ ት ረ ዘ ቆ ታ ሙ ቀ ዳ ሃ ሰ ቦ አ ነ ግ ነ ስ ን ቅ ያ ጫ ጪ ሙ ያ ን ግ ዝ ቲ ድ ጋ ለ ሎ ሙ?	1 እ ድ ጋ ለ ለ ና ን 2 ኢ ለ ው ት ድ ጋ ለ ል ነ	
E06	**E05** ጀ ዋ ብ ከ ኢ ድ ጋ ለ ል ና ን ቦ ነ በ ጋ ራ ሙ ም ስ ተ ግ ነ ሃ ሰ ቦ /ስ ን ቅ ያ ጫ ጪ ሙ ቢ ያ ን ግ ዝ /ሱ ነ /ስ ን ቀ ላ ብ ስ ሎ ት /ላ ስ ና ዶ ት ቲ ድ ጋ ለ ሎ ሙ?	1 ሁ ለ ም ግ ነ 2 አ ብ ዞ ት ወ ክ ት /ብ ዤ ወ ክ ት / 3 ሀ ደ ሀ ደ ግ ነ 4 አ ለ ፈ አ ለ ፋ ኔ 5 ስ ረ ም 6 እ ለ ው ች ል	

E07	ምስ ተ ግ ነ በ ሀ ሰ ቦ የ ስ ና ዱ ስ ን ቅ ቸ የ ቴ ፉ /ጡሃ ለ ት ኒ ሙ የ ት ቄ ሩ / ሱ ፐ ር ማ ር ኬ ት ውጣ ት ዮ ኑ ስ ን ቅ ቸ ት ድ ጋ ለ ሎ ም ?	1 ሁ ለ ም ግ ነ 2 አ ብ ዘ ት ወ ክ ት /ብ ዤ ወ ክ ት / 3 ሀ ደ ሀ ደ ግ ነ 4 አ ለ ፈ አ ለ ፋ ኔ 5 ስ ረ ም 6 እ ለ ው ች ል	

ኢ ት ኬ ተ ሎ ነ ይ ሱ ል ቸ በ ጋ ር ኡ ስ ጥ ስ ን ቀ ቢ ስ ና ድ ቡ ያ ን ወ ክ ት በ ለ ወ ክ ተ ኢ ድ ጋ ለ ል ነ ቢ ን የ ቅ ባ ት ካ ሌ ኢ ን ኩ ም ን ገ ተ ጋ ር አ ብ ሌ ተ ስ ና ዱ ስ ን ቅ ቸ ተ ድ ጋ ለ ሎ ት ግ ነ በ ቲ ን ዛ ዘ ዮ ና ን ፡ ፡

E 0 8	በ ጋ ር ኡ ስ ጥ ስ ን ቅ ቲ ታ ስ ና ዱ አ ይ ነ ካ ሌ ቅ ባ ት /ዘ ይ ት /ቲ ድ ጋ ለ ሎ ሙ?ሊ ቃ ለ ኩ ሞ ቲ ድ ጋ ለ ሎ ሙ ቦ ነ በ ለ ወ ክ ተ ቲ ድ ጋ ለ ሉ ሙ ይ ጪ ቅ ሙ?/	1የ ቁ ጠ ላ ቁ ጠ ል /አ ት ክ ል ት ዘ ይ ት / 2 እ ሴ ቼ 3 የ ፉ ር ኖ እ ሴ ቼ 4 ኢ ረ ጋ ን ዘ ይ ት 5 ገ ና ም በ ለ 6 አ ደ ም ከ እ ለ ው ት ድ ጋ ለ ል 7 እ ለ ው ች ል	

Annex VI appointment for FBS

Code No,----------

Sex----------

Address----------

Reason for appointment FBS

Code No,----------

Sex----------

Address----------

Reason for appointment FBS

S.N	Sex	Code NO	Mobile NO.

Code No,----------

Sex----------

Address----------

--

Reason for appointment FBS

Code No,----------

Sex----------

Address----------

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Reason for appointment FBS

Card No,----------

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Sex----------

Address----------

Reason for appointment FBS

Card No,----------

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Sex----------

Address----------

Reason for appointment

FBS

1			
2			
3			
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Annex VII Address for FBS appointment; date / / 2013 E.C