ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF PUBLIC HEALTH NUTRITION AND DIETETICS

Eating away from home among hypertensive patients in Addis Ababa: Frequency and association with blood pressure control

By: Hana Shumetie (BSc)

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APPROVED BY THE BOARD OF EXAMINERS

This thesis, by Hana Shumetie is accepted in its present form by the board of examiners as fulfilling thesis requirement for the degree of master in public health nutrition.

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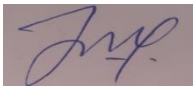
Tsegaye Demissie (PhD)	Assoc. Prof.		20/07/25
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Acronyms and Abbreviations

AACAHB	Addis Ababa City Administration Health Bureau
ACC	American College of Cardiology
AHA	American Heart Association
AOR	Adjusted Odd Ratio
BMI	Body Mass Index
BP	Blood Pressure
BSc	Bachelor of Science
CI	Confidence Interval
COR	Crude Odd Ratio
DALYs	Disability-adjusted life years
DASH	Dietary Approaches to Stop Hypertension
DBP	Diastolic blood pressure
DM	Diabetes mellitus
EAFH	Eating away from home
ETB	Ethiopian Birr
HIC	High-income countries
HTN	Hypertension
ISH	International Society of Hypertension
JNC 7	Seventh Joint National Committee
JNC 8	Eighth Joint National Committee
LMICs	Low and middle-income countries
MUFAs	Monounsaturated fatty acids
NCDs	Non-communicable Diseases
PURE	Prospective urban rural epidemiology
SBP	Systolic blood pressure
SFAs	Saturated fatty acids
SSA	Sub-Saharan Africa
STEPS	STEPwise Approach to Surveillance
US	United States
WHO	World Health Organization

Abstract

Background: Eating away from home makes healthy dietary choices challenging. Foods prepared away from home are commonly energy dense, micronutrient poor, and contain high salt making them less preferred from non-communicable disease (NCD) perspectives and may increase the risk of poor blood pressure control. In the Ethiopian context, the frequency of eating away from home and its association with blood pressure control have not been explored before.

Objectives: To assess the frequency of consumption of meals prepared away from home among hypertension patients in Addis Ababa, Ethiopia, and determine its association with blood pressure control.

Methods: An institutional-based cross-sectional study was conducted from January to March 2025 among 474 hypertensive patients randomly selected from public hospitals and health centers in Addis Ababa. Frequency of eating away from home (EAFH) was analyzed using a standard questionnaire with minimal adaptation. The questionnaire included items on frequency of consumption of fast-food outlets, sit-down restaurants, and takeaway vendors, the types of food consumed, and their reasons for eating away from home. Blood pressure was measured using validated digital sphygmomanometers in duplicates. Poor blood pressure (BP) control was defined as systolic BP ≥ 130 mm Hg or diastolic BP ≥ 80 mm Hg. The frequency of EAFH was compiled into a single score, which was then categorized as either low (less than 3 times per week) or high (3 or more times per week). Binary logistic regression analysis was used to evaluate the association between EAFH frequency and blood pressure control, adjusting for socio demographic, clinical and behavioral factors.

Results: The prevalence of uncontrolled blood pressure among the participants was 68.9% (95% CI: 64.7% -73.1%). About 24.6% of participants had high eating away from home (3 or more times per week). High frequency of eating away from home (eating away from home more than 3 times per week) was significantly associated with increased odds of uncontrolled blood pressure (AOR = 1.77; 95% CI: 1.04-3.00).

Conclusion: Frequent consumption of meals prepared away from home is significantly associated with poor blood pressure control among hypertensive patients. Public health interventions should focus on raising awareness about the health implications of EAFH, promote

healthier food environments, and support hypertensive individuals in making better dietary choices.

Keywords: Hypertension, Eating away from home, Blood pressure control

1. Introduction

1.1 Background

Hypertension is defined as a consistent increment of blood pressure (BP), where the readings are a systolic blood pressure (SBP) of 130 mm Hg or higher and/or a diastolic blood pressure (DBP) of 80 mm Hg or higher (1). According to Eighth Joint National Committee (JNC 8) guidelines, based on the readings of blood pressure, hypertension is classified into two stages. The first stage occurs when a person has a systolic blood pressure between 140 and 159 mm Hg or a diastolic blood pressure between 90 and 99 mm Hg and stage 2 hypertension is characterized by having systolic blood pressure of 160 mm Hg or higher, or diastolic pressure of 100 mm Hg or higher (2). While Seventh Joint National Committee (JNC 7) and American Heart Association (AHA) guidelines historically used similar thresholds, the 2017 AHA guideline lowered the diagnostic cutoff to ≥130/80 mm Hg, contributing to higher prevalence estimates compared to JNC 7's ≥140/90 mm Hg standard (1, 2).

Globally, more than 1.2 billion adults are affected by hypertension and the highest prevalence is reported in adults 30 and 79 years of age. Out of the affected population, two-thirds live in low and middle income countries (LMICs) (3). The condition is also a major concern in Sub-Saharan Africa (SSA), affecting 30.8% of the population (4). In Ethiopia, the estimated hypertension prevalence ranges, from 15% to 30% (5). According to a systematic review, the total prevalence of hypertension was 19.6%, with a higher prevalence in urban areas (23.5%) than in rural areas (14.7%). The same study also reported that the prevalence of hypertension was slightly higher among males (20.6%) than females (19.2%) (6). As stated by JNC 7 and AHA guidelines, the prevalence of hypertension (HTN) in Addis Ababa was 22.1% and 47.8% respectively (5).

Hypertension is a global health concern driven by various interconnected factors, excess sodium intake and low levels of potassium and fiber contribute to high blood pressure (7,8). Aging leads to physiological changes like arterial stiffness and inflammation, affecting nearly 70% of older adults (9). Urbanization and sedentary lifestyles, marked by unhealthy diets and reduced physical activity further exacerbate this condition (10). Diabetes and obesity are also significant contributors due to shared factors like insulin resistance and inflammation (11,12). These factors ranging from lifestyle choices to inherent biological traits collectively shape hypertension risk. The factors listed above are generally categorized as modifiable factors such as diet and

sedentary lifestyle and non-modifiable factors, including age, genetics, family history, and chronic conditions like diabetes (3).

According to Landais et al., food consumed away from home conventionally refers to food items that are obtained, although not exclusively, from restaurants, cafeterias, food trucks, street foods, and other commercial or noncommercial food service establishments (13). Eating out is frequently linked to unhealthy eating habits that can elevate blood pressure (14,15). Individuals who eat out often tend to consume fewer essential nutrients, such as dietary fibers, vitamins, and minerals like potassium and magnesium, which are important in managing hypertension (13,16). Meals prepared outside the home usually contain higher sodium levels due to excess use of salt as a flavoring agent and a preservative (13,17). This excess sodium contributes to hypertension and other cardiovascular problems (18,19). In other countries, fast-food restaurants typically offer large, calorie-dense servings that are low in nutrients, leading to weight gain and potentially elevating hypertension risk (20,21)

Most of the time, when people eat outside their home, the meals they choose are influenced by recognizable brands that they have seen through marketing, encouraging them to consume these brands frequently (22). Consumption of unhealthy foods in social gatherings is also one way individuals consume calorie-dense foods. Events, peer influence, and social media advocate unhealthy eating practices such as overeating (23). Appealing pictures and marketing of these fast-foods also made especially children to have positive perception on eating unhealthy foods which will eventually lead them to long term health complications (24).

This study aims to determine the prevalence of consumption of meals prepared away from home among hypertensive patients and its association with blood pressure control in Addis Ababa, Ethiopia.

1.2 Statement of the problem

Eating away from home is unhealthy because the foods contain high calorie, sodium, sugar, saturated fats and are low on micronutrients that are crucial for health like fibers, minerals and vitamins (18). This improper balance of nutrients leads to the risk of malnutrition and chronic diseases such as obesity, heart diseases including hypertension and Diabetes Mellitus (DM) (25,26). This way of eating also promotes unhealthy eating habits by making people choose convenience over healthy eating (32).

According to a population-based survey in Addis Ababa, about 34% of households reported at least one member ate a regular meal outside the home in the previous week, mainly due to work being far from home, reported by 73% of those eating out (28). The prevalence of eating out is higher among urban residents and is influenced by income, education, and employment status, according to a systematic review across LMICs (29). Studies indicate high consumption of meals away from home is associated with poor adherence to the Dietary Approaches to Stop Hypertension (DASH) diet and increased obesity risk, which is concerning for individuals with hypertension, as diets high in unhealthy fats and sodium worsen blood pressure conditions (30,31). Individuals with hypertension, due to poor nutrition literacy, low awareness of dietary guidelines, low income, and limited access to nutritious foods, often rely on unhealthy options, further complicating their condition (32). Some individuals with hypertension may experience salt-sensitivity due to high sodium-intake making their blood pressure continue to rise (33,34).

From global scope, hypertension is the leading cause of fatality, causing 10.4 million deaths annually, according to the International Society of Hypertension (ISH) global hypertension practice guideline (11). In Addis Ababa, studies showed a substantial proportion of adults (22.1% to 47.8%) are affected, making it the most concerning condition despite variations in diagnostic criteria (5). It is also a major contributor to disability-adjusted life years (DALYs), with hypertensive heart disease responsible for 21.51 million DALYs globally in 2019 (35). Limited policy focus, poor public awareness, and restricted access to hypertension screening and essential anti hypertension medicines challenge control efforts in Ethiopia. National estimates show about 11.8 million adults (16%) live with hypertension, but fewer than 2% have adequate control (36). A study in rural Northwest Ethiopia shows fewer than 40% were diagnosed, one-third received treatment, and only 26% of treated patients achieved control (37). The 2015

Ethiopian STEPwise Approach to Surveillance (STEPS) survey also showed only 2.8% received treatment (38).

A study in southern Ethiopia showed a huge portion of the study participants experienced the disease, resulting in abrupt mortality and a financial strain averaging United states (US)$105.55 monthly (39). A study in Debre-Tabor also noted that hypertensive patients spent $113.40 annually on healthcare, much higher than the national per capita health expenditure (40). These findings convey that; there is a huge financial burden in controlling hypertension in the country.

Many studies in Ethiopia and beyond indicated a substantial proportion of hypertensive patients on treatment fail to control their blood pressure. The Prospective Urban Rural Epidemiology (PURE) study indicated only 32.5% of treated patients in different countries achieved sufficient control (41). In Kenya, only 33.4% of hypertensive patients maintained recommended blood pressure levels (42). A study in Brazilian clinic found nearly half of patients did not achieve controlled blood pressure (43). A systematic review in Ethiopia found about 51% of hypertensive patients had uncontrolled blood pressure, with Addis Ababa's prevalence higher at 58% (44). Factors contributing to this poor blood pressure control include provider-related issues like neglecting treatment, irregular follow-up scheduling, and lack of awareness about the treatment (45), while patient factors include low medication adherence, poor lifestyle choices, and chronic conditions (46).

Previous studies have illustrated about hypertension prevalence and its associated risk factors in Ethiopia, however there is limited knowledge of how dietary practices particularly, frequency of consuming food away from home, influences blood pressure management in this population. Majority of researches have focused on hypertensive patients' general lifestyle modifications and self-care practices conversely, they have neglected the specific impact of eating habits on blood pressure control (46, 47). Thus, this study aims to fill this gap by offering a perspective into the relationship between eating away from home and blood pressure control among hypertensive patients.

1.3 Significance of the study

As urbanization expands, individuals have increased consuming meals outside their home that worsens hypertension (19,21,47). This study examining the relationship between eating out frequency and blood pressure control among hypertensive patients in Addis Ababa provides valuable information for healthcare professionals, policy makers, patients and the community at large. Even though prior studies have showed that there is strong connection between cardiovascular health and dietary patterns (48), this study has delved into hypertensive patients' dietary habits in order to understand how frequency of eating out influences blood pressure control.

Eating away from home (EAFH) is frequently associated with hypertension in studies conducted in other settings (49). However, the issue is worth investigating in our country as the pattern of EAFH is different from other settings. In our country, the most common EAFH practice is consuming street foods rather than fast-food restaurants. Street foods are especially popular among low-income groups and young workers due to affordability and convenience, particularly in Ethiopian cities experiencing rapid growth and industrialization (30).

Thus, this research will be informative for health care professionals and policy makers to understand the effect of EAFH on hypertensive patients. Health care professionals can use this information to teach people to adapt healthy dietary choices. Policymakers will use the findings from this study to develop a personalized dietary strategy connected to the local eating habits in Ethiopian context, specifically the urban setting. These will also help patients to have a better understanding of their dietary choices and enable them to make more informed decisions that improve their overall health and well-being. Small efforts for individual patients can lead to big changes for the community at large.

2. Literature review

2.1 Epidemiology of hypertension

Hypertension is a major global burden, affecting as many as 1.2 billion adults worldwide, with the majority of cases occurring among individuals aged 30 to 79 (3). This condition poses a significant health burden in LMICs, where it affects approximately one in three individuals or about 32.3% of the population (50). High-income countries constitute about 28.5%, while low and middle income countries constitute higher than High-income countries (HIC) which is about 31.5% (51,52).

This conditions' importance is underscored by its association with significant morbidity, mortality, and disability, which can vary considerably across different regions and countries. Worldwide, more than 1.2 billion people are suffering due to hypertension (3), with the prevalence in LMICs especially surging with urbanization and lifestyle changes, resulting in rising complication rates from heart attacks and strokes (3,53). In Africa, it is at an alarming rate that has dramatically increased over recent decades due to lifestyle changes and increased risk factors such as obesity(54).

This condition is highly distributed across Africa, affecting about 30.8% of adults (55). This shows hypertension across this continent is seriously affecting the population, especially in the SSA the prevalence among adults of 25 years and older accounts 46% (56). This increased distribution is because of the emergence or increment of industrialization, health access difficulties and changes in the way of living. This situation has become worsened over the years because the population does not have access to become aware of their condition showing that, only 7.3% of individuals get adequate treatment (57,58).

From low-income countries like Ethiopia in which, high blood pressure is being prevalent, a systematic review conducted indicates that, among adults the prevalence of hypertension is about 20.6%. Its prevalence varies from 12% to 30% in Ethiopia (68), with some studies from urban areas, such as Addis Ababa, recording as high as 25.35%. Of the cardiovascular-related deaths, it accounts for 62.3% in the country, which indicates how crucial its impacts are on health (69). The complications resulting from hypertension are one of the top sources of hospitalization and causes of death, and they have significant impacts on quality of life and productivity (6).

According to the nationally representative 2015 Ethiopia STEPS Survey, hypertension affects 15.8% of the population overall, with urban areas showing higher prevalence (19.7%) compared to rural regions (14.9%) (59). This aligns with a meta-analysis estimating overall prevalence of 19.6%, with urban areas (23.7%) higher than combined rural-urban settings (14.7%) (6). In areas outside Addis Ababa, it has been indicated that, hypertension distribution reaches as far as 41.9% and people with higher Body Mass Index (BMI) and older age are more at risk (54).

Addis Ababa, the capital city of Ethiopia, is affected by this condition with approximately 22.1% of adults suffering from it. Among this percentage of adults 25.7% are men and 18.8% are women (6). The 2015 STEPS survey and subsequent mapping studies identified Addis Ababa as having the highest prevalence of hypertension in Ethiopia, at 30.6% (57, 58). A community-based study conducted also showed that, a huge proportion of the population (61.9%) are unaware of them being diseased, while 29.2% of the people were found to be hypertensive (59). A 2024 opportunistic screening study at Yekatit 12 Hospital Medical College, in Addis Ababa involving 301 adults found a 36.2% prevalence of newly diagnosed hypertension (60). Another study done in the city in 2022 showed that prevalence of hypertension among specific occupational groups like long-distance bus drivers was 22.5% (61).

Other important aspect to consider is the distinction between modifiable and non-modifiable risk factors that influence hypertension. The former risk factors are factors that one cannot change like, age, race, gender and family history while the latter one are factors that one can change or control throughout life, like stress, smoking, some medications, excessive alcohol use, lack of exercise, poor diet and obesity (60). Although hypertension is usually seen as a “silent- killer” (3), the condition can be manifested as headache, nervousness, inflammation and fast heartbeat (61).

2.2 Medical consequence of hypertension

Hypertension is a significant concern of the public since it has been associated with its widespread distribution and causing several life-threatening adverse effects like heart and kidney problems. This condition is rising significantly because of some driving factors like lack of physical activity, increased stress, and poor choice of diet. As these conditions continue to intensify, it makes it even worse to control both morbidity and mortality worldwide (1–3)

Globally, hypertension contributes to roughly 10.4 million deaths each year, ranking as the leading mortality risk factor due to its well-established connections with cardiovascular and cerebrovascular diseases, metabolic disorders and renal dysfunction (11). In 2021, hypertensive heart disease was responsible for an estimated 1.33 million fatalities and 25.5 million DALYs worldwide, disproportionately affecting low socio demographic index areas like Eastern Sub-Saharan Africa (62). Current epidemiological data reveals that ischemic heart disease, stroke, and hypertension collectively contribute to 90% of cardiovascular mortality in Ethiopia. Notably, hypertension alone comprises approximately 11% of these fatalities. Each day, about 170 Ethiopians die from cardiovascular diseases, where high blood pressure is the leading risk factor, causing over half of all cardiovascular-related DALYs (63).

Hypertension is linked with cardiovascular disease as a leading risk factor (62). It is also a major risk factor for several serious health conditions including stroke, coronary heart disease, chronic kidney disease, and dementia (63). Uncontrolled hypertension is associated with higher healthcare expenses, with approximately $49 billion spent each year on both direct and indirect medical costs for managing the condition (62). Direct costs include medical care costs, medication costs depending on the treatment. Indirect costs happen when individuals who have hypertension becomes absent from work which leads to decreased productivity (64). In LMICs, hypertension rate is rising but the awareness, treatment and control of the condition remain low, showing urgent need for improved public health interventions (49).

