ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCE

DEPARTMENT OF EMERGENCY MEDICINE

ASSESSMENT OF KNOWLEDGE OF HYPERTENSION RISK FACTORS AND ASSOCIATED FACTORS AMONG HYPERTENSIVE EMERGENCY DEPARTMENT VISITORS AT SELECTED PUBLIC HOSPITALS IN ADDIS ABABA, ETHIOPIA, 2023

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A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY, COLLEGE OF HEALTH SCIENCES, DEPARTMENT OF EMERGENCY MEDICINE IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR A MASTER'S DEGREE IN EMERGENCY MEDICINE AND CRITICAL CARE NURSING.

JUNE 09, 2023

ADDIS ABABA, ETHIOPIA

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Table of Contents

ACKNOWLEDGEMENT III

LIST OF TABLES VII

LIST OF FIGURES VIII

ABBREVIATION & ACRONYMS IX

ABSTRACT X

1. INTRODUCTION 1

1.1. Background of the study. 1

1.2. Statement of the Problem 2

1.3. Rationale of Study 4

2. LITERATURE REVIEW 5

2.1. Overview of Hypertension Risk Factors 5

2.2. Knowledge about hypertension risk factors 5

2.3. Factors associated with knowledge of hypertension risk factors. 7

2.4. Conceptual framework. 8

3. OBJECTIVE 9

3.1. General Objective 9

3.2. Specific Objective 9

4. METHODS AND MATERIALS 10

4.1. Study Area and Period 10

4.2. Study Design 10

4.3. Population 10

4.3.1. Source of population 10

4.3.2. Study Population 10

4.4. Inclusion and Exclusion Criteria 11

4.4.1. Inclusion Criteria 11

4.4.2. Exclusion Criteria 11
4.5. Sample Size Determination 11
4.6. Sampling Procedures and Technique 12
4.7. Study Variables 14
4.7.1. Independent Variables 14
4.7.2. Dependent Variables 14
4.8. Operational Definitions 14
4.9. Data Collection Tool and Procedures 15
4.9.1. Data Collection Instruments 15
4.9.2. Data Quality Control 15
4.9.3. Data Processing and Analysis 15
4.10. Ethical Consideration 16
5. RESULT 17
5.1. Description of Sociodemographic characteristics of study respondents. 17
5.2. Knowledge regarding hypertension risk factors 19
5.3. Sources of hypertension risk factors information 22
5.4. Factors Affecting the Knowledge of hypertension risk factors 23
6. DISCUSSION 26
7. STRENGHT AND LIMITATIONS OF STUDY 28
7.1. Strength 28
7.2. Limitation 29
8. CONCLUSION AND RECOMMENDATIONS 29
8.1. Conclusion 29
8.2. Recommendation 29
9. REFERENCES 31
Annexes 37

Annex I: Subject Information Sheet (English Version) 37
9.1. Annex II: Consent form (English Version) 38
9.2. Annex III: Consent form (Amharic Version) 39
Annex IV: Questionnaires (English Version) 40
Annex V: Questionnaires (Amharic Version) 44
APPROVAL SHEET 48
STATEMENT OF THE AUTHOR. 49

LIST OF TABLES

Table 1 Monthly flow of hypertensive emergency department visitors from November 2022 to January 2023 in all public hospitals of Addis Ababa, Ethiopia, 2023.....12

Table 2. Sociodemographic characteristics of hypertensive emergency department visitors at Addis Ababa's selected public hospitals, Ethiopia, 2023 G.C, (n=194).....17

Table 3. Level of knowledge of hypertension risk factors among hypertensive emergency department visitors at Addis Ababa's selected public hospitals, Ethiopia, March 15 to April 15, 2023 G.C (n=194).....19

Table 4. Bivariate and Multivariate logistic regression analysis of factors associated with knowledge of hypertension risk factors among hypertensive emergency department visitors at selected public hospitals in Addis Ababa, Ethiopia, March 15 to April 15, 2023 G.C (n=194) 24

LIST OF FIGURES

Figure 1: Conceptual framework illustrating variables associated with hypertensive risk factor knowledge among hypertensive emergency department visitors at public hospitals in Addis Ababa, Ethiopia.2023 G.C (29,30) 8

Figure 2. Shows the proportional allocation of a sample size to each emergency department of Addis Ababa's five selected hospitals, Ethiopia, 2023 G. 13

Figure 3. Level of knowledge regarding hypertension risk factors among hypertensive emergency department visitors at selected public hospitals in Addis Ababa, Ethiopia, March 15 to April 15, 2023 (n=194) 21

Figure 4. Sources of information about risk factors of hypertension among hypertensive emergency department visitors at selected public hospitals in Addis Ababa, Ethiopia, March 15 to April 15, 2023 G.C (n=194).....22

ABBREVIATION & ACRONYMS

AAU: Addis Ababa University

BP: Blood Pressure

BMI: Body Mass Index

CHS: College of Health Sciences

CVD: Cardiovascular Disease

DBP: Diastolic Blood Pressure

EDs: Emergency Departments

EMCC: Emergency Medicine & Critical Care

HTN: Hypertension

LMICs: Low- & Middle-Income Countries

NCDs: Non-communicable Diseases

NGO: Non-governmental organization.

SBP: Systolic Blood Pressure

SSA: Sub-Saharan Africa

TASH: Tikur Anbessa Specialized Hospital

ABSTRACT

Background: Hypertension has been increasing globally, with projections estimating a 30% increase in prevalence to be expectedly to reach 1.56 billion by the year 2025. Likewise, hypertension has been increasing in Ethiopia with a recently revealed magnitude of 21.81%. The growing world burden of hypertension is because of inadequate public knowledge of the risk factors for hypertension. To the best of the knowledge of the author, no single study was done regarding hypertension risk factors before this study in Ethiopia.