2.3 Blood pressure control among hypertensive patients: magnitude and risk factors

While effective treatments are available, many patients still face difficulties in achieving and maintaining healthy blood pressure levels. Studies reveal significant disparities in blood pressure control across various populations and healthcare settings. A study conducted in a specialized clinic in Brazil revealed that the blood pressure control rate was 51.1%, and a variety of clinical factors influenced the outcome (43). A study in Nigeria, Dutse reported that only 27.6% of hypertensive patients reached recommended blood pressure levels (64). In Kenya, for example, a similar study reported that only 33.4% of hypertensive patients had blood pressure within the recommended limits, again underlining the problem to be of significant public health importance (42).

A study in Ethiopia indicated that only 50.3% of patients attained sufficient blood pressure control and the most influential factors include adherence to medications and lifestyle choices (53). Another study done in Ethiopia revealed that about 36% of hypertensive patients had their blood pressure uncontrolled, with only 63.6% achieving optimal control. Poor control was associated with factors like male sex, illiteracy, long duration of hypertension, non-adherence to medication, and lack of physical exercise (65).

Various risk factors influence the effectiveness of BP control, which can be categorized into modifiable and non-modifiable factors. Modifiable risk factors for BP control include medication adherence, dietary habits, physical activity, and comorbid conditions. Poor adherence to antihypertensive medications significantly hinders BP management, while a diet high in salt can exacerbate the problem, contrasting with the benefits of a vegetable-rich diet. Regular physical activity is associated with better BP control, as exercise helps improve overall. Furthermore cardiovascular health, comorbid conditions and complex treatment regimens can complicate adherence and negatively affect BP outcomes (66,67).

Non-modifiable risk factors for poor blood pressure control include age, gender, and family history. Research indicates that older individuals, particularly those over 60, tend to have better blood pressure management outcomes. Gender differences also play a role, as studies suggest that female patients often demonstrate greater knowledge and control over their blood pressure compared to their male counterparts, potentially impacting treatment effectiveness. Additionally, a family history of hypertension can predispose individuals to challenges in managing their blood pressure, underscoring the significance of genetic factors in hypertension management (68,69).

2.4 Eating away from home: concept and measurement

The definition of eating away from home, generally refer to foods purchased from restaurants, fast-food outlets, or take-out establishments, and not prepared by household members at home (70). The term include meals, beverages, and snacks consumed outside the home, or foods prepared by food services (such as restaurants, cafeterias, or catering) and include foods brought home to eat (like takeaway) (71). A scoping review found that most studies include restaurants, fast-food, chain restaurants, cafés, bars, buffets, takeaways, and cafeterias in their definitions of

eating away from home (16). However, there is no standardized definition, leading to variability in how researchers categorize and study EAFH (16,70).

Some studies specifically categorize away-from-home foods into types, such as fast-food, sit-down restaurants, and meals consumed at friends' or relatives' homes, which can influence dietary intake and health outcomes (72,73) while, many studies utilize surveys to quantify the frequency of away-from-home food consumption. For instance, parents may report how often their families eat out or consume food from specific contexts (e.g., restaurants versus friends' homes) (72,74).

Studies often correlate away-from-home eating with health outcomes, such as obesity rates and dietary quality. For example, higher frequencies of eating out have been linked to poorer diet quality and increased risk of obesity among children and adults (75,76). Researchers analyze the nutritional content of foods consumed away from home, noting that these foods tend to be higher in calories, fats, and sugars compared to home-cooked meals (77,78).

2.5 Frequency of consumption of meals prepared away from home (global and national evidences)

The frequency of eating away from home has been increasing globally, influenced by various socio-economic factors and lifestyle changes. In the United States, the share of food budgets allocated to eating out has risen significantly, from 41% in 1984 to 50% in 2010, and this trend continues to grow (79). In emerging economies like China and India, the percentage of households consuming meals outside has also increased, with India reporting a rise from 23% in 1994 to 39% in 2010 (80,81). A study in the United Kingdom found that over one-quarter (27.1%) of adults and one-fifth (19.0%) of children eat meals out at least once a week. Additionally, 21.1% of adults and children reported eating take-away meals at home weekly (82).

A report indicated that in Europe, about 18% of all meals are consumed outside the home. This trend reflects broader lifestyle changes, including increased meal occasions and a shift towards more flexible dining options (83). In Shanghai, China a study found that 55.1% of adults reported eating out, with 31.8% dining at restaurants (84). A study found that 77.3% of Singaporean adults typically eat at eateries for at least one of their three daily meals. The primary venues include hawker centers (61.1%) and school/workplace canteens (20.4%), while only a

small fraction (1.9%) usually dine at Western fast-food restaurants (85). Fast-food outlets are the most common source of meals eaten away from home, with about 36% of Australian adults reporting eating fast-food 1 to 3 times a week (86).

Peruvian households allocate a significant portion of their food budget to meals consumed outside the home (87). Consumption of food away from home is relatively common in various African countries, driven by urbanization and socio-economic changes. For instance, urban populations tend to spend a significant portion of their food budget on meals outside the home (29).

In Addis Ababa, there is a notable increase in the consumption of processed convenience foods and meals from food vendors. This shift is part of a broader nutrition transition observed in many urban areas of Ethiopia (88). A study highlighted that adolescents in Addis Ababa often rely on food from vendors during school hours, indicating a significant portion of their diet comes from meals eaten away from home. This reliance is influenced by factors such as peer pressure and the availability of unhealthy food options (89).

2.6 Association between eating away from home and diet-related NCDs

Studies have shown that when these processed foods are consumed it is related to the person developing the risk of weight increment, heart problems and other conditions. Frequent consumption of meals prepared away from home has been significantly associated with an increased risk of cancer mortality. A large prospective cohort study found that individuals who ate two or more meals prepared away from home per day had a higher risk of dying from cancer compared to those who ate fewer than one meal per week away from home (90).

Frequent consumption of meals prepared away from home, particularly from fast-food outlets, often leads to excessive salt intake, which is a known risk factor for hypertension. This risk is further elevated in individuals who are already obese, as their dietary choices away from home tend to be higher in processed ingredients and lower in nutrient-dense foods (91).

A systematic review conducted showcases that, plenty amount of sugar, salt and detrimental fats are contained in fast-foods, this contribute largely to high blood pressure (92). People who dine outside their home have unhealthy dietary choices and are often characterized by consuming low amount of fruit and vegetables. These are substances important to sustain normal blood pressure levels (93).

A study conducted in Singapore on university students have showed that, high blood pressure was prevalent in 27.4% of the participants indicating that the association between eating away from home frequency and hypertension to be notable. This study has also showed that for every additional food they consume away from home, HTN is increased by 5%. For this place, high consumption of unhealthy foods have significantly contributed to the development of hypertension (94). In United kingdom, individuals who eat unhealthy food establishments have lower adherence to stick to DASH diet and they were also prone to weight increment (30).

The proximity of these food centers to the people also significantly determine the individuals consumption pattern (95). As a research finding indicate, when people have access to these fast-food centers, they are prone to higher rates of obesity and diet related diseases showing that, environment is very determining factor in making people decide their dietary choices (96). It influences people to consume outside their home by using the ambiance of fast-food restaurants and by promoting them. It is indicated that, if the place these unhealthy foods located are near and there is aggressive marketing, people are likely to buy them and consume them, causing them to have long term health issues like HTN (97).

2.7 Association between eating away from home and blood pressure control

Eating away from home is linked to higher blood pressure and increased hypertension risk. A study with 29,611 participants from the Henan Rural Cohort found that eating away from home seven times or more per week is linked to a higher risk of hypertension, particularly in men (49). A systematic review highlighted that frequent consumption of food away from home is associated with negative changes in dietary habits, which exacerbates the risk of hypertension (98).

Another study highlighted that individuals who derive a higher proportion of their energy intake from away-from-home food establishments tend to have lower adherence to the DASH diet, which is known for its effectiveness in lowering blood pressure (30). Foods prepared away from home, particularly fast-food and restaurant meals, tend to be significantly higher in sodium than home-cooked meals. High sodium consumption is associated with increased BP and a higher incidence of hypertension and cardiovascular complications. Conversely, reducing sodium intake can lead to significant decreases in BP (19). Similar to sodium, EAFH is often associated with higher intakes of saturated and trans fats, which contribute to "bad" cholesterol and increased

risk of cardiovascular disease, including hypertension. A study involving 28,100 middle-aged and older women found that higher intakes of saturated fatty acids (SFAs), monounsaturated fatty acids (MUFAs), and trans fats were positively associated with the risk of developing hypertension (99).

Fruits and vegetables are rich in potassium, which helps counter the effects of sodium on blood pressure (100). A systematic review and meta-analysis indicated that higher fruit and vegetable intake is associated with a reduced risk of developing hypertension (101). A cross-sectional study in Iran found that individuals consuming fewer fruits had a higher likelihood of developing hypertension, emphasizing the protective role of fruit consumption against elevated blood pressure (102).

2.8 Conceptual framework

This conceptual framework is developed after reviewing different literature sources (103–111). The conceptual framework illustrates the complex interplay of factors influencing EAFH behavior and their subsequent impact on blood pressure control. Personal and social determinants include convenience-seeking behavior, social purposes, peer influence, perception of luxury, cooking skills, social media marketing influence, taste preferences, and busy lifestyle patterns that drive individuals toward EAFH consumption. Once individuals engage in EAFH, their dietary habits are likely to include high sodium/salt intake, low fruit and vegetable consumption and increased BMI, all of which are known to negatively impact blood pressure control. Frequent EAFH is also related to poor blood pressure control according to various studies. Sociodemographic characteristics such as sex, age, marital status, education level, and socioeconomic status further shape these dietary, behavioral, lifestyle and- health seeking choices which consequently impact blood pressure control outcomes.

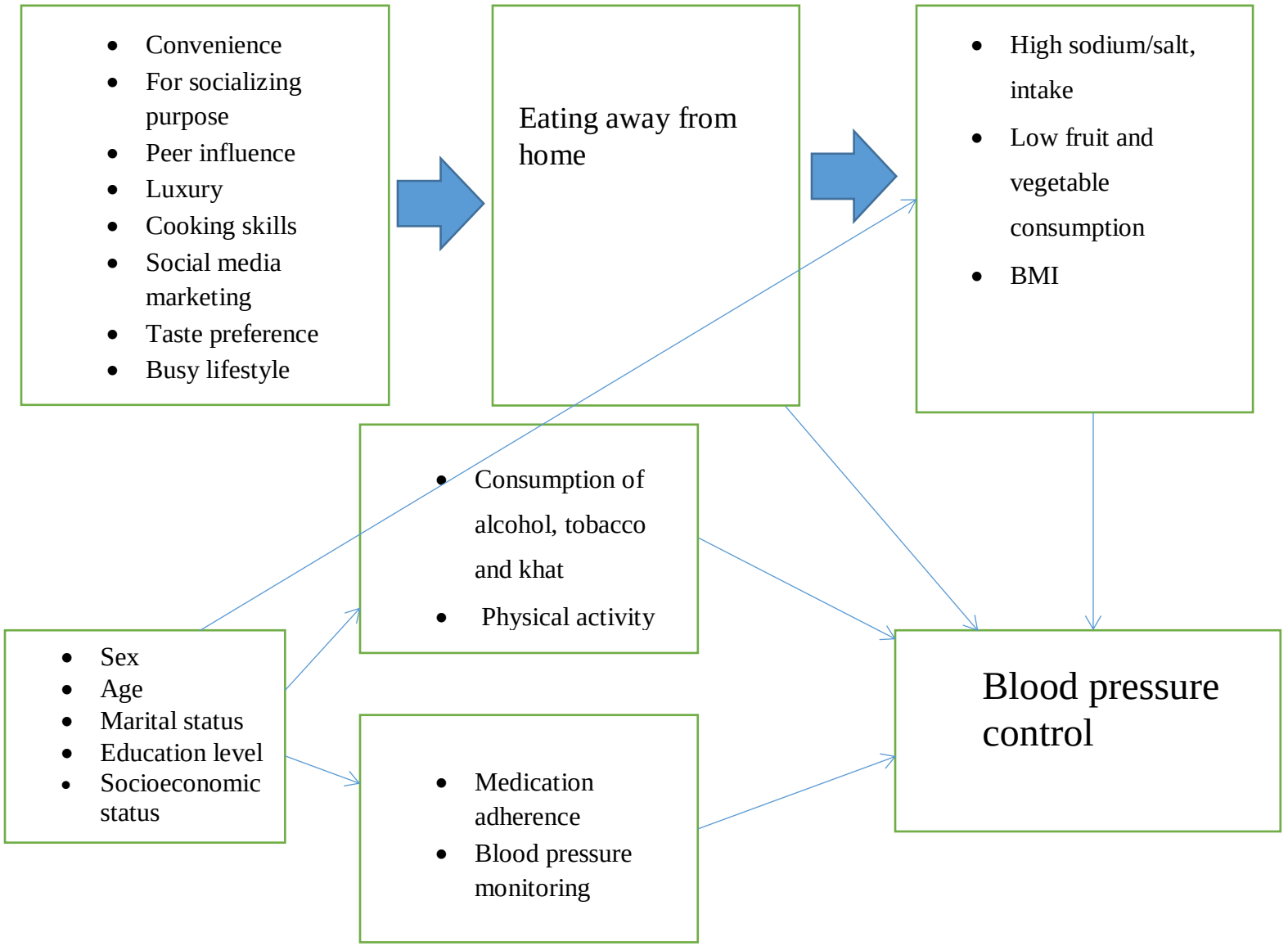

Figure 1: Conceptual framework developed based on review of literature

3. Objectives of the Study

General Objective:

To measure the frequency of consumption of food prepared away from home among hypertensive patients in Addis Ababa, and to determine its association with blood pressure control.

Specific Objectives:

- To assess the prevalence of high frequency of eating away from home among hypertensive patients.
- To examine the relationship between the frequency of eating away from home and blood pressure control among hypertensive patients.

4. Methods

4.1 Study area

This study was conducted in Addis Ababa, the capital city of Ethiopia. The city is located at 9°01'48"N with a subtropical highland climate and situated at an altitude of 2300 meters. This municipality covers an area of 540 square kilometers, which contains 11 sub-cities and 118 woredas for practicality of administration (112). In 2024, the population of Addis Ababa is estimated at 5.7 million (113).The Addis Ababa City Administration Health Bureau (AACAHB) is a government entity accountable for monitoring public health programs within this city. There are 98 health centers, 12 public hospitals, 40 private hospitals and more than 800 private clinics in the city (114).

In Ethiopia's urban centers particularly in Addis Ababa Street food vendors are widely present and serve as a primary food source for low-income and time constrained consumers, especially in densely populated and industrial areas (30, 31). Traditional restaurants offer Ethiopian cuisine like injera with stews to both locals and tourists and modern restaurants and cafés providing international cuisines and beverages, fast-food outlets, including burger and pizza joints, are on the rise (32). Open-air markets and kiosks ("Gulit") remain the go to spots for fresh produce and small food items, with bulk goods typically sourced from formal markets and cooperatives (28, 33).

For this study, data was collected from selected group of health facilities in Addis Ababa, containing both public hospitals and health centers. The selected facilities included three public hospitals like Eka Kotebe General Hospital, Tirunesh Beijing General Hospital, and Yekatit 12 Hospital, as well as six public health centers namely, Meshualekia, Amoraw, Felege Hiwot, Kotebe, Teklehaimanot, and Saris.

4.2 Study design and period

This institution based cross-sectional quantitative study was conducted from January to March 2025 in Addis Ababa Ethiopia.

4.3 Study population

All hypertensive patients above 18 years residing in Addis Ababa, whereas, those on medical follow-up in the selected health institutions of Addis Ababa, who come to the health institutions for medical follow up at the time of the study comprised the study population. Those who were included in the study are all hypertensive patients who had at least one follow up before the time of data collection to ensure availability of clinical history for accurate characterization of hypertension management status. On the other hand, hypertensive patients who were critically ill and those who were pregnant and nursing women were excluded from the study. This was done to avoid potential confounding from the physiological changes during pregnancy and lactation, which could independently influence blood pressure control and dietary behaviors.

4.4 Sample size

The sample size of this study was calculated for each of the specific objectives of the study. For the first objective, which aims to assess the magnitude of eating away from home among hypertensive patients, to calculate the required sample size using the single population proportion formula:

$$n = \frac{\left(Z\alpha/_2\right)^2 p(1-p)}{d^2}$$

In this formula, z represents the standard score corresponding to a 95% confidence level, which is 1.96, while P is the anticipated prevalence of eating away from home, assumed as 24.4% as reported in the study conducted in Hawassa city, southern Ethiopia (115). The margin of sampling error, denoted as d, was set at 0.05. To account for a non-response rate of 10% was added. Furthermore, a design effect of 1.5 was added to account for multistage nature of the study. Ultimately, the total sample size of the study was estimated as 474.

For the second objective, which aims to assess the relationship between the frequency of EAFH and blood pressure control among hypertensive patients, the following double proportion formula was used:

$$n = \frac{\left(Z\alpha/_2 + Z_\beta\right)^2 p_1(1-p_1) + p_2(1-p_2)}{(p_1 - p_2)2}$$

Using the Z-values for a two-tailed test, z_α= 1.96 and z_B= 0.84 and proportions for controlled and uncontrolled blood pressure, p_1 = 0.4 and p_2= 0.6 respectively, as reported by a study conducted in Addis Ababa (121). The calculation yielded 94 participants per group, giving a total sample size of 188 for both groups. To account for a non-response rate of 10% and design effect of 1.5, the total sample size required for this objective was rounded to 314 (157 per group P).

As the sample size for the first objective calculated by using the formula of single population proportion gives the maximum sample size, which is 474, this was the final sample size.

4.5 Sampling procedures

A multi-stage stratified sampling technique was used to select the study subjects. Initially, three public hospitals were selected from twelve public hospitals using simple random sampling. Additionally, six health centers were chosen from ninety-eight health centers through systematic random sampling with a sampling interval of sixteen. The hospitals and health centers selected were those that provide follow-up care for hypertensive patients. After selecting the institutions and proportionally allocating the total sample size to each facility, systematic random sampling was used to select study subjects from the selected facilities based on patient flow during the study period. The sampling interval was determined by dividing the expected number of hypertensive patients per month to the sample size allocated in each hospital. Thus, when the patients came to the clinic on their follow up schedule, they were interviewed.

The selected health institutions were Eka Kotebe General Hospital, Tirunesh Beijing General Hospital, Yekatit 12 Hospital, Meshualekia Health Center, Amoraw Health Center, Felege Hiwot Health Center, Kotebe Health Center, Teklehaimanot Health Center and Saris Health Center.

4.5.1 Schematic presentation of sampling procedure

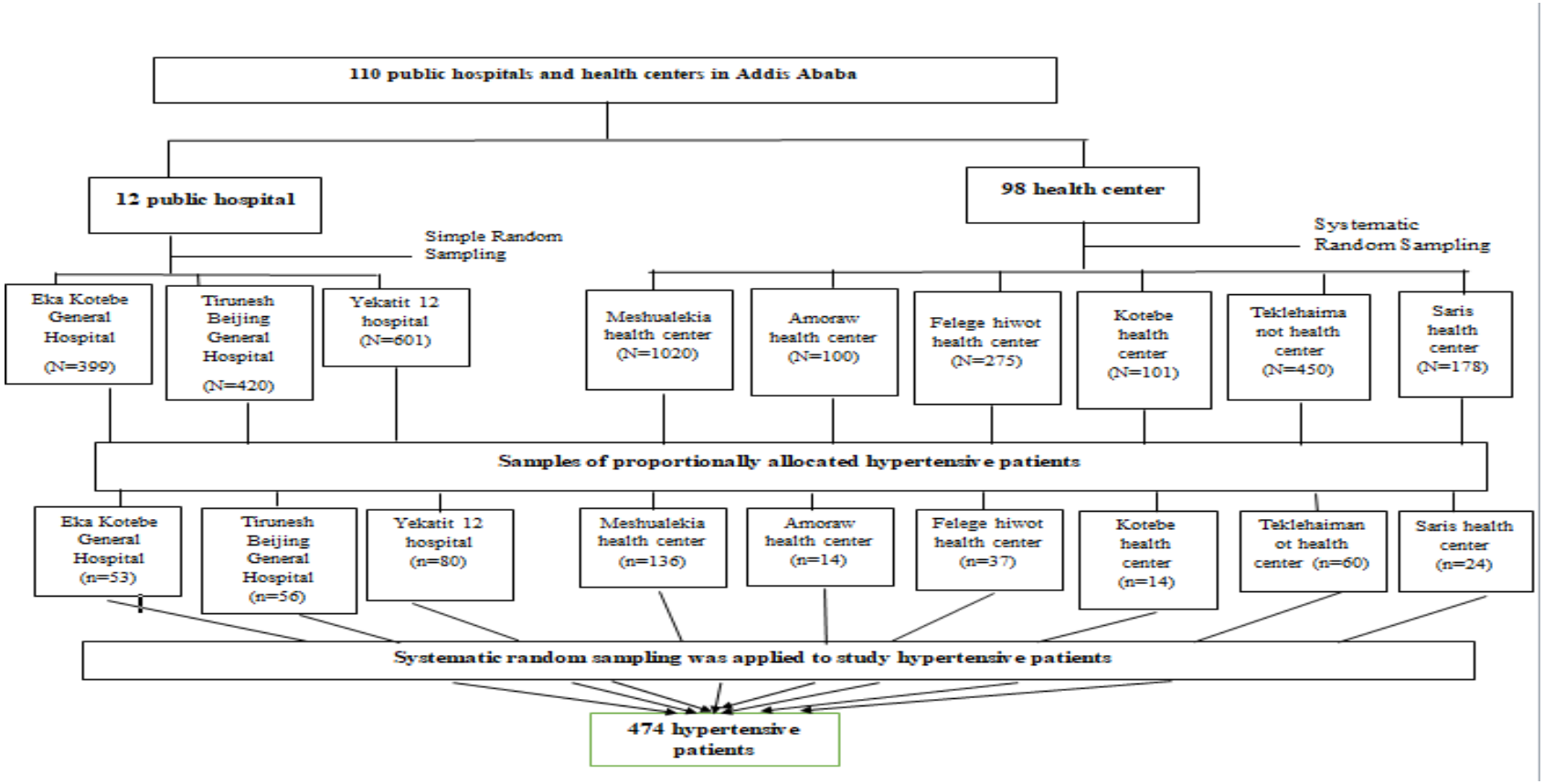

Figure 2: The schematic presentation of sampling procedure

4.6 Study Variables

4.6.1 Dependent variables

The dependent variable was blood pressure control (classified as yes or no). According to the American College of Cardiology (ACC) and the AHA guidelines, blood pressure was considered controlled when SBP measured <130 mm Hg and DBP measured <80 mm Hg. Patients meeting both criteria were classified as having controlled blood pressure, while those exceeding either threshold were categorized as uncontrolled (1).

4.6.2 Independent variables

The primary independent variable was the frequency of EAFH, where participants reported their consumption patterns of meals prepared outside the home, including fast-food, sit-down restaurant meals, takeaway foods, and buffet meals. The frequency was categorized as low (eating away from home less than 3 times per week), and high (eating away from home 3 or more times per week) (70).

Several potential confounders were considered for adjustment, including socio demographic factors (age, sex, marital status, education level, occupation, household income, and personal income), clinical characteristics (duration since hypertension diagnosis, comorbidities such as diabetes and heart disease, medication adherence, and follow-up frequency), and behavioral factors (physical activity levels of vigorous or moderate intensity, sedentary behavior, substance use including tobacco, alcohol, and khat).

In addition, some key variables that can be considered as mediators between the exposure and outcome of interest were also measured. These included salt intake, fruit and vegetable consumption, and nutritional status as measured by BMI.

4.7 Data Collection procedures and tools

4.7.1 Data Collection procedures

The data was collected from January to march 2025, by interviewing respondents based on a structured questionnaire. Before the data was gathered, pretest was conducted on a sample of hypertensive patients from Hidasse Health Center which was not included in the study. Data was collected by 4 nurses, and they took training for 2 days about the overall purpose, method and procedures of the study and the importance of accurate data collection. The training specifically

emphasized on the content of the questionnaire and how to use the digital Kobo Toolbox app for data collection. Patients were interviewed during their scheduled follow-up appointments. Data collection took place on the days from Monday to Friday, and the patients were interviewed by the data collectors using the structured questionnaires. Blood pressure and anthropometric measurements were taken after the interview was completed.

4.7.2 Data collection tools

Data collectors utilized Kobo Toolbox app to collect information using the uploaded questionnaire to the Kobo server. The structured questionnaire was comprised of questions on demographic and socio-economic information, clinical characteristics, behavioral factors, dietary factors, eating away from home and measurements.

Demographic and socio-economic information: comprised of sex, age, marital status, level of education, occupation and monthly household income.

Clinical characteristics: assessed hypertension diagnosis, comorbidities, and medication use by interviewing the participants. Respondents reported when they were diagnosed, other chronic conditions such as diabetes or heart disease, current medication status, and blood pressure monitoring. Questions were adapted from World health organization (WHO) STEPS survey instruments (116).

Behavioral factors: Focused on physical activity, tobacco and alcohol consumption, and khat use. Physical activity was assessed by using the WHO Global Physical Activity Questionnaire by assessing time spent in moderate and vigorous-intensity activities across work, travel, and recreational domains, and was classified as sufficient or insufficient based on WHO/STEPs thresholds of at least 150 minutes of moderate or 75 minutes of vigorous activity per week, or an equivalent combination. Tobacco and alcohol use were assessed using STEPS questions on frequency, quantity, and initiation. Khat use was measured by frequency and quantity using standardized questionnaire (117) .

Dietary factors: assessed through questions adapted from WHO STEPS dietary modules, focusing on salt intake and fruit and vegetable consumption. Fruit and vegetable intake was assessed on the frequency and quantity over the past week and categorized by average daily servings, while salt intake was evaluated through self-reported frequency of use during cooking, salt-limiting practices, and reduction methods.

Anthropometric measurement

Height and weight were recorded to calculate BMI, which is an essential indicator for hypertension. Height was measured using a stadiometer, by making sure that the individual stands straight with heels together, back against the wall, and looking straight ahead and the measurement will be recorded to the nearest millimeter. Weight was measured using a calibrated digital scale, with the individual standing still in the center of the scale, wearing minimal clothing for accuracy. These measurements were used to calculate the BMI using the formula: BMI = weight (kg) / height (m^2).

Blood pressure control was coded as a binary outcome variable, where 1 represented uncontrolled hypertension (systolic blood pressure ≥ 130 mm Hg or diastolic blood pressure ≥ 80 mm Hg) and 0 represented controlled hypertension (SBP < 130 mm Hg and DBP < 80 mm Hg). This classification followed the clinical guidelines established by the ACC and the AHA. Participants with measurements meeting or exceeding the threshold for either SBP or DBP were categorized as having uncontrolled blood pressure, while those below both thresholds were classified as controlled (1).

Blood pressure measurement

Blood pressure was measured using sphygmomanometer. Prior to measurement; the patient was seated comfortably with their back supported, feet flat on the floor, and the arm at heart level (118). Blood pressure was measured using Yuwell digital sphygmomanometers, which were clinically validated according to international protocols. Two consecutive readings were obtained 1-2 minutes apart to account for potential variability, with both values recorded. The final reported blood pressure value represented the average of these two readings.

Physical activity measurement

Physical activity was assessed based on self-reported engagement in physical exercise during work, transportation, and leisure time, following the WHO Global Physical Activity Questionnaire (117). Participants were asked to report the average time spent per day in physical activities of varying intensities, including moderate and vigorous activities as well as time spent sitting, walking or cycling for recreation or transport.

4.7.2.1 Measuring eating away from home

Eating away from home frequency was assessed using a standardized questionnaire with slight adaptation (119). Questions were asked about the number of times participants have eaten out in the past month, the types of foods consumed, and the reasons for choosing to eat away from home. Participants were asked a series of questions covering the frequency, type and context of meals consumed outside the home over the past 7 days and 30 days.

Specifically, frequency-based questions assessed how often participants purchased meals from various sources, including fast-food restaurants (e.g. chips, sandwiches, doughnuts, burgers, pizza, and fried foods), sit-down restaurants, and all-you-can-eat buffets. The response options ranged from never or rarely to 3 or more times per day to capture varying consumption levels.

Participants also reported the number of main meals (breakfast, lunch, and dinner) consumed outside the home in the past 7 days. Additionally, the frequency of takeaway food consumption and the types of takeaway meals typically consumed were recorded, including fast-food, casual dining, street foods (such as injera, kokor, pasti, bonbolino), baked goods, and sweets or snacks. The tool also included questions about motivations or reasons for eating away from home. The participants were also asked about their knowledge and attitude of EAFH and hypertension management.

4.8 Operational definitions

Eating away from home: includes consuming meals, snacks, and beverages obtained from both commercial and noncommercial food service establishments (e.g., schools, cafeterias). This includes dining at restaurants, cafes, and fast-food outlets, where food is prepared and served for immediate consumption. Additionally, it also covers noncommercial settings such as schools, hospitals, and workplaces, where food is provided through catering services or on-site cafeterias, as well as street food and snacks from small local retail outlets (120).

EAFH frequency index: Based on inflection point analysis of blood pressure control across categorized frequencies of eating away from home, after cross tabulating them, the threshold for increased risk was observed at ≥3 times per week. Thus, frequency of EAFH was dichotomized into high (≥3 times/week) and low (<3 times/week) for further analysis.

Blood Pressure Control: is a binary variable indicating whether the patient's blood pressure is controlled (e.g., within recommended guidelines) or uncontrolled. According to the ACC and the AHA, controlled blood pressure is defined as having a SBP of less than 130 mm Hg and a DBP of less than 80 mm Hg and for this study this cutoff is used. Therefore, a patient is considered to have controlled blood pressure if their measurements fall within these recommended ranges; otherwise, they are classified as having uncontrolled blood pressure (1).

Total comorbidity index: the number of comorbidities reported by each participant is counted (excluding no comorbidity), and then categorized as follows: individuals with only one comorbid condition are classified as one comorbidity, those with exactly two are classified as two comorbidities, and those with three or more are classified as three comorbidities (121).

Clinical characteristics index: This variable was developed as a composite measure based on responses to three questions related to hypertension management: current use of antihypertensive medication (Q204), frequency of blood pressure monitoring (Q205), and regularity of follow-up visits to healthcare facilities (Q206). Participants were categorized as having high control if they reported currently taking medication, monitoring BP at least twice per week, and attending follow-up as scheduled or frequently (weekly/monthly). Moderate control included participants who met two of the three criteria, while those meeting one or none were classified as having low control. This categorization is consistent with WHO recommendations (135).

Physical activity: refers to the average number of hours spent engaging in physical exercise each day or week. It includes all forms of movement, whether during leisure, commuting to and from locations, or as part of work or household tasks (122).

Vigorous-intensity physical activity: refers to any form of exercise that increases breathing or heart rate, such as running, aerobics, fast cycling, or competitive sports (123).

Moderate-intensity physical activity: refers to exercise that causes increase in heart rate and breathing, such as brisk walking, dancing, leisurely cycling, or gardening (123).

Recreational walking or cycling: refers to walking or cycling performed during leisure time, not as a means of transportation or as part of work, at either moderate or vigorous intensity (123).

Sedentary behavior: refers to any waking activity done while sitting, reclining, or lying down that involves very little physical movement and low energy use (123).

According to the WHO 2020 Guidelines on physical activity and sedentary behavior, adults aged 18 to 64 years are recommended to engage in at least 150 to 300 minutes of moderate-intensity aerobic physical activity per week. Alternatively, adults are recommended to perform 75 to 150 minutes of vigorous-intensity aerobic physical activity each week. A combination of moderate and vigorous-intensity activities can also be performed to meet these guidelines, as long as the total amount of activity is equivalent to the recommended levels (123).

Physical activity Index: According to the STEPS/ global physical activity questionnaire guidelines, adults are considered sufficiently active if they do at least 150 minutes of moderate or 75 minutes of vigorous activity per week, or a combination of both, in bouts of at least 10 minutes. Activity can come from work, transport, or recreation. Those not meeting these thresholds are classified as having insufficient physical activity (125).

Tobacco consumption index: was assessed using a series of questions (Questions 317–321) that captured current smoking status, daily smoking habits, age of initiation, duration since initiation, and quantity of tobacco products consumed daily. For analysis purposes, responses were later merged into two categories as doesn't smoke (if they doesn't use any tobacco products) and current smoker(if they reported currently smoking any tobacco product) (124).

Alcohol consumption index: Alcohol consumption was categorized as doesn't consume, "Light drinker, Moderate drinker, and Heavy drinker, based on the frequency and quantity of standard alcoholic drinks consumed. Individuals who do not consume alcohol or have not consumed alcohol in the past year are considered non-drinkers. Light drinkers are those who consume up to three standard drinks per week. Moderate drinking is defined as consuming between four and fourteen standard drinks per week for men, and between four and seven standard drinks per week for women. Heavy drinking refers to alcohol consumption that exceeds fourteen standard drinks per week for men, or more than seven standard drinks per week for women (125).

Alcohol consumption for a single occasion in the past 30 days was categorized as follows: Doesn't consume refers to individuals who reported no alcohol intake during the period; low consumption includes those who had 1–2 standard drinks on one occasion; binge drinking refers to individuals consuming 5 or more drinks for men, or 4 or more for women, on a single

occasion; and high-intensity drinking involves drinking two or more times the binge threshold (i.e., 10+ drinks for men or 8+ for women) (126).

Khat consumption index: From the questionnaires (330-332) merged into four as non-consumers, light, moderate and heavy consumers. Non-consumers are individuals who do not use khat at all. Light chewers are those who consume khat infrequently, typically on special occasions, weekends, or fewer than two to three times per week and do not incorporate it into their regular daily routines. Moderate chewers are those who typically consume about one bundle of khat in a single session, while heavy chewers are individuals with a history of chewing two or more bundles per session (127).

Fruit and vegetable consumption index :(404 and 405) was categorized based on the number of days participants reported consuming each item over the past week, using questions adapted from the WHO STEPS instrument. Responses were grouped as follows: no consumption (0 days), minimal consumption (1–2 days), moderate consumption (3–4 days), frequent consumption (5–6 days), and daily consumption (7 days). This approach is consistent with WHO STEPS dietary surveillance methods (116).Based on WHO recommendations of fruits and vegetables intake per day (406 and 407), intake was categorized as follows: very low (<2 servings/day), low (2–3 servings/day), moderate (4 servings/day), and high (≥5 servings/day). Average daily intake was calculated by dividing the total number of servings reported over the past week by seven (138).

Body Mass Index (BMI): is a metric calculated from an individual's height and weight, which helps categorize people into groups like underweight, normal weight, overweight, or obese. According to standard classifications, a BMI < 18.5 is considered underweight, 18.5–24.9 is normal weight, 25.0–29.9 is overweight, and ≥ 30.0 is obese (128).

4.9 Data management and analysis

The collected data was exported from the Kobo Toolbox app and subsequently imported into SPSS for further analysis. The data was examined for outliers and adjusted as necessary. For analysis, multiple related variables were combined into indices or categorized variables, including total comorbidity, clinical characteristics, physical activity, tobacco and alcohol use, khat consumption, eating away from home frequency, and BMI, based on standard guidelines and prior literature. Descriptive statistics was used to summarize the demographic and socio-

economic variables, clinical characteristics, behavioral factors, eating habits and blood pressure level of the participants. Logistic regression analysis was employed to assess the relationship between frequency of eating away from home and blood pressure control.

Candidate variables for adjustment in the multivariable model were selected based on a combination of theoretical relevance, evidence from previous literature, and statistical criteria from the bivariate analysis. These included socio-demographic characteristics (age, sex, marital status, education, occupation, and income), clinical indicators (duration of hypertension and clinical characteristics), and behavioral factors (physical activity and substance use such as alcohol, tobacco, and khat). Dietary factors like salt intake and fruit and vegetable consumption, as well as nutritional status assessed through BMI, were not included as these may mediate or confound the observed relationship.