Objective: The present study aimed to assess the level of knowledge of hypertension risk factors among hypertensive emergency department visitors at selected public hospitals, in Addis Ababa, Ethiopia, from March 15 to April 15, 2023**.**

Methods and materials: Hospital-based cross-sectional study design was used. A convenient sampling strategy was employed to include a total of 200 sampled participants proportionally allocated to the emergency departments of five purposefully selected hospitals. data were collected using pretested face-to-face interview structured questionnaire. The collected data were checked and then entered into Epidata 4.6. Data that had been cleaned were exported for analysis to SPSS version 27. Statistical analysis using binary logistic regression was performed and the predictors had a P value of < 0.05 was considered to be statistically significant.

Results: From 200 planned sample sizes, 194 respondents were included in this study. Among the study participants, 41.8% & 58.2% had good & poor knowledge of hypertension risk factors, respectively. Based on multivariable logistic regression analysis Educational status [AOR=10.15, 95% CI; 3,060, 33,672], disease duration since diagnosis [AOR=3.21, 95% CI;1.34, 7.66], comorbidities [AOR=2.43, 95% CI; 1.19, 4.92], residency area [AOR=4.38,95% CI; 1.20, 15.90] and sources of information [AOR=2.96, 95% CI; 1.14, 7.66] were statistically significant with P-value < 0.05. The results were presented as narrative text, tables, and figures.

Conclusion & Recommendation: The study participants` knowledge about risk factors was generally poor with almost about nearly sixty percent. The findings of the study revealed that people are still not aware of the risk factors associated with hypertension although 87.6% gained health information from health professionals, and 35.6% from mass media. Hence, the stakeholders in the health sector need to implement a health education program to better teach patients about risk factors for hypertension.

Keywords: Hypertension, Knowledge, Risk factors for hypertension.

1. INTRODUCTION

1.1. Background of the study.

Since 1984, the definition of hypertension has shifted from systolic blood pressure (SBP) or diastolic blood pressure (DBP) >160/90 mmHg to >140/90 mmHg, and then further in 1993 to over 130/80 mmHg in 2017 ((1). Modifiable and non-modifiable risk factors that contribute to the development of hypertension include smoking, a high-cholesterol diet, alcohol consumption, physical inactivity, psychosocial stress, depression history, premature CVD, familial hypercholesterolemia, obesity, salt intake, diabetes, and aging (2,3).

Hypertensive knowledge is the knowledge of what causes hypertension, the risk factors that contribute to it, how to recognize and address them, and the actions that may be taken to prevent it n(4). Knowing the factors that predispose to hypertension and other cardiovascular diseases is important for optimizing cardiovascular health by making lifestyle changes to prevent or reduce associated complications(5).

Globally, the prevalence of hypertension is alarmingly rising with an estimation of a 30% increment to be expectedly to reach 1.56 billion by the year 2025 ((6). National reports show that since 2000, the prevalence of hypertension has decreased in high-income nations (28.5%) but increased in low- and middle-income countries (31%) ((7)). Continentally, the hypertension prevalence was high in Africa estimated at 46%(8), and by 2030, it is expected to increase to 216.8 million. (9). In LMICs, one in five individuals has high blood pressure, and it was predicted that by the end of 2025, three out of every four residents of these nations will have hypertension. In addition, there are currently 74.7 million hypertensives in Sub-Saharan Africa, and that number is expected to reach 125.5 million by the end of 2025. The increased burden of worldwide hypertension is a result of a lack of community awareness of the risk factors for the disease (8). Similarly, Ethiopia has experienced an increase in the prevalence of hypertension. The findings of the systematic review and meta-analysis carried out in 2020 showed that Ethiopia had a prevalence of hypertension of 21.81 %. (10)

In-depth knowledge of hypertension can be attributed to better drug adherence, lower cardiovascular risks, controlled blood pressure, and decreased morbidity and mortality (11). One of the problems associated with hypertension is that patients lack adequate

information that can help them monitor and manage the progression of their condition (12). Specifically, the knowledge about hypertension risk factors is not studied adequately at the global level and at the African level, while even no single study was done in this area in Ethiopia but there were relatively related studies published. Hence, the main objective of this study is to assess the level of knowledge regarding the risk factors for hypertension to avoid the development of hypertension and decrease the likelihood that complications will occur.

1.2. Statement of the Problem

The emergence of different fatal diseases, including stroke, coronary artery disease, heart failure, atrial fibrillation, and peripheral vascular disease, is strongly associated with hypertension. Dementia, a decline in cognition, and kidney failure are other possible outcomes of chronic untreated hypertension (13). Worldwide, an estimated 17.4 million fatalities would occur each year as a result of cardiovascular disease, and 9.4 million of these deaths are caused by complications from hypertension. The total ischemic heart disease mortality rate is at least 45%, and the total stroke mortality rate is at least 51%, was due to hypertension(14). Among 30% of hypertensive patients living in sub-Saharan Africa (SSA), only ≈7% had controlled blood pressure (8)

The aging of the population, urbanization, and socioeconomic changes favoring sedentary habits, obesity, alcohol use, and salt intake, among other factors, were all highly associated with the occurrence of hypertension and its consequences, such as CVDs, as a public health problem in developing nations (15).

More than a quarter (28.1%) of deaths in India were due to long-term tobacco use, which was found to be caused by cardiovascular conditions such as ischemic heart disease and stroke(16)

In Ethiopia, cardiovascular disease accounts for 16% of all fatalities, particularly hypertension, which accounts for 39% of all non-communicable conditions. The majority of cardiovascular-related morbidity and mortality were caused by hypertension, which accounts for 62.3% of all such causes (17) and specifically