Odds ratios and 95% confidence intervals for each potential confounder were identified. After these variables were selected, they were incorporated into the logistic regression model as covariates. Independence of observations, outliers and multicollinearity were checked.

The model achieved moderate predictive performance with an overall classification accuracy of 73.9%. It was highly effective in identifying uncontrolled blood pressure cases (91.8%; 291 out of 317) but less so for controlled cases (34.3%; 49 out of 143), indicating stronger sensitivity for high-risk individuals. The model was statistically significant, as shown by the Omnibus Test of Model Coefficients ($\chi^2 = 67.557$, df = 42, p = 0.007), confirming that at least one predictor contributed meaningfully. Its explanatory power was moderate, with Cox & Snell $R^2 = 0.137$ and Nagelkerke $R^2 = 0.192$. The Hosmer and Lemeshow Test ($\chi^2 = 4.271$, df = 8, p = 0.832) indicated a good fit between predicted and observed outcomes.

4.9 Data quality management

Data collectors were trained for two days about how they are going to conduct the data collection and about the questionnaire. The training was given by the principal investigator. Kobotool Box was used by the supervisor and investigator to carefully monitor the data collection process and ensure its completeness. The questionnaire was prepared in English and was translated to local language Amharic. Pre-testing of the questionnaire was conducted. After the data was collected and cleaned, the completeness was checked by verifying that all required fields and records were present.

4.10 Ethical Considerations

Ethical clearance was obtained from the Research Ethics Committee, School of Public Health, Addis Ababa University and Addis Ababa City Administration Health Bureau. Ethical approval and necessary permissions were obtained from the selected health institutions. A clear explanation of the study's purpose, potential risks, and benefits was provided to the participants, along with information about their right to take part voluntarily. Participants were assured that they could withdraw their consent and stop participating at any time without any negative consequences. To protect their privacy, the data was collected anonymously. The participants were neither subjected to any harm nor received direct benefits, apart from contributing to the advancement of the research.

4.11 Dissemination of results

Findings of this study will be submitted to Addis Ababa University, School of Public Health, Department of Public Health Nutrition and Dietetics. The results shall also be disseminated to Addis Ababa City Administration Health Bureau, Ethiopian Heart Association and published on local or international journals through formal publication.

5. Results

5.1 Demographic and socio-economic characteristics

A total of 460 hypertensive patients participated in the study from nine health institutions (3 public hospitals and 6 health centers), yielding a 97% response rate. More than half (60%) of respondents were from health centers, while the rest 40% were from public hospitals. Gender-wise, the male to female ratio was 1.12. The mean age of the respondents was 50.6 (±11.1) years and more than three-fourth (73.5%) were above the age of 45 years. Over half (54.3%) were currently married, and 49.6 % had attained tertiary-level education. Nearly half (45.4%) were employed in professional, technical, or managerial roles. Regarding income, the median household income in a typical month was 15,000 ETB and ranged from less than 10,000 to 19,999 ETB (Table 1).

Table 1: Demographic and socio-economic characteristics of hypertensive patients in Addis Ababa, January–March 2025

Variables	Frequency (n=460)	Percent
Sex		
Male	243	52.8
Female	217	47.2
Age in years		
25-34	37	8.0
35-44	85	18.5
45-54	163	35.4
55-64	70	25.9
Above 65	56	12.2
Marital status		
Currently married	250	54.3
Never married	61	13.3
Divorced	59	12.8
Widowed	55	12.0
Separated	35	7.6
Level of education		
Can’t read and write	18	3.9
Can read and write	43	9.3
Primary education (1-4)	16	3.5
Primary education (5-8)	40	8.7
Secondary education (9-12)	115	25.0
Tertiary education	228	49.6
Occupation		
Professional/technical/managerial	209	45.4
Sales and services	74	16.1
Unemployed/Jobless	67	14.6
Skilled manual	50	10.9
Unskilled manual	34	7.4
Domestic service	26	5.7
Household income (in ETB)		
Less than 10,000	151	32.8
10,000 - 19,999	235	51.1
20,000 - 29,999	49	10.7
30,000 - 39,999	17	3.7
40,000 or more	8	1.7
Personal income (in ETB)		
Less than 5,000	79	17.2
5,000 - 9,999	268	58.3
10,000 - 19,999	81	17.6
20,000 - 29,999	23	5.0
30,000 - 39,999	9	2.0

5.2 Clinical characteristics

More than half were diagnosed with hypertension one year before or earlier. A significant portion (35%) of participants had no comorbidities, while a smaller proportion reported obesity (6.7%) and diabetes (4.6%) as comorbid conditions. Among complications, stroke (23%) was the most frequently reported, followed by heart disease (16.1%) and chronic kidney disease (10.2%). Nearly half (47.4%) were not on medication for other chronic conditions. Most participants (78.3%) were currently on hypertension medication, while 17.6% had previously used such medication. Regular blood pressure monitoring at least twice a week was reported by 56.7%, indicating relatively good self-monitoring behavior. Regarding follow-up frequency, monthly (28.9%) and every three months (24.8%) were the most common follow-up schedules, although 18.3% reported that they followed provider-scheduled visits (Table 2).

Table 2: Clinical characteristics of hypertensive patients in Addis Ababa, January–March 2025

Variables	Frequency (n=460)	Percent
Time since hypertension diagnosis		
Within the last 6 months	105	22.8
6 months to 1 year ago	98	21.3
1 to 3 years ago	95	20.7
More than 3 years ago	118	25.7
I don't remember	44	9.6
Comorbid conditions associated with hypertension*		
No comorbidity	161	35.0
Obesity	31	6.7
Diabetes	21	4.6
Complications*		
Stroke	106	23.0
Heart disease	74	16.1
Chronic kidney disease	47	10.2
Medications use for other chronic condition		
Yes	242	52.6
No	218	47.4
Medication use history (n=460)		
Currently on HTN medication	209	45.4
Previously on HTN medication	74	16.1
Prescribed medication but not started	50	10.9
Not prescribed any HTN medication	34	7.4
Blood pressure monitoring at least twice a week		
Yes	261	56.7
No	199	43.3
Follow up frequency (n=460)		
Weekly	90	19.6
Monthly	133	28.9
Every 3 months	114	24.8
Every 6 months	36	7.8
Annually	3	0.7
As scheduled by the healthcare provider	64	18.3

*- Multiple response possible

5.3 Level of physical activity

The majority of the participants had a high level of total physical activity (51.3%), while 5.9% had moderate and 42.8% had low physical activity levels. Only 12.4% engaged in vigorous-intensity activity, while 25% of them were engaged in moderate-intensity exercise. Time spent in work-related, recreational, and transport physical activities was low, with 89.8% not engaging in

vigorous work activity and 89.6% not participating in vigorous recreational activity. Sedentary behavior was significant, with 46.1% reporting the high level of sedentary time (Table 3).

Table 3: Total physical activity of hypertensive patients in Addis Ababa, January–March 2025

Variables	Frequency (n=460)	Percent
Total physical activity level		
Low	197	42.8
Moderate	27	5.9
High	236	51.3
Activities		
Vigorous-intensity activity	57	12.4
Moderate-intensity activity	115	25.0
Walking/bicycle for travel	248	53.9
Vigorous-intensity sports, fitness or recreational (leisure) activities	48	10.4
Sedentary activity	212	46.1

5.4 Substance use history

Regarding substance use, tobacco consumption was relatively low, with 92% reporting they have not ever used tobacco. Among users, 1.7% were daily smokers, and manufactured cigarettes were the most common type (7.0%). Alcohol consumption was more prevalent, with 30.4% reporting use in the past 12 months and 27.8% in the last 30 days. Notably, 8.7% reported binge drinking, and 3% engaged in high-intensity drinking. Khat use was reported by 19.6% of participants, with 8.9% chewing daily and 9.1% consuming moderate amounts per session. Overall, substance use patterns indicate low tobacco and khat consumption with moderate alcohol use among the participants (Table 4).

Table 4: Substance use among hypertensive patients in Addis Ababa, January–March 2025

Variables	Frequency (n=460)	Percent
Current tobacco use		
Yes	37	8.0
No	423	92.0
Daily tobacco use		
Doesn't smoke	423	92.0
Yes	29	6.3
No	8	1.7
Years of smoking		
Doesn't smoke	423	92.0
Short term smoking	4	0.9
Long term smoking	33	7.2
Type of smoke		
Doesn't smoke	423	92.0
Manufactured cigarettes	32	7.0
Hand-rolled cigarettes	3	0.7
Cigars, cheroots, cigarillos	2	0.4
Ever consumed alcohol		
Yes	143	31.1
No	317	68.9
Past 12 months alcohol consumption		
Doesn't consume	317	68.9
Yes	140	30.4
No	3	0.7
Number of occasions of alcohol consumption in the past 12 months		
Doesn't consume	317	68.9
Daily	23	5.0
5-6 days per week	7	1.5
1-4 days per week	41	8.9
1-3 days per month	45	9.8
Less than once a month	27	5.9
Alcohol consumption in the past 30 days		
Doesn't consume	317	68.9
Yes	128	27.8
No	15	3.3
Average standard drinks per occasion in the past 30 days		
Doesn't consume	328	71.3
Infrequent	62	13.5
Occasional	46	10.0
Frequent	24	5.2
One occasion Standard drinks		
Doesn't consume	328	71.3
Low risk consumption	62	13.5

Moderate risk consumption	46	10.0
High risk consumption	24	5.2
Largest number of drinks on a single occasion in the past 30 days		
Doesn't consume	328	71.1
Low consumption	79	17.1
Binge drinking	40	8.7
High-intensity drinking	14	3.0
Khat use		
Yes	90	19.6
No	370	80.4
Frequency of khat use		
Doesn't consume	370	80.4
Daily	41	8.9
Three times a week	26	5.7
Once a week	16	3.5
Once a month	7	1.5
Amount of khat chewed per session		
Doesn't consume	370	80.4
Mild	39	8.5
Moderate	42	9.1
Heavy	7	1.5
Don’t remember	2	0.4

5.5 Prevalence of overweight and obesity

In terms of BMI, more than half of the participants (56.3%) had a normal weight (BMI 18.5–24.9). However, a substantial portion were either overweight (30.7%) or obese (12.0%), indicating a considerable burden of excess weight among hypertensive patients. Only a small fraction (1.1%) was underweight (BMI < 18.5) (Figure 3).

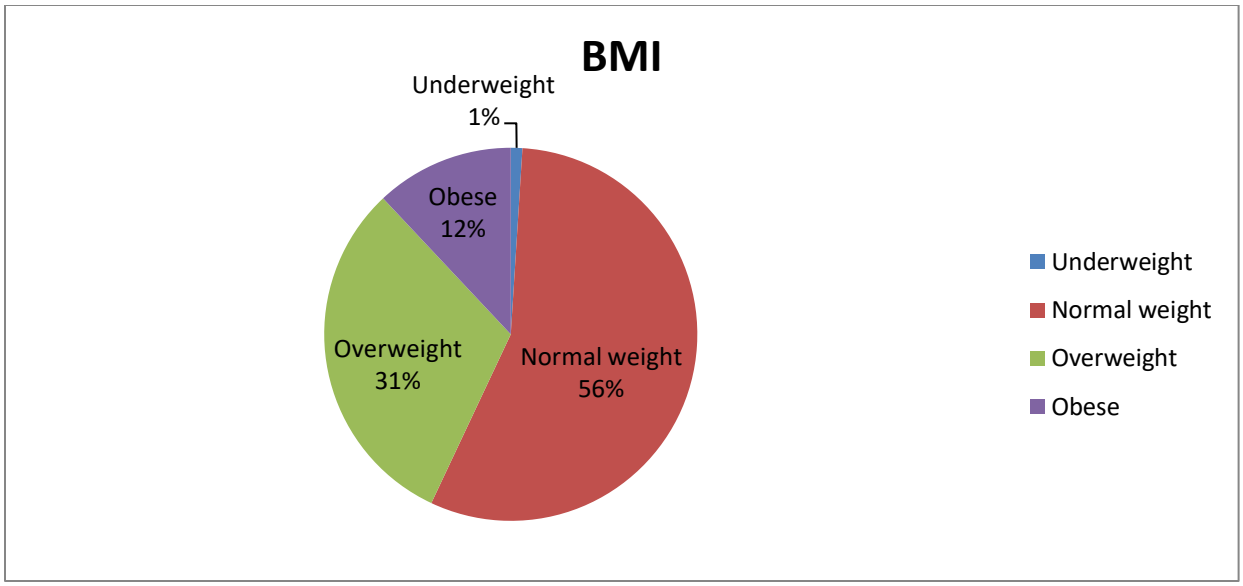

Figure 3: Anthropometric measurement of hypertensive patients in Addis Ababa, January–March 2025

5.6 Dietary habits

The dietary patterns of the hypertensive patients show significant variations in salt use, fruit and vegetable intake, and methods used to reduce salt in their diet. A majority (69.8%) actively limited their salt intake, while 38.3% reported adding less salt while cooking as a method to reduce their intake.

Fruit and vegetable consumption remained low overall. About 17.8% and 11.3% of participants reported no fruit or vegetable intake, respectively, in the past week. Only 3.7% consumed fruits daily, while 10.2% consumed vegetables daily. When categorized by average daily intake, 55.4% had very low fruit consumption (<2 servings/day), and 16.3% had very low vegetable consumption. Only 3.5% of participants met the WHO-recommended intake of five or more servings per day (Table 5).

Table 5: Dietary pattern of hypertensive patients in Addis Ababa, January–March 2025

Variables	Frequency (n=460)	Percent
Limit salt intake in any way		
Yes	321	69.8
No	139	30.2
Methods used to reduce salt in diet*		
Avoid processed foods	207	45.0
Add less salt during cooking	176	38.3
Avoid salty snacks	158	34.3
Fruit consumption days per week		
No consumption	82	17.8
Minimal consumption	153	33.3
Moderate consumption	138	30.0
Frequent consumption	70	15.2
Daily consumption	17	3.7
Vegetable consumption days per week		
No consumption	52	11.3
Minimal consumption	155	9.3
Moderate consumption	139	3.5
Frequent consumption	67	8.7
Daily consumption	47	25.0
Fruit servings per occasion		
Very low intake	255	55.4
Low intake	170	37.0
Moderate intake	30	6.5
High intake	5	1.1
Vegetable servings per occasion		
Very low intake	75	16.3
Low intake	195	42.4
Moderate intake	137	29.8
High intake	53	11.5

*- Multiple response possible

5.7 Knowledge and attitude of the participants about eating away from home

A majority of participants (73.3%) were aware of dietary recommendations related to hypertension management, such as limiting salt intake and increasing fruit and vegetable consumption. Additionally, 72.8% believed that eating away from home could affect blood pressure control, with 60.4% specifically thinking that it could have a negative impact (Table 6).

Table 6: Knowledge and attitude of hypertensive patients about EAFH in Addis Ababa, January–March 2025

Variables	Frequency (n=460)	Percent
Dietary recommendations awareness (e.g. low salt, more fruits/vegetables intake)		
Yes	337	73.3
No	123	26.7
Belief that eating away from home affects blood pressure control		
Yes	335	72.8
No	125	27.2
How eating away from home affects blood pressure		
Not sure	125	27.1
Positively affects	57	12.5
Negatively affects	278	60.4

5.7.1 Blood pressure control status by level of knowledge and attitude toward Eating Away from Home (EAFH)

A high proportion of participants had uncontrolled blood pressure regardless of how they perceived the effect of EAFH on blood pressure. Among those who gave no answer or believed EAFH affects BP positively, over 70% had uncontrolled BP. Even among those who correctly perceived EAFH as having a negative effect, 66.2% had uncontrolled BP (Table 7).

Table 7: Perception of the Effect of Eating Away from Home on Blood Pressure Among Hypertensive Patients in Addis Ababa, January–March 2025

Variable	Uncontrolled BP (%)
How eating away from home affects blood pressure	
Not sure	73.6%
Positively affects	71.9%
Negatively affects	66.2%

5.8 Eating away from home frequency

Eating away from home comprises the intake of foods or beverages obtained and prepared outside one's household. This includes meals, snacks, or drinks purchased from commercial food outlets such as restaurants, fast-food chains, street vendors, workplace or school cafeterias, and similar establishments. It also covers prepared foods ordered for takeaway or home delivery, even if it is consumed at home.

In this study, a composite index of eating away from home EAFH was created by aggregating nine questions on the frequency, type and reasons for consuming food prepared outside the home. Participants were classified as having low EAFH frequency if they reported eating out fewer than three times per week, and high EAFH frequency if they did so three or more times per week. According to this definition, 24.6% of participants had high EAFH frequency (Table 8).

Table 8: Frequency of eating away from home by food type among hypertensive patients in Addis Ababa, January–March 2025

	Frequency of eating away from home (n = 460)								
Type of Food/Setting	**Never/Rarely**	**1×/Month**	**2–3×/Month**	**1–2×/Week**	**3–4×/Week**	**5–6×/Week**	**1×/Day**	**2×/Day**	**≥3×/Day**
Fast-food restaurant	90 (19.6%)	48 (10.4%)	40 (8.7%)	51 (11.1%)	25 (5.4%)	35 (7.6%)	80 (17.4%)	25 (5.4%)	66 (14.3%)
Sit-down restaurant	92 (20.0%)	49 (10.7%)	41 (8.9%)	52 (11.3%)	26 (5.7%)	36 (7.8%)	81 (17.6%)	26 (5.7%)	67 (14.6%)
Buffet meals	250 (54.3%)	46 (10.0%)	35 (7.6%)	35 (7.6%)	22 (4.8%)	34 (7.4%)	23 (5.0%)	7 (1.5%)	8 (1.7%)
Sweet foods (prepared outside)	265 (57.6%)	51 (11.1%)	35 (7.6%)	45 (9.8%)	18 (3.9%)	20 (4.3%)	20 (4.3%)	5 (1.1%)	1 (0.2%)
Takeaway food	252 (54.8%)	51 (11.1%)	39 (8.5%)	40 (8.7%)	25 (5.4%)	10 (2.2%)	28 (6.1%)	8 (1.7%)	7 (1.5%)

Among those who ate away from home, the most commonly consumed food types were street foods such as Injera, Kokor, and Ertib (62.4%), followed by cakes and bakery items (42.4%) and fast-foods like burgers and fries (29.6%). The main reasons cited for eating out included taste preference (57.2%), convenience (50.4%), and socializing (43.9%) (Table 9).

Table 9: Types of meals consumed outside the home and motivational factors among hypertensive patients in Addis Ababa, January –March 2025

Variables	Frequency (n=460)	Percent
Eating meals prepared away from home number in the past week		
Never or rarely	257	55.9
Occasionally	90	19.6
Frequently	75	16.3
Very Frequently	38	8.3
Types of takeaway meals frequency*		
Fast-food such as Burgers, fries, chicken nuggets, pizza	93	20.2
Casual dining meals like international cuisines	125	27.2
Street foods like Injera,kokor or pasti, bonbolino and ertib	168	36.5
Cakes or bakeries	292	62.8
Sweets and snacks	92	20
Types of meals while eating away from home*		
Fast-food such as Burgers, fries, chicken nuggets, pizza	136	29.6
Casual dining meals like international cuisines	41	8.9
Street foods like Injera, kokor or pasti, bonbolino and ertib	287	62.4
Cakes or bakeries	195	42.4
Sweets and snacks	113	24.6
Reasons to eat away from home*		
Convenience	232	50.4
For socializing purpose	202	43.9
Peer influence	111	24.1
For luxury	120	26.1
Lack of cooking skills	72	15.7
Social media marketing	54	11.7
Taste preference	263	57.2
Busy lifestyle	162	35.2

* - Multiple response possible

5.9 Prevalence of uncontrolled hypertension

A significant proportion of the study population (68.9%, 95% CI: 64.7%-73.1%) had uncontrolled blood pressure. This indicates a high prevalence of uncontrolled hypertension among the participants. When examined by sex, the prevalence was relatively similar between males and females, with 64.6% of males and 73.7% of females having uncontrolled blood pressure. In terms of age distribution, the highest prevalence was observed among individuals aged 45–54 years (25.0%), followed by those aged 55–64 years (17.6%) and 35–44 years (13.0%) (Table 10).

Table 10: Blood pressure control status of hypertensive patients in Addis Ababa, January–March 2025

Variables	Total count	Uncontrolled (n)	Uncontrolled (%)
Blood pressure control	460	317	68.9
Sex			
Male	243	157	64.6
Female	217	160	73.7
Age			
25-34	37	23	5.0
35-44	85	60	13.0
45-54	163	115	25.0
55-64	119	81	17.6
65+	56	38	8.3

5.10 Association between frequency of eating away from home and blood pressure control

A binary logistic regression analysis was conducted to assess the association between the frequency of EAFH and blood pressure control among hypertensive patients in Addis Ababa, while adjusting for potential confounding variables including age, sex, BMI, income, physical activity, smoking, alcohol, khat consumption and comorbidities. The dependent variable was blood pressure control, categorized as controlled (coded as 0) and uncontrolled (coded as 1).

Individuals who eat away from home frequently have 2.02 times higher odds of uncontrolled blood pressure compared to those who eat away from home less often , indicating that frequent eating out is strongly associated with poorer blood pressure control (COR = 2.02; 95% CI: 1.31-3.11; AOR = 1.77; 95% CI: 1.04-3.00) (Table 11).

Table 11: Crude and Adjusted Odds Ratios for the association between frequency of eating away from home and blood pressure control in Addis Ababa, January–March 2025

Variables	**Blood pressure control**		**COR (95% CI)**	**AOR (95%CI)**
	Uncontrolled (n, %)	**Controlled(n, %)**		
EAFH frequency				
Low	70 (57.4%)	52 (42.6%)	1.00	1.00
High	247 (73.1%)	91 (26.9%)	2.02(1.31-3.11)*	1.77(1.04-3.00)*

The model was adjusted for sex, age, marital status, educational status, occupation, household income, diagnosis date of hypertension, total comorbidities, clinical characteristics, physical activity level, tobacco consumption, alcohol consumption, khat consumption and frequency of EAFH

* = Statistically significant

5.10.1 Comparison of the nutritional status and dietary pattern between individuals with high and low consumption of foods away from home

Among individuals who eat away from home and among individuals with high frequency of eating away from home, 56.6% are overweight or obese (BMI ≥ 25), while among those with low EAFH frequency, 37.6% are overweight or obese. Similarly, among individuals with high frequency of eating away from home, 74.9% had low fruit and vegetable consumption, while among those with low EAFH frequency, 56.5% had low fruit and vegetable consumption. This means that, among all people who eat away from home, a much higher proportion of those who eat frequently are overweight or obese and have low fruit and vegetable consumption compared to those who eat away from home less frequently (Table 12).

Table 12: Nutritional status and dietary patterns by frequency of eating away from home, Addis Ababa, January–March 2025

Variables	High EAFH frequency (%)	Low EAFH frequency (%)
BMI category		
Overweight or obese (BMI ≥ 25)	56.6	37.6
Fruit and vegetable consumption		
Low consumption	74.9	56.5

6. Discussion

In this study, EAFH was measured using a composite index incorporating frequency, type, and reasons for consuming food prepared outside home. The prevalence of high EAFH frequency, defined as eating out three or more times per week, was 24.6% among hypertensive patients in Addis Ababa. A significant association was found between frequent EAFH and poor blood pressure control showing that individuals who ate away from home frequently had 2.02 times higher odds of having uncontrolled blood pressure compared to those who ate out less often.

EAFH in this study was less prevalent, with 17.4% eating fast-food daily and 14.3% three or more times per day. According to the CDC, between 2013 and 2016, about 36.6% of U.S. adults consumed fast-food on any day or single 24-hour period (129). A study published in China reported that in 2017, the prevalence of eating out had increased to 55.6% among urban Chinese adults (130). A national survey found that 11.3% of South Africans frequently consumed street food, while 6.8% regularly ate fast-food (131). In Nigerian universities fast-food consumption is widespread, with 67% of students reporting daily consumption in one university (132). Contrasting with these above prevalences this study shows less prevalence of EAFH.

The trend of eating away from home is increasing, especially in urban areas like Addis Ababa, and is associated with unhealthy dietary patterns and poor BP control (133). In this study, high frequency of EAFH was associated with nearly double the odds of uncontrolled BP (AOR = 1.77, 95% CI: 1.04–3.00). When compared with international studies, the magnitude and direction of the association between EAFH and BP control of this study in Addis Ababa is consistent. For instance, a large cross-sectional study in rural China involving 29,611 adults found that eating away from home seven or more times per week was associated with a 67% higher risk of hypertension (OR = 1.67, 95% CI: 1.48–1.89), and this relationship showed a clear dose-response pattern (49). Similarly, in Singapore, a study among university students reported that each additional meal eaten away from home per week increased the odds of prehypertension or hypertension by 5–6% (OR = 1.05, 95% CI: 1.01–1.09) (94). These studies also noted that EAFH is linked to higher sodium intake, lower fruit and vegetable consumption, and, in the case of the Chinese study, that BMI mediated a significant portion of the relationship between EAFH and hypertension (74,134).

This study shows that frequent consumption of meals outside the home is associated with a decline in nutritional status and a higher risk of obesity. This finding is consistent with evidences from both Ethiopia and other countries. A recent systematic review and meta-analysis found that the combined prevalence of overweight and obesity among Ethiopian adolescents was 10% (95% CI: 9–12%), with higher rates observed among students in private schools likely due to increased access to calorie-dense, processed foods and fast-food outlets (135).

In this study, blood pressure control was defined using the 2017 ACC/AHA guideline cutoff of <130/80 mmHg. Despite this lower threshold, the control rate observed (31.1%) is comparable to findings from studies in Kenya (33.4%) (42), and the global PURE study (32.5%) (41), both of which used the conventional <140/90 mmHg cutoff. In contrast, some systematic reviews from Ethiopia have reported higher control rates (around 50%) (44,136), though these also applied the less strict threshold. The high prevalence of uncontrolled hypertension may indicate a need for more intensive monitoring, follow-up, and patient education by health care providers to improve treatment adherence and long-term control.

A 2024 systematic review and meta-analysis reported that the pooled prevalence of uncontrolled hypertension in Ethiopia was 51%. Specifically, in Addis Ababa, the prevalence of uncontrolled hypertension was even higher at 58%, corresponding to a BP control rate of approximately 42%. This figure is notably higher than our finding of 31.1% BP control (44). Another systematic review and meta-analysis also reported the pooled prevalence of uncontrolled hypertension in Ethiopia to be 48%, suggesting a BP control rate of about 52%. This national estimate is higher than our finding (54). This study is also comparable with other low-income African settings, where similarly low blood pressure control rates were reported in Kenya (33.4%), Cameroon (36.8%), and South Africa (42.0%) (74,136).

Dietary habits showed high salt use (80.7%) and low fruit and vegetable intake (3.7% consumed fruit daily and 10.2% consumed vegetables daily). Similar trends of poor dietary habits have been observed in different areas of Ethiopia. For instance, a national study conducted revealed that only 1.5% of Ethiopians met the WHO's recommendation of consuming five or more servings of fruits and vegetables daily, with rural residents having a slightly higher intake compared to those in urban areas (137). Among hypertensive patients in Addis Ababa, 80.1% consumed inadequate fruits and vegetables, and this low intake was associated with increased

cardiovascular risk (138). Another study in Ethiopia also showed that 88% add salt to food at home during cooking (139).

This study shows that fruit and vegetable consumption is lower among individuals who frequently eat away from home. Although there is a lack of evidence about this in Ethiopian studies, it contrasts with some international findings, such as those from the United States, where research has indicated that vegetable consumption can be higher when eating out(140). However, these findings are consistent with broader trends observed in low- and middle-income countries such as Burkina Faso, Ethiopia, Bangladesh, Tanzania, Nigeria, India, and Nepal. In these settings, eating away from home is relatively common especially among youth and migrants but the food consumed is often of poor nutritional quality, typically consisting of inexpensive, energy-dense staples that are filling yet lacking in essential nutrients such as fruits and vegetables. This mirrors the findings of the current study, where a lower intake of fruits and vegetables was associated with higher frequency of eating outside the home (141).

BMI analysis in this study revealed that 30.7% of participants were overweight and 12% were classified as obese. These results are consistent with other research conducted in the same setting and population. For instance, a 2023 study on adults in Addis Ababa reported that 29.7% of participants were overweight and 9% were obese, figures that closely resembles with these results (5). Similarly, a 2018 study conducted in Addis Ababa public health facilities found that 36.7% of participants were overweight and 10.8% were obese (142). A systematic review of over nutrition among hypertensive patients in south west Ethiopia reported that 29% were overweight and 7% were obese, while the general adult population had a lower prevalence of 20.4% overweight and 5.4% obese (143).

BMI showed that 30.7% of participants were overweight and 12% obese, but BMI was not a significant predictor of BP control in this study. A study conducted in US indicated that, higher BMI is a consistent risk factor for hypertension and poor control (144), though the lack of association here may reflect the influence of other confounding factors.

These results show how important eating habits are for managing blood pressure and suggest that health programs should think about not just what people eat, but also where they eat and what exactly they consume. Even if majority of the particpiants thought EAFH affects BP control negatively, this knowledge doesn't necessarily translate into practice. This discrepancy suggests a

potential disconnect between awareness and behavior, indicating a need to explore the underlying reasons why individuals, despite knowing better, still engage in dietary practices that negatively impact their blood pressure. A key area of uncertainty also lies in the source of excessive salt intake. It remains unclear whether the primary issue is uncontrolled salt usage in home-cooked meals or the consumption of high-sodium foods when eating away from home.

7. Strength and limitation of the study

As strength, firstly, its institutional-based cross-sectional design allows for a comprehensive assessment of dietary habits and blood pressure control within hypertensive patients. The use of standardized data collection tools elevates the reliability and validity of the findings. Additionally, the study attempted to address a problem that is largely unrecognized in a country like Ethiopia by investigating dietary practices and their impact on hypertension management in Ethiopia.

However, there are also limitations to consider. The cross-sectional nature of the study limits the ability to establish causal relationships between eating behaviors and blood pressure control, as it is not possible to determine directionality, whether frequent EAFH leads to poor BP control or vice versa. Self-reported behavioral and dietary habits may be subject to recall and social desirability bias, potentially affecting the accuracy of the data. Furthermore, the sample may not be fully representative of all hypertensive patients in the Addis Ababa, as it is drawn from selected health institutions.

8. Conclusion

This study explored the frequency of EAFH and its association with blood pressure control among hypertensive patients in Addis Ababa, Ethiopia. The findings showed that a significant proportion of participants (68.9%) had uncontrolled blood pressure, indicating a critical public health challenge. The study identified a strong association between frequent EAFH and poor blood pressure control, with individuals who ate out three or more times per week being nearly twice as likely to have uncontrolled hypertension compared to those who rarely dined out. The results align with both global and national evidence linking EAFH to unhealthy dietary patterns, including high sodium intake and low consumption of fruits and vegetables, which are detrimental to hypertension management.

9. Recommendations

As this study showed, not all participants were aware of the negative impact of eating away from home on blood pressure control, with only 60.4% of them recognizing it. Thus, a multifaceted approach is essential. Public health interventions should prioritize raising awareness among hypertensive patients about the adverse effects of frequent EAFH and promote the benefits of balanced, home-cooked meals. Policymakers must collaborate with food service providers to enforce nutritional guidelines that reduce salt content and encourage healthier preparation methods in restaurants and fast-food establishments in Addis Ababa. Healthcare providers should integrate dietary counseling into routine hypertension follow up care, by providing patients with practical strategies in order for them to make informed food choices. Additionally, community-based initiatives could include organizing workshops that teach individuals how to adopt healthier dietary habits, as well as using radio, social media, and community events to raise awareness about the risks of excessive EAFH and promote the benefits of home-cooked meals. Furthermore, further research, particularly longitudinal and qualitative studies are needed to deepen understanding of the cultural and socioeconomic factors influencing dietary behaviors and to evaluate the long-term impact of interventions.

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11. Annexes

Annex 1- Table of multivariable logistic regression analysis of the association between eating out frequency and blood pressure control, Addis Ababa, January-March 2025

Variables	Blood pressure control		COR (95% CI)	AOR (95% CI)
	Uncontrolled	controlled		
Sex				
Male	157	86	0.65(0.44-0.97)*	0.57(0.36–0.92)*
Female	160	57	1.00	1.00
Age in years				
25-34	23	14	0.78(0.33-1.85)	0.66 (0.22–1.98)
35-44	38	18	1.14(0.55-2.36)	1.30(0.52-3.27)
45-54	81	38	1.14(0.59-2.18)	1.00(0.46-2.20)
55-64	115	48	1.01(0.51-1.99)	1.24(0.52-2.66)
Above 65	60	25	1.00	1.00
Marital status				
Never married	36	25	0.64(0.29-1.39)	0.63(0.26-1.51)
Currently married	170	80	0.95(0.51-1.79)	0.89(0.43-1.85)
Divorced	38	17	1.58(0.68-3.67)	1.32(0.51-3.40)
Separated	27	8	1.51(0.57-4.00)	1.55(0.52-4.66)
Widowed	46	13	1.00	1.00
Level of education				
Can’t read and write	27	14	0.85(0.28-2.56)	0.81(0.23-2.86)
Can read and write	35	19	1.79(0.73-4.41)	1.89(0.68-5.25)
Primary education (1-4)	77	38	0.69(0.22-2.17)	0.93(0.25-3.41)
Primary education (5-8)	123	51	1.43(0.58-3.49)	1.62(0.57-4.57)
Secondary education	29	11	1.10(0.56-2.17)	0.97(0.46-2.13)

(9-12)				
Tertiary education	30	10	1.00	1.00
Occupation				
Professional/technical/ managerial	37	34	0.22(1.48-4.61)*	2.79(1.42-5.51)*
Sales and services	17	9	2.98(1.45-6.05)*	3.63(1.57-8.39)*
Skilled manual	150	59	2.65(1.21-5.78)*	1.99(0.83-4.84)
Unskilled manual	36	14	3.35(1.33-8.45)*	3.57(1.23-10.40)*
Domestic service	55	19	1.95(0.76-4.97)	2.01(0.57-6.05)
Unemployed/Jobless	26	8	1.00	1.00
Income (in ETB)				
Less than 10,000	12	13	1.25(0.28-5.44)	1.20(0.22-6.60)
10,000 - 19,999	102	49	1.44(0.34-6.26)	1.09(0.19-6.13)
20,000 - 29,999	66	62	1.85(0.38-8.91)	2.24(0.36-13.96)
30,000 - 39,999	45	55	0.42(0.07-2.36)	0.48(0.07-3.48)
40,000 or more	37	12	1.00	1.00
Diagnosis date of hypertension				
Within the last 6 months	57	38	1.65(0.78-3.51)	1.68(0.70-4.02)
6 months to 1 year ago	28	16	1.43(0.67-3.04)	1.79(0.75-4.24)
1 to 3 years ago	84	34	0.86(0.41-1.79)	1.07(0.46-2.45)
More than 3 years ago	70	28	1.41(0.67-2.94)	2.06(0.89-4.77)

I don't remember	78	27	1.00	1.00
Number of total comorbidities and complications				
No comorbidity and complication	11	15	0.56(0.26-9.50)	0.35(0.29-18.63)
One comorbidity and complication	96	44	1.45(0.23-9.02)	2.19(0.27-17.44)
Two or more comorbidity and complication	206	88	1.00	1.00
Clinical characteristics				
High control	144	69	1.10(0.54-2.27)	0.96(0.41-2.22)
Moderate control	28	13	0.96(0.47-1.99)	1.01(0.44-2.27)
Low control	145	61	1.00	1.00
Physical activity level				
Insufficient	148	76	0.77(0.52-1.15)	0.87(0.54-1.41)
Sufficient	169	67	1.00	1.00
Tobacco consumption				
Doesn’t smoke	17	20	2.86(1.45-5.66)*	3.27(1.26-8.48)*
Current smoker	300	123	1.00	1.00
Alcohol consumption				
Doesn’t	27	17	1.38(0.72-2.65)	1.19(0.56-2.55)

consume				
Light drinker	217	99	1.62(0.56-4.68)	4.67(1.26-17.32)*
Moderate drinker	18	7	1.73(0.78-3.83)	1.04(0.53-3.35)
Heavy drinker	55	20	1.00	1.00
Khat consumption				
Doesn't consume	11	12	0.91(0.51-1.62)	0.50(0.24-1.54)
Light	200	86	0.53(0.11-2.58)	0.33(0.06-1.95)
Moderate	48	19	0.31(0.10-0.95)*	0.15(0.04-0.53)*
Heavy	8	26	1.00	1.00
EAFH frequency				
Low	70	52	1.00	1.00
High	247	91	2.02(1.31-3.11)*	1.77(1.04-3.00)*

The model was adjusted for sex, age, marital status, educational status, occupation, household income, diagnosis date of hypertension, total comorbidities, clinical characteristics, physical activity level, tobacco consumption, alcohol consumption, khat consumption and frequency of EAFH

* = Statistically significant

Annex 2- Information sheet and consent form

Information sheet

Addis Ababa University, School of public health

Hello, my name is ———————————— I am here on behalf of Hana Shumetie, a student at Addis Ababa University's School of Public Health, conducting research for partial fulfillment of a Master's in Public Health Nutrition. This study is about Association between eating away from home frequency and blood pressure control among hypertensive patients in Addis Ababa, Ethiopia. She has received permission from Addis Ababa university school of public health and Addis Ababa health bureau to conduct this study. The purpose of this research is to determine how frequently eating away from home affects blood pressure control among hypertensive patients. Your participation will help to understand dietary habits and their impact on health in our community. Your participation is entirely voluntary. You have the right to refuse or withdraw from the study at any time without facing any negative consequences. The interview may take about 30-40 minutes. All information collected from you will be coded to ensure your privacy. Your data will only be used for this study and will not be shared with anyone outside the research team. You have the right not to answer any question which you do not want to answer. If you do not feel comfort with the interview, you can ask any questions or withdraw at any time you want. This study will be successful with your willingness and active participation.

Informed consent form

Based on the above information, are you willing to participate in this study?

A) Yes B) No

(1) If yes, I will continue and

(2) If no I will skip to next participant after writing the reasons of refusal ————— _____

Respondent Signature _____Date_____

Data collector

Name_____ Signature_____

Questionnaires ID number_____

Date of data collected_____

Result of data collected

A) Completed

B) Not completed

C) Partially completed

D) Refused

Checked by Supervisor:

Name _____Signature_____

For further explanation, use the Principal Investigator's Address;

Name: Hana Shumetie Abeje

Email: hsafb22@gmail.com Cell phone: +251 954987210

Annex 2- English version Questionnaire

Survey information

_____ Name of the hospital

_____ Interviewer ID

_____ Patient ID

_____ Data completion date

I. Demographic and socio-economic information

No	Questions	Responses	Remark
101	Sex	1. Male 2. Female	
102	What is your age?	_____ in years	
103	What is your marital status?	1. Never married 2. Currently married 3. Divorced 4. Separated 5. Widowed	
104	What is the highest level of school you have attended?	1. Can't read and write 2. Can read and write 3. Primary education (1-4) 4. Primary education (5-8) 5. Secondary education (9-12) 6. University or above 7. Technical or vocational	
105	What is your occupation?	1. Professional/technical/managerial 2. Sales and services 3. Skilled manual 4. Unskilled manual 5. Domestic service 6. Unemployed/Jobless 7. Other(specify) _____	
106	How much is your monthly household income?	_____ in ETB	

107	How much is your monthly income?	_____ in ETB	

II. Clinical characteristics

No	Questions	Responses	Remark
201	When were you diagnosed with hypertension?	1. Within the last 6 months 2. 6 months to 1 year ago 3. 1 to 3 years ago 4. More than 3 years ago 5. I don't remember	
202	Do you have any of the following comorbid conditions or complications associated with hypertension? (Select all that apply)	1. Diabetes 2. Obesity 3. Heart disease (like coronary artery disease) 4. Chronic kidney disease 5. Stroke 6. No comorbidity 7. Other(specify) _____	
203	If you have other chronic condition, do you take any medications for it?	1. Yes 2. No	
204	Which of the following best describes your current use of medication for hypertension?	1. Currently taking medication for hypertension 2. Previously took medication for hypertension but not currently 3. Have been prescribed medication but have not started taking it 4. Have not been prescribed any medication for hypertension	
205	Do you monitor your blood pressure at least twice a week?	1. Yes 2. No	
206	How often do you go to the health center or hospital for follow-up appointments for hypertension?	1. Weekly 2. Monthly 3. Every 3 months 4. Every 6 months 5. Annually 6. As scheduled by the healthcare provider	

III. Behavioral factors

No	Questions	Responses	Remark
3.1 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, seeking employment. In answering the following questions 'vigorous-intensity activities' are activities that require hard physical effort and cause large increases in breathing or heart rate, 'moderate-intensity activities' are activities that require moderate physical effort and cause small increases in breathing or heart rate.			
3.1.1 Work			
3.1.1.1 Vigorous-intensity physical activities			
301	Does your work involve vigorous-intensity activity (e.g., carrying heavy loads, construction work) for at least 10 minutes continuously?	1. Yes 2. No	If No, go to 304
302	In a typical week, on how many days do you do vigorous-intensity activities as part of your work continuously?	Number of days: _____	
303	How much time do you spend doing vigorous-intensity activities at work on a typical day continuously?	Hours: _____ Minutes: _____	
3.1.1.2 Moderate-intensity physical activities			
304	Does your work involve moderate-intensity activity (e.g., brisk walking, carrying light loads) for at least 10 minutes?	1. Yes 2. No	If No, go to 307

305	In a typical week, on how many days do you do moderate-intensity activities as part of your work?	Number of days: _____	
306	How much time do you spend doing moderate-intensity activities at work on a typical day?	Hours: _____ Minutes: _____	
3.1.2 Travel to and from places			
The next questions exclude the physical activities at work that you have already mentioned. Now I would like to ask you about the usual way you travel to and from places. For example, to work, for shopping, to market, to place of worship.			
307	Do you walk or use a bicycle (pedal cycle) for at least 10 minutes continuously to get to and from places?	1. Yes 2. No	If No, go to 310
308	In a typical week, on how many days do you walk or bicycle for at least 10 minutes continuously to get to and from places?	Number of days: _____	
309	How much time do you spend walking or bicycling for travel on a typical day?	Hours: _____ Minutes: _____	
3.1.3 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)			
310	Do you do any vigorous-intensity sports, fitness or recreational (leisure) activities that cause large increases in breathing or heart rate like (running or football]) for at least 10 minutes continuously?	1. Yes 2. No	If No, go to 313

311	In a typical week, on how many days do you do vigorous-intensity sports, fitness or recreational (leisure) activities?	Number of days: _____	
312	How much time do you spend doing vigorous-intensity sports, fitness or recreational activities on a typical day?	Hours: _____ Minutes: _____	
313	Do you do any moderate-intensity sports, fitness or recreational (leisure) activities that cause a small increase in breathing or heart rate such as brisk walking, (cycling, swimming and volley ball) for at least 10 minutes continuously?	1. Yes 2. No	If No, go to 316
314	In a typical week, on how many days do you do moderate-intensity sports, fitness or recreational (leisure) activities?	Number of days: _____	
315	How much time do you spend doing moderate-intensity sports, fitness or recreational (leisure) activities on a typical day?	Hours: _____ Minutes: _____	
3.1.4 Sedentary behavior			
The following question is about sitting or reclining at work, at home, getting to and from places, or with friends including time spent sitting at a desk, sitting with friends, traveling in car, bus, train, reading, playing cards or watching television, but do not include time spent sleeping.			
316	How much time do you usually spend sitting or reclining on a typical day?	Hours: _____ Minutes: _____	

3.2 Tobacco consumption			
Now I am going to ask you some questions about tobacco consumption			
317	Do you currently smoke any tobacco products, such as cigarettes, cigars or pipes?	1. Yes 2. No	If No, go to 322
318	Do you currently smoke tobacco products daily?	1. Yes 2. No	If No, go to 322
319	How old were you when you first started smoking?	1. ———— in years 2. Don't know / Not sure	
320	Do you remember how long ago it was?	———— in years ———— in months ———— in weeks	If known, go to 321(1)
321	On average, how many of the following do you smoke each day?	1. Manufactured cigarettes 2. Hand-rolled cigarettes 3. Pipes full of tobacco 4. Cigars, cheroots, cigarillos 5. Other (specify): _____	
3.3 Alcohol consumption			
Now I am going to ask you some questions about alcohol consumption			
322	Have you ever consumed an alcoholic drink such as beer, wine, spirits, fermented cider, Tej, Tella, Areke?	1. Yes 2. No	If No, go to 330
323	Have you consumed an alcoholic drink within the past 12 months?	1. Yes 2. No	If No, go to 330
324	During the past 12 months, how frequently have you had at least one alcoholic drink?	1. Daily 2. 5-6 days per week 3. 1-4 days per week 4. 1-3 days per month 5. Less than once a month	
325	Have you consumed an alcoholic drink within the past 30 days?	1. Yes 2. No	If no, go to 330
326	During the past 30		

	days, on how many occasions did you have at least one alcoholic drink?	1. ———— in number 2. Don't know / Not sure	
327	During the past 30 days, when you drank alcohol, on average, how many standard alcoholic drinks did you have during one drinking occasion?	1. ———— in number 2. Don't know / Not sure	
328	During the past 30 days, what was the largest number of standard alcoholic drinks you had on a single occasion, counting all types of alcoholic drinks together?	1. Largest number ———— 2. Don't know / Not sure	
329	During the past 30 days, how many times did you have for men: five or more for women: four or more standard alcoholic drinks in a single drinking occasion?	1. Number of times ———— 2. Don't know / Not sure	
3.4 Khat consumption			
Now I am going to ask you some questions about khat consumption			
330	Do you use Khat?	1. Yes 2. No	If no, go to 401
331	If yes, how frequent do you chew khat?	1. Daily 2. Three times a week 3. Once a week 4. Once a month 5. Don't remember	
332	What is the amount of khat you chew per session?	1. Mild 2. Moderate 3. Heavy 4. Don't remember	

IV. Dietary factors

No	Questions	Responses	Remark
4.1 Salt restriction			
401	How frequently do you use salt at your home while cooking?	1. Never 2. Rarely 3. Sometimes 4. Often 5. Always	
402	Do you regularly limit your salt intake?	1. Yes 2. No	
403	What methods do you use to reduce salt in your diet? (Select all that apply)	1. Avoid processed foods 2. Add less salt during cooking 3. Avoid salty snacks 4. Other (specify) _____	
4.2 Fruit and vegetable consumption			
404	Over the past week or 7 days, on how many days did you eat fruit?	1. Number of days ——— 2. Don't know / Not sure	
405	Over the past week or 7 days, on how many days did you eat vegetables?	1. Number of days ——— 2. Don't know / Not sure	

406	Over the past week or 7 days, how many servings of each type of fruit do you eat at each occasion?	1. Apples: • Small (1 small apple = 1 serving) • Medium (1 medium apple = 1 servings) • Large (1 large apple = 1.5-2 servings) • Servings: _____ 2. Bananas: • Small (1 small banana = 0.75 serving) • Medium (1 medium banana = 1 serving) • Large (1 large banana = 1.5 serving) • Servings: _____ 3. Oranges: • Small (1 small orange = 0.75 serving) • Medium (1 medium orange = 1 serving) • Large (1 large orange = 1.5 serving) • Servings: _____ 4. Berries: • Small (1/2 cup of berries = 0.5 serving) • Medium (1 cup of berries = 1 serving) • Large (1.5 cups of berries = 1.5 servings) • Servings: _____ 5. Grapes • Small (½ cup of grapes) = 0.5 servings • Medium (1 cup of grapes) = 1 serving • Large (1.5 cups of grapes) = 1.5 servings	

		• Servings: _____ 6. Mangoes: • Small (1 small mango) = 1 serving • Medium (1 medium mango) = 1.5–2 servings • Large (1 large mango) = 2.5–3 servings • Servings: _____	
407	Over the past week or 7 days, how many servings of each type of vegetables do you eat at each occasion?	1. Spinach (Cooked): • Small (½ cup) = 0.5 servings • Medium (1 cup) = 1 serving • Large (1.5 cups) = 1.5 servings • Servings: _____ 2. Carrots: • Small (1 small carrot) = 0.5 servings • Medium (1 medium carrot) = 1 serving • Large (1 large carrot) = 1.5 serving • Servings: _____ 3. Broccoli (Cooked): • Small (½ cup) = 0.5 servings • Medium (1 cup) = 1 serving • Large (1.5 cups) = 1.5 servings • Servings: _____	

		4. Tomatoes: • Small (½ medium tomato) = 0 servings • Medium (1 medium tomato) = serving • Large (1.5 medium tomatoes) = 1 servings • Servings: _____ 5. Peppers: • Small (½ medium pepper) = 0.5 serving • Medium (1 medium pepper) = 1 serving • Large (1.5 medium peppers) = 1.5 servings • Servings: _____ 6. Onions: • Small (½ medium onion) = 0.5 serving • Medium (1 medium onion) = 1 serving • Large (1.5 medium onions) = 1.5 serving • Servings: _____	

V. Eating away from home

No	Questions	Responses	Remark
501	Over the past 30 days, how many times did you buy food at a fast-food restaurant (Chips, sandwiches, doughnuts, pasty, burger, pizza, fried foods and ice cream)?	1. Never or rarely 2. 1 time per month 3. 2-3 times per month 4. 1-2 times per week 5. 3-4 times per week 6. 5-6 times per week 7. 1 time per day 8. 2 times per day 9. 3 or more times per day	
502	Not including the fast-food restaurants listed above, in the past 30 days, how many times did you buy food at any other sit down (full service) restaurant and order from a waiter/waitress?	1. Never or rarely 2. 1 time per month 3. 2-3 times per month 4. 1-2 times per week 5. 3-4 times per week 6. 5-6 times per week 7. 1 time per day 8. 2 times per day 9. 3 or more times per day	
503	Over the past 30 days, how many times did you buy food from an all-you-can-eat buffet, such as college or university dining halls, hotels or resorts?	1. Never or rarely 2. 1 time per month 3. 2-3 times per month 4. 1-2 times per week 5. 3-4 times per week 6. 5-6 times per week 7. 1 time per day 8. 2 times per day 9. 3 or more times per day	
504	Over the past 30 days, how many times did you consume sweet foods that are prepared away from home (E.g.	1. Never or rarely 2. 1 time per month 3. 2-3 times per month 4. 1-2 times per week 5. 3-4 times per week 6. 5-6 times per week 7. 1 time per day 8. 2 times per day	

	sugar, honey, chocolates, candies, cookies and cakes)?	9. 3 or more times per day	
505	In the last week (7 days), how many meals prepared away from home do you consume (excluding snacks)?	Breakfast _____ days per week Lunch _____ days per week Dinner _____ days per week	
506	In the last week (7 days), How often do you consume takeaway food?	1. Never or rarely 2. 1 time per month 3. 2-3 times per month 4. 1-2 times per week 5. 3-4 times per week 6. 5-6 times per week 7. 1 time per day 8. 2 times per day 9. 3 or more times per day	
507	Which types of takeaway meals do you usually consume?	1. Fast-food such as Burgers, fries, chicken nuggets, pizza 2. Casual dining meals like international cuisines 3. Street foods like Injera, kokor or pasti, bonbolino and ertib 4. Cakes or bakeries 5. Sweets and snacks	
508	Which types of meals do you usually consume outside your home?	1. Fast-food such as Burgers, fries, chicken nuggets, pizza 2. Casual dining meals like international cuisines 3. Street foods like, Injera kokor or pasti, bonbolino and ertib 4. Cakes or bakeries 5. Sweets and snacks	
509	Why do you eat away from home? Select all that apply)	1. Convenience 2. For socializing purpose 3. Peer influence 4. For luxury 5. Lack of cooking skills 6. Social media marketing	

		7. Taste preference 8. Busy lifestyle 9. Other (Specify)_____	
Knowledge and attitude questions			
510	Are you aware of the dietary recommendations for managing hypertension? (e.g. low salt, more fruits/vegetables intake)	1. Yes 2. No	
511	Do you believe that eating away from home affects your blood pressure control?	1. Yes 2. No	
512	If yes, how do you think it affects it?	1. Positively 2. Negatively	

VI. Measurements

No	Questions	Readings	Remark
6.1 Blood pressure measurement			
601	Can I measure your blood pressure?	_____ _____	
6.2 Anthropometric measurement			
602	Height (in centimeter)	_____	
603	Weight (in kilogram)	_____	

Annex 3- Amharic version information sheet and consent form

የተጠያቂ የመረጃ ቅፅ

አዲስ አበባ ዩኒቨርስቲ ህብረተሰብ ጤና ሳይንስ

እንደምን አደሩ / ዋሉ ። ስሜ ———————————— ይባላል:: እዚህ የመጣሁት የአዲስ አበባ ዩንቨርስቲ ህብረተሰብ ሳይንስ ጤና ሁለተኛ ዲግሪ ተማሪ የሆነችውን ሃና ሹመቴን በመወከል ነው። ይህ ጥናት በአዲስ አበባ፣ ኢትዮጵያ ውስጥ ከሚገኙት የደም ግፊት ታማሚዎች ከቤታቸው ውጪ ሲመገቡ ጤና ላይ ያለውን ግንኙነት ለማሳየት የሚከናወን ነው።ከአዲስ አበባ ዩኒቨርስቲ፤ ከሆስፒታሎቹ እና ከጤና ጣቢያዎቹ ፍቃድ አግኝታ የምርምር ጥናት በመስራት ላይ ትገኛለች። የእርስዎ ተሳትፎ የአመጋገብ ልምዶችን እና በማህበረሰባችን ውስጥ በጤና ላይ ያላቸውን ተፅእኖ ለመረዳት ይረዳል። የእርስዎ ተሳትፎ ሙሉ በሙሉ በፈቃደኝነት ላይ የተመሰረተ ነው። በማንኛውም ጊዜ ጥናቱን የመቃወም ወይም የመተው መብት አለዎት ይህን ቢያደርጉም ምንም አይነት አሉታዊ ተጽእኖ አይደርስቦትም። ቃለ መጠይቁ ከ 30-40 ደቂቃ ሊወስድ ይችላል። ግላዊነትዎን ለማረጋገጥ ከእርስዎ የሚሰበሰቡ ሁሉም መረጃዎች በኮድ ይደረጋሉ።የእርስዎ ምላሽ ለዚህ ጥናት ብቻ ጥቅም ላይ ይውላል እና ከተመራማሪው ቡድን ውጭ ለማንም አይጋራም። መመለስ የማይፈልጉትን ማንኛውንም ጥያቄ ያለመመለስ መብት አለዎት። በቃለ መጠይቁ ላይ ምቾት የማይሰማዎት ከሆነ ማንኛውንም ጥያቄ መጠየቅ ወይም በፈለጉት ጊዜ መተው ወይም ማቆም ይችላሉ። ይህ ጥናት በእርስዎ ፍላጎት እና ንቁ ተሳትፎ ስኬታማ ይሆናል።

ከላይ ባለው መረጃ ላይ በመመስረት በዚህ ጥናት ለመሳተፍ ፈቃደኛ ነዎት

ሀ) ነኝ ለ) አይደለሁም

1.ነኝ ከሆነ እቀጥላለሁ

2. አይደለሁም ከሆነ ያልተሰማሙበትን ምክንያት ከጻፍኩ በኋላ ወደ ቀጣዩ ተጠያቂ እሄዳለሁ

የመላሽ ፊርማ _____ ቀን _____

የመረጃ ሰብሳቢ ስም _____ ፊርማ _____

የመጠይቁ መለያ ቁጥር _____

መረጃው የተሰበሰበት ቀን _____

የመረጃ መሰብሰቡ

ሀ) ተጠናቀቀ

ለ) አልተጠናቀቀም

ሐ) በከፊል የተጠናቀቀ

መ) ፈቃደኛ አልሆኑም

የተቆጣጣሪ ስም _____ ፊርማ_____

ለበለጠ ማብራሪያ የዋናውን ጥናት አድራጊ አድራሻ ተጠቀም

ስም፡ ሃና ሹመቴ አበጀ

ኢሜይል፡ hsafb22@gmail.com ስልክ፡ +251954987210

Annex 4- Amharic version questionnaire

መግቢያ መረጃ

_____ የሆስፒታሉ ወይም የጤና ጣቢያው ስም

_____ የጠያቂው መለያ ኮድ

_____ የታካሚው መለያ ኮድ

_____ የተጠናቀቀበት ቀን

I. የስነ-ሕዝብ እና ማህበራዊ-ኢኮኖሚያዊ መረጃ

ተ.ቁ	ጥያቄዎች	ምላሾች	አስተያየት
101	ጾታ	1. ወንድ 2. ሴት	
102	ዕድሜዎ ስንት ነው?	_____ በዓመታት	
103	የጋብቻ ሁኔታ?	1. ያላገባ/ች 2. ያገባ/ች 3. የተፋታ/ች 4. ባል ወይም ሚስት የሞተበት/ የሞተባት	
104	የተማሩበት ከፍተኛ የትምህርት ደረጃ ስንት ነው?	1. ማንበብ እና መጻፍ አይችልም/አትችልም 2. ማንበብ እና መጻፍ ይችላል/ትችላለች 3. የመጀመሪያ ደረጃ ትምህርት (1-4) 4. የመጀመሪያ ደረጃ ትምህርት (5-8) 5. የሁለተኛ ደረጃ ትምህርት (9-12) 6. ዩኒቨርሲቲ ወይም ከዚያ በላይ 7. ቴክኒክና ሙያ	
105	ሥራዎ ምንድን ነው?	1. ሙያዊ / ቴክኒካል / ማኔጅመንት 2. ሽያጭ እና አገልግሎቶች 3. የሰለጠነ የእጅ ስራ 4. ያልሰለጠነ የእጅ ስራ 5. የቤት ውስጥ አገልግሎት	

		6. ስራ አልባ 7. ሌላ (ይግለጹ) _____	
106	የእርስዎ ወርሃዊ የቤተሰብ ገቢ ስንት ነው?	_____ በብር	
107	ወርሃዊ ገቢዎ ስንት ነው?	_____ በብር	

II. ክሊኒካዊ ባህሪያት

ተ.ቁ	ጥያቄዎች	ምላሾች	አስተያየት
201	የደም ግፊት እንዳለቦት መቼ አወቁ?	1. ባለፉት 6 ወራት ውስጥ 2. ከ 6 ወር እስከ 1 ዓመት በፊት 3. ከ 1 እስከ 3 ዓመታት በፊት 4. ከ 3 ዓመታት በፊት 5. አላስታውስም	
202	ከሚከተሉት ውስጥ ከደም ግፊትዎ ጋር የተዛመዱ ተጓዳኝ በሽታዎች አለብዎት? (የሚመለከተውን ሁሉ ይምረጡ)	1. ስኳር በሽታ 2. ከመጠን ያለፈ ውፍረት 3. የልብ ሕመም (እንደ የልብ ቧንቧ በሽታ) 4. ሥር የሰደደ የኩላሊት በሽታ 5. ስትሮክ 6. ምንም ተጓዳኝነት የለም 7. ሌላ (ይግለጹ) _____	
203	ሌላ ተጓዳኝ በሽታ ካለብዎ ለሱ መድሃኒት ይወስዳሉ?	1. አዎ **2.** አልወስድም	
204	ከሚከተሉት ውስጥ የአሁኑን የደም ግፊት መድሃኒት አጠቃቀምዎን በተሻለ የሚገልጸው የትኛው ነው?	1. በአሁኑ ጊዜ መድሃኒት መውሰድ 2. ከዚህ ቀደም ለደም ግፊት መድሃኒት ወስጃለሁ ነገር ግን በአሁኑ ጊዜ አይደለም 3. መድሃኒት ታዟል ነገር ግን መውሰድ አልጀመርኩም 4. ለደም ግፊት ምንም አይነት መድሃኒት አልታዘዘልኝም	
205	የደም ግፊትዎን	1. አዎ	

	በየጊዜው ይቆጣጠራሉ?	2. አልቆጣጠርም	
206	የደም ግፊትን ለመከታተል ወደ ጤና ጣቢያ ወይም ሆስፒታል ምን ያህል ጊዜ ይሄዳሉ?	1. በየሳምንቱ 2. በወር በወር 3. በየ 3 ወሩ 4. በየ 6 ወሩ 5. በዓመት 6. እንደ ጤና ባለሙያው ቀጠሮ	

III. ስነ-ባህሪ

ተ.ቁ	ጥያቄዎች	ምላሾች	አስተያየት
3.1 አካላዊ እንቅስቃሴ			
በመቀጠል ባለፈው አንድ ሳምንት ውስጥ ስላደረጓቸው የተለያዩ አካላዊ እንቅስቃሴዎች እጠይቆታለሁ። እባክዎን ራስዎን አካላዊ እንቅስቃሴ የሚያደርግ ሰው አድርገው ባይቆጥሩም ሁሉንም ተግባራት በማዳመጥ ጥያቄዎቹን ይመልሱ። እነዚህም በት/ቤት ፣ በቤት ውስጥ ስራዎች ወይም ከቦታ ወደ ቦታ ለመሄድ የሚያደርጉአቸውን መደበኛ እንቅስቃሴዎቸ እና በዕረፍት ጊዜዎ ውስጥ ለመዝናኛ ወይም ለስፖርት የሚሰሯቸውን እንቅስቃሴዎች ያጠቃልላሉ። ጥያቄዎቹን በሚመልሱበት ወቅት ጠንካራ የአካላዊ እንቅስቃሴዎች ማለት ከባድ ጥረት የሚጠይቁ ትንፋሽዎና የልብ ምትዎ ላይ ከፍተኛ ጭማሪ የሚያመጡ ማለትም ቶሎ ቶሎ መተንፈስ ወይም ፈጣን የልብ ምት ሊያስከትሉ የሚችሉ እንቅስቃሴዎች ናቸው። መካከለኛ የአካላዊ እንቅስቃሴዎች ደግሞ መካከለኛ ጥረት የሚጠይቁ ትንፋሽና የልብ ምት ላይ መጠነኛ ጭማሪ ሊያመጡ የሚችሉ አካላዊ እንቅስቃሴዎች ናቸው።.			
3.1.1 ሥራ			
3.1.1.1 ጠንካራ አካላዊ እንቅስቃሴዎች			
301	ስራዎ ቢያንስ ለ 10 ደቂቃዎች ያለማቋረጥ ኃይለኛ-ጥንካሬ እንቅስቃሴን (ለምሳሌ, ከባድ ሸክሞችን, የግንባታ ስራዎችን) ያካትታል?	1. አዎ 2. አያካትትም	መልሱ አያካትትም ከሆነ ወደ 304 ይሂዱ
302	በሳምንት ውስጥ፣ በስንት ቀናት ውስጥ ኃይለኛ ጥንካሬ እንቅስቃሴዎችን እንደ የስራዎ አካል	በሳምንት _____ቀናት	

	ያለማቋረጥ ይሰራሉ?		
303	በቀን ያለማቋረጥ በሥራ ቦታ ኃይለኛ-ጥንካሬ እንቅስቃሴዎችን ለማድረግ ምን ያህል ጊዜ ይወስዳሉ?	ሰአት ——— ደቂቃ ———	
3.1.1.2 መጠነኛ-ጥንካሬ አካላዊ እንቅስቃሴዎች			
304	ስራዎ ቢያንስ ለ10 ደቂቃዎች መጠነኛ-ጥንካሬ እንቅስቃሴን (ለምሳሌ ፈጣን መራመድ፣ ቀላል ሸክሞችን መሸከም) ያካትታል?	1. አዎ 2. አያካትትም	መልሱ አያካትትም ከሆነ ወደ 307ይሂዱ
305	በሳምንት ውስጥ፣ በስንት ቀናት ውስጥ መጠነኛ-ጥንካሬ እንቅስቃሴዎችን እንደ የስራዎ አካል ያደርጋሉ?	በሳምንት _____ቀናት	
306	በቀን በሥራ ቦታ መጠነኛ-ጥንካሬ እንቅስቃሴዎችን ለማድረግ ምን ያህል ጊዜ ይወስዳሉ?	ሰአት ——— ደቂቃ ———	
3.1.2 ወደ ቦታዎች መሄድ			
የሚቀጥሉት ጥያቄዎች ቀደም ሲል የተጠቀሱትን በሥራ ላይ ያሉ አካላዊ እንቅስቃሴዎች አያካትቱም። አሁን ወደ የተለያዩ ቦታዎች ሲጓዙ ለምሳሌ ለመሥራት፣ ገበያ፣አምልኮ ቦታ ስለሚያዘወትሩት ልምድ ልጠይቅዎት እፈልጋለሁ።			
307	ወደ ቦታዎች ለመሄድ ያለማቋረጥ ቢያንስ ለ 10 ደቂቃዎች ብስክሌት (ፔዳል) ይጠቀማሉ ወይም ይራመዳሉ?	1. አዎ 2. አልጠቀምም/አልራመድም	መልሱ አልጠቀምም/አልራመድም ከሆነ ወደ 310 ይሂዱ
308	በሳምንት ውስጥ, ለስንት ቀናት ቢያንስ ለ 10 ደቂቃዎች	በሳምንት _____ቀናት	

	ያለማቋረጥ ይራመዳሉ ወይም ወደ ቦታዎች ለመሄድ ብስክሌት ይጠቀማሉ?		
309	በቀን ውስጥ ለመራመድ ወይም ብስክሌት ለመንዳት ምን ያህል ጊዜ ይወስዳሉ?	ሰአት ——— ደቂቃ ———	
3.1.3 የመዝናኛ እንቅስቃሴዎች			
የሚቀጥሉት ጥያቄዎች ቀደም ሲል የተጠቀሱትን የሥራ እና የትራንስፖርት እንቅስቃሴዎች አያካትትም:: አሁን ስለ ስፖርት፣ የአካል ብቃት እና የመዝናኛ እንቅስቃሴዎች ልጠይቅዎት እፈልጋለሁ።			
310	እንደ መዝናኛ/ የትርፍ ጊዜ እንቅስቃሴዎች ከፍተኛ የትንፋሽ ወይም የልብ ምት መጨመር የሚያመጡ ጠንካራ አካላዊ ተግባራትን ቢያንስ ለ ለተከታታይ 10 ደቂቃ ያደርጋሉ? ለምሳሌ፡ ኤሮቢክ ዳንስ ፣ የቅርጫት ኳስ ፣ የእግር ኳስ ጨዋታ ወይም ሩጫ	1. አዎ 2. አላደርግም	መልሱ አላደርግም ከሆነ ወደ 313 ይሂዱ
311	በሳምንቱ ለምን ያህል ቀናት ጠንካራ አካላዊ እንቅስቃሴዎችን ወይም የመዝናኛ/ የትርፍ ጊዜ እንቅስቃሴዎችን አድርገዋል?	በሳምንት _____ቀናት	
312	ከነዚህ ቀናት በአንዱ ጠንካራ አካላዊ እንቅስቃሴዎችን ወይም የመዝናኛ/ የትርፍ ጊዜ እንቅስቃሴዎችን ለምን ያህል ሰአት አድርገዋል?	ሰአት ——— ደቂቃ ———	
313	እንደ መዝናኛ እንቅስቃሴዎች አካል መጠነኛ የትንፋሽ ወይም	1. አዎ 2. አላደርግም	መልሱ አላደርግም ከሆነ

	የልብ ምት መጨመር የሚያመጡ መካከለኛ አካላዊ ተግባራትን ቢያንስ ለ ለተከታታይ 10 ደቂቃ አድርገዋል? ለምሳሌ፡ ዋና ፣ የእጅ ኪስ ጨዋታ		ወደ ጥያቄ ቁጥር 316 ይሂዱ
314	በሳምንቱ ለምን ያህል ቀናት መካከለኛ አካላዊ ተግባራትን ወይም የመዝናኛ/የትርፍ ጊዜ እንቅስቃሴዎችን አድርገዋል?	በሳምንት _____ ቀናት	
315	ከነዚህ ቀናት በአንዱ መከከለኛ አካላዊ ተግባራትን ወይም የመዝናኛ/ የትርፍ ጊዜ እንቅስቃሴዎችን ለምን ያህል ሰአት አድርገዋል?	ሰአት ——— ደቂቃ ———	
3.1.4 ከእንቅስቃሴ ውጪ የሚያሳልፉት ጊዜ			
የሚቀጥለው ጥያቄ በቤት፣በት/ቤት ወይም በትርፍ ጊዜዎ በመቀመጥ ወይም ጋደም ብለው ያሳለፉትን ጊዜ ይመለከታል። (በዴስክ ላይ፣ በመኪና ውስጥ ፣ ከጓደኞችዎ ጋር ወይም ቴሌቭዥን ለመመልከት ተቀምጠው ወይም ጋደም ብለው ያሳለፉትን ጊዜ ይጨምራል። ነገር ግን በእንቅልፍ ያሳለፉትን ጊዜ አያካትትም።.			
316	ከሳምንቱ አንዱን ቀን በጠቅላላው ምን ያህል ጊዜ ተቀምጠው ወይም ጋደም ብለው አሳልፈዋል?	ሰአት ——— ደቂቃ ———	
3.2 ሲጋራ መጠቀም			
አሁን ስለ ሲጋራ መጠቀም አንዳንድ ጥያቄዎችን ልጠይቅዎት ነው።			
317	በአሁኑ ጊዜ ሲጋራ እና የትምባሆ ምርቶችን ያጠቀማሉ?	1. አዎ 2. አልጠቀምም	መልሱ አልጠቀምም ከሆነ ወደ ጥያቄ ቁጥር 322

			ይሂዱ
318	ሲጋራ ወይም የትምባሆ ምርቶችን በየቀኑ ይጠቀማሉ?	1. አዎ 2. አልጠቀምም	መልሱ አልጠቀምም ከሆነ ወደ ጥያቄ ቁጥር 322 ይሂዱ
319	ለመጀመሪያ ጊዜ ማጨስ ሲጀምሩ ስንት አመትዎ ነበር?	1. ———————— በዓመታት 2. አላውቅም / እርግጠኛ አይደለሁም	
320	ሲጋራን ለምን ያህል ጊዜ ተጠቅመዋል?	———————— ዓመታት ———————— ወራት ———————— ሳምንታት	መልሱ የሚታወቅ ከሆነ ወደ 321(1) ይሂዱ
321	ከሚከተሉት ውስጥ በየቀኑ በአማካይ ምን ያህሉን ያጨሳሉ ?	1. በኢንዱስትሪ የተሰሩ ሲጋራዎች 2. በእጅ የሚጠቀለሉ ሲጋራዎች 3. በትምባሆ የተሞሉ ሲጋራዎች 4. ሲጋራዎች 5. ሌላ (ይግለጹ):_____	
3.3 አልኮል መጠጣት			
አሁን ስለ አልኮል አንዳንድ ጥያቄዎችን ልጠይቅዎ ነው።			
322	እንደ ቢራ፣ ወይን፣ የፈላ ሲደር፣ ጠጅ፣ጠላ፣አረቄ የመሳሰሉ የአልኮል መጠጦችን ጠጥተው ያውቃሉ?	1. አዎ 2. አላውቅም	መልሱ አላውቅም ከሆነ ወደ 330 ይሂዱ
323	ባለፉት 12 ወራት ውስጥ የአልኮል መጠጥ ጠጥተዋል?	1. አዎ 2. አልጠጣሁም	መልሱ አልጠጣሁም ከሆነ ወደ 330

			ይሂዱ
324	ባለፉት 12 ወራት ውስጥ፣ ምን ያህል ጊዜ ቢያንስ አንድ የአልኮል መጠጥ ጠጥተዋል?	1. በየቀኑ 2. በሳምንት 5-6 ቀናት 3. በሳምንት 1-4 ቀናት 4. በወር 1-3 ቀናት 5. በወር ከአንድ ጊዜ ያነሰ	
325	ባለፉት 30 ቀናት ውስጥ የአልኮል መጠጥ ጠጥተዋል?	1. አዎ 2. አልጠጣሁም	መልሱ አልጠጣ ሁም ከሆነ ወደ 330 ይሂዱ
326	ባለፉት 30 ቀናት ውስጥ ቢያንስ አንድ የአልኮል መጠጥ በስንት አጋጣሚዎች ጠጥተዋል?	1. ———— በቁጥር 2. አላውቅም / እርግጠኛ አይደለሁም	
327	ባለፉት 30 ቀናት ውስጥ፣በአንድ ቀን በአማካኝ ስንት አልኮል ተጠቅመዋል?	1. ———— በቁጥር 2. አላውቅም / እርግጠኛ አይደለሁም	
328	ባለፉት 30 ቀናት ውስጥ፣ ሁሉንም አይነት የአልኮል መጠጦች አንድ ላይ በመቁጠር በአንድ ጊዜ ከጠጡት ከፍተኛው መደበኛ የአልኮል መጠጦች ምን ያህል ነበር?	1. ትልቁ ቁጥር ———— 2. አላውቅም / እርግጠኛ አይደለሁም	
329	ባለፉት 30 ቀናት ውስጥ፣በአንድ ጊዜ ለወንዶች አምስት ወይም ከዚያ በላይ ለሴቶች፡ አራት ወይም ከዚያ በላይ መደበኛ የአልኮል መጠጦች ስንት ጊዜ ተጠቀማችሁ?	1. ———— በቁጥር 2. አላውቅም / እርግጠኛ አይደለሁም	
3.4 የጫት ፍጆታ			
አሁን ስለ ጫት አንዳንድ ጥያቄዎች ልጠይቅዎ ነው።			

330	ጫት ይቅማሉ?	1. አዎ 2. አልቅምም	መልሱ አልቅምም ከሆነ ወደ 401 ይሂዱ
331	መልስዎ አዎ ከሆነ፣ ምን ያህል ጊዜ ጫት ይቅማሉ?	1. በየቀኑ 2. በሳምንት ሦስት ጊዜ 3. በሳምንት አንድ ጊዜ 4. በወር አንድ ጊዜ 5. አላስታውስም	
332	በአንዴ ጊዜ ምን ያህል የጫት መጠን ተጠቅመዋል?	1. ትንሽ 2. መካከለኛ 3. ብዙ 4. አላስታውስም	

IV. የአመጋገብ ሁኔታዎች

ተ.ቁ	ጥያቄዎች	ምላሾች	አስተያየት
4.1 ጨው አመጋገብ			
401	በቤትዎ ውስጥ ምግብ በሚዘጋጅበት ጊዜ ምን ያህል ጨው ይጠቀማሉ?	1. በጭራሽ 2. አልፎ አልፎ 3. አንዳንድ ጊዜ 4. ብዙ ጊዜ 5. ሁልጊዜ	
402	በመደበኛነት የጨው አወሳሰድ መጠንዎን ይገድባሉ?	1. አዎ 2. አልገድብም	መልሱ አልገድብም ከሆነ ወደ 404 ይሂዱ
403	በአመጋገብዎ ውስጥ ጨው ለመቀነስ ምን ዓይነት ዘዴዎችን ይጠቀማሉ? (የሚጠቀሙትን ሁሉ ይምረጡ)	1. ከጨው ከተዘጋጁ ምግቦች በመራቅ 2. ምግብ በሚዘጋጅበት ጊዜ ትንሽ በመጨመር 3. ጨው ያለባቸውን ቀለል ያሉ ምግቦች በማስወገድ 4. ሌላ (ይግለጹ) _____	
4.2 የፍራፍሬ እና አትክልት አመጋገብ			
404	ባለፈው ሳምንት	1. የቀኖች ብዛት ————	

	ወይም 7 ቀናት ውስጥ፣ ስንት ቀን ፍራፍሬ በልተዋል?	2. አላውቅም / እርግጠኛ አይደለሁም	
405	ባለፈው ሳምንት ወይም 7 ቀናት ውስጥ፣ ስንት ቀናት አትክልት በልተዋል?	1. የቀኖች ብዛት _____ 2. አላውቅም / እርግጠኛ አይደለሁም	
406	ባለፈው ሳምንት ወይም 7 ቀናት ውስጥ፣ በእያንዳንዱ የመብላት አጋጣሚ ምን ያህል የፍራፍሬ መጠን ተመገቡ?	1. አፕል • ትንሽ (1 ትንሽ አፕል = 1 ማቅረቢያ) • መካከለኛ (1 መካከለኛ አፕል = 1 ማቅረቢያ) • ትልቅ (1 ትልቅ አፕል = 1.5-2 ማቅረቢያ) • አጠቃላይ ማቅረቢያ: _____ 2. ሙዝ • ትንሽ (1 ትንሽ ሙዝ = 0.75 ማቅረቢያ) • መካከለኛ (1መካከለኛ ሙዝ = 1 ማቅረቢያ) • ትልቅ (1 ትልቅ ሙዝ = 1.5 ማቅረቢያ) •አጠቃላይ ማቅረቢያ:_____ 3. ብርቱካን • ትንሽ (1 ትንሽ ብርቱካን = 0.75 ማቅረቢያ) • መካከለኛ (1 መካከለኛ ብርቱካን = 1 ማቅረቢያ) • ትልቅ (1 ትልቅ ብርቱካን = 1.5 ማቅረቢያ) • አጠቃላይ ማቅረቢያ:_____ 4. የቤሪ ፍሬዎች • ትንሽ (1/2 ኩባያ ቤሪ = 0.5 ማቅረቢያ) • መካከለኛ (1 ኩባያ ቤሪ = 1 ማቅረቢያ) • ትልቅ (1.5 ኩባያ የቤሪ ፍሬዎች = 1.5 ማቅረቢያ) • አጠቃላይ ማቅረቢያ፡_____ 5. የወይን ፍሬ • ትንሽ (½ ኩባያ የወይን ፍሬ = 0.5 ማቅረቢያ)	

		• መካከለኛ (1 ኩባያ ወይን = 1 ማቅረቢያ) • ትልቅ (1.5 ኩባያ ወይን = 1.5 ማቅረቢያ) • አጠቃላይ ማቅረቢያ፡ _____ 6. ማንጎ • ትንሽ (1 ትንሽ ማንጎ = 1 ማቅረቢያ) • መካከለኛ (1 መካከለኛ ማንጎ = 1.5-2 ምግቦች) • ትልቅ (1 ትልቅ ማንጎ = 2.5-3 ምግቦች) • አጠቃላይ ማቅረቢያ፡ _____	
407	ባለፈው ሳምንት ወይም 7 ቀናት ውስጥ፣ በእያንዳንዱ የመብላት አጋጣሚ ምን ያህል የአትክልት መጠን ተመገቡ?	1. ቆስጣ (የበሰለ) • ትንሽ (½ ኩባያ= 0.5 ማቅረቢያ) • መካከለኛ (1 ኩባያ = 1 ማቅረቢያ) • ትልቅ (1.5 ኩባያ = 1.5 ማቅረቢያ) • አጠቃላይ ማቅረቢያ፡ _____ 2. ካሮት • ትንሽ (1 ትንሽ ካሮት = 0.5 ማቅረቢያ) • መካከለኛ (1 መካከለኛ ካሮት = 1 ማቅረቢያ) • ትልቅ (1 ትልቅ ካሮት = 1.5 ማቅረቢያ) • አጠቃላይ ማቅረቢያ፡ _____ 3. ብሮኮሊ (የበሰለ) • ትንሽ (½ ኩባያ= 0.5 ማቅረቢያ) • መካከለኛ (1 ኩባያ = 1 ማቅረቢያ) • ትልቅ (1.5 ኩባያ = 1.5 ማቅረቢያ) • አጠቃላይ ማቅረቢያ፡_____ 4. ቲማቲም • ትንሽ (½ መካከለኛ ቲማቲም = 0.5 ምግቦች) • መካከለኛ (1 መካከለኛ ቲማቲም = 1 ማቅረቢያ) • ትልቅ (1.5 መካከለኛ ቲማቲሞች = 1.5 ምግቦች) • አጠቃላይ ማቅረቢያ፡_____ 5. በርበሬ • ትንሽ (½ መካከለኛ በርበሬ = 0.5 ማቅረቢያ) • መካከለኛ (1 መካከለኛ በርበሬ= 1 ማቅረቢያ)	

		• ትልቅ (1.5 መካከለኛ በርበሬ = 1.5 ማቅረቢያ) • አጠቃላይ ማቅረቢያ፡_____ 6. ሽንኩርት • ትንሽ (½ መካከለኛ ሽንኩርት = 0.5 ማቅረቢያ) • መካከለኛ (1 መካከለኛ ሽንኩርት = 1 ማቅረቢያ) • ትልቅ (1.5 መካከለኛ ሽንኩርት = 1.5 ማቅረቢያ) • አጠቃላይ ማቅረቢያ፡_____	

V. ከቤት ውጭ መብላት

ተ.ቁ	ጥያቄዎች	ምላሾች	አስተያየት
501	ባለፉት 30 ቀናት ውስጥ፣ ከፈጣን ምግብ ሬስቶራንት (ቺፕስ፣ ሳንድዊች፣ ዶናት፣ ፓስታ፣ በርገር፣ ፒዛ፣ የተጠበሰ ምግብ እና አይስ ክሬም) ስንት ጊዜ ገዙ?	1. በጭራሽ ወይም አልፎ አልፎ 2. በወር 1 ጊዜ 3. በወር 2-3 ጊዜ 4. በሳምንት 1-2 ጊዜ 5. በሳምንት 3-4 ጊዜ 6. በሳምንት 5-6 ጊዜ 7. በቀን 1 ጊዜ 8. በቀን 2 ጊዜ 9. በቀን 3 ጊዜ ወይም ከዚያ በላይ	
502	ከላይ የተዘረዘሩትን ፈጣን ምግብ ቤቶችን ሳያካትት በባለፉት 30 ቀናት ውስጥ ስንት ጊዜ ሬስቶራንት ላይ ተቀምጠው ምግብ አዘዙ? (ከአስተናጋጅ)	1. በጭራሽ ወይም አልፎ አልፎ 2. በወር 1 ጊዜ 3. በወር 2-3 ጊዜ 4. በሳምንት 1-2 ጊዜ 5. በሳምንት 3-4 ጊዜ 6. በሳምንት 5-6 ጊዜ 7. በቀን 1 ጊዜ 8. በቀን 2 ጊዜ 9. በቀን 3 ጊዜ ወይም ከዚያ በላይ	
503	ባለፉት 30 ቀናት ውስጥ፣ ከቡፌ፣ እንደ ኮሌጅ ወይም ዩኒቨርሲቲ የመመገቢያ አዳራሾች፣ ሆቴሎች	1. በጭራሽ ወይም አልፎ አልፎ 2. በወር 1 ጊዜ 3. በወር 2-3 ጊዜ 4. በሳምንት 1-2 ጊዜ 5. በሳምንት 3-4 ጊዜ 6. በሳምንት 5-6 ጊዜ	

	ወይም ሪዞርቶች ስንት ጊዜ ምግብ ገዙ/ተመገቡ?	7. በቀን 1 ጊዜ 8. በቀን 2 ጊዜ 9. በቀን 3 ጊዜ ወይም ከዚያ በላይ	
504	ባለፉት 30 ቀናት ውስጥ ስንት ጊዜ ከቤት ውጪ የተዘጋጁ ጣፋጭ ምግቦችን (ለምሳሌ ስኪር፣ ማር፣ ቸኮሌት፣ ከረሜላ፣ ኩኪስ እና ኬኮች) ተጠቀሙ/ተመገቡ?	1. በጭራሽ ወይም አልፎ አልፎ 2. በወር 1 ጊዜ 3. በወር 2-3 ጊዜ 4. በሳምንት 1-2 ጊዜ 5. በሳምንት 3-4 ጊዜ 6. በሳምንት 5-6 ጊዜ 7. በቀን 1 ጊዜ 8. በቀን 2 ጊዜ 9. በቀን 3 ጊዜ ወይም ከዚያ በላይ	
505	ባለፈው ሳምንት ወይም 7 ቀናት ውስጥ ከቤት ርቀው የተዘጋጁትን ምን ያህል ምግቦችን ተመግበዋል (ቀላል ምግቦችን ሳይጨምር)?	ቁርስ _____ ቀናት በሳምንት ምሳ _____ ቀናት በሳምንት እራት _____ ቀናት በሳምንት	
506	ባለፈው ሳምንት ወይም 7 ቀናት ውስጥ ምግቦችን ከውጪ ገዝተው በቤት ወይም ከገዙበት ቦታ ውጪ ምን ያህል ጊዜ ተመግበዋል?	1. በጭራሽ ወይም አልፎ አልፎ 2. በወር 1 ጊዜ 3. በወር 2-3 ጊዜ 4. በሳምንት 1-2 ጊዜ 5. በሳምንት 3-4 ጊዜ 6. በሳምንት 5-6 ጊዜ 7. በቀን 1 ጊዜ 8. በቀን 2 ጊዜ 9. በቀን 3 ጊዜ ወይም ከዚያ በላይ	
507	ተገዝተው በቤት ወይም ከተገዙበት ቦታ ውጪ ከሚበሉ ምግቦች መካከል ብዙውን ጊዜ የሚያዘወትሩት	1. ፈጣን ምግቦች እንደ በርገር፣ ጥብስ፣ ፒዛ 2. አለም አቀፍ ምግቦች 3. እንደ ቆቀር ወይም ፓስቲ፣ቦንቦሊኖ እና እርጥብ ያሉ የመንገድ ላይ ምግቦች	

	የትኛውን የምግብ ዓይነት ነው?	4. ኬኮች እና ዳቦዎች 5. ጣፋጮች እና ቀላል ምግቦች	
508	ብዙውን ጊዜ ከቤትዎ ውጭ ምን ዓይነት ምግቦችን ይመገባሉ?	1. ፈጣን ምግቦች እንደ በርገር፣ ጥብስ፣ ፒዛ 2. አለም አቀፍ ምግቦች 3. እንደ ቆቀር ወይም ፓስቲ፣ቦንቦሊኖ እና እርጥብ ያሉ የመንገድ ላይ ምግቦች 4. ኬኮች እና ዳቦዎች 5. ጣፋጮች እና ቀላል ምግቦች	
509	በቤት ከሚዘጋጅ ምግብ ውጪ ለምን ይመገባሉ? የሚመለከተውን ሁሉ ይምረጡ)	1. ቅርበት 2. በማህበራዊ ህይወት 3. የእኩዮች ተጽዕኖ 4. ለቅንጦት 5. የምግብ አዘገጃጀት ችሎታ እጥረት 6. በማህበራዊ ሚዲያ ተጽዕኖ 7. የጣዕም ምርጫ 8. ሥራ የበዛበት የአኗኗር ዘይቤ 9. ሌላ (ይግለጹ)_____	
የእውቀት እና የአመለካከት ጥያቄዎች			
510	የደም ግፊትዎን ለመቆጣጠር ለመመገብ የሚመከረውን ያውቃሉ?	1.አውቃለሁ 2.አላውቅም	
511	ከቤት ውጭ መመገብ የደም ግፊትን መቆጣጠር ላይ ተጽዕኖ አለው ብለው ያምናሉ?	1.አዎ 2.የለውም	
512	መልስዎ አዎ ከሆነ፣ ምን አይነት ተጽእኖ ያለው ይመስልዎታል?	1.አዎንታዊ 2.አሉታዊ	

VI. ልኬቶች

ተ.ቁ	ጥያቄዎች	ንባብ	አስተያየት
6.1 የደም ግፊት ልኬት			
601	የደም ግፊትዎን መለካት እችላለሁ?	_____ _____	
6.2 የሰውነት መጠን ልኬት			
602	ቁመት (በሴንቲ ሜትር)	_____	
603	ክብደት (በኪሎ ግራም)	_____	

Annex 5 - Curriculum Vitae (CV)

1. Personal Information

- Name: Hana Shumetie Abeje
- Sex: Female
- Age: 24
- Date of birth: July 17, 2000 G.C
- Place of birth: Addis Ababa, Ethiopia.
- Nationality: Ethiopian
- Language: Amharic and English: I can speak, read and write

Contact address

Phone Number: +251954987210

Email: hsafb22@gmail.com

2. Educational Background

Academic Year (GC)	School/College	Status	Place
Since 2023	Addis Ababa University	MPH candidate	Addis Ababa
2018-2022	University of Gondar	BSc in Surgical Nursing	Gondar
2015-2018	Hill Side School	9^{th}-12^{th} grade	Addis Ababa
2003 – 2015	Abune Gorgorios School	kindergarten -9^{th} grade	Addis Ababa

3. Educational Qualification

Field of study: BSc in Surgical Nursing from University of Gondar, Ethiopia: Oct 2018 – Sep 2022.

4. **Work Experience**

March 2023 – Nov 2023: at Myungsung Compherensive Specialized Hospital (Korea hospital)

5. **Achievements**

- Award from University of Gondar, women's children and youth affairs office for scoring highest result among female students in College of Medicine and Health Sciences, 2021 GC
- Certificate of recognition from University of Gondar for high academic performance among female students in College of Medicine and Health Sciences ,2022 GC
- Certificate of Achievement from the registrar of University of Gondar, for graduating with a very great distinction. (2022 GC)
- Certificate of recognition from department of Surgical Nursing, for stooding first from the department and graduating with a very great distinction. (2022 GC)

6. **Communication and interpersonal skills**

- I am a motivated person who communicates well and works effectively in teams. I have a strong work ethic and always look for ways to learn and improve my skills.

7. **Future Plans and Interests**

- To upgrade my level of education to the next level.
- To know more about my area of study.

Reference

Debrework Tsegera: PhD, Head of School of Nursing, University of Gondar, debre2012@gmail.com, 0942042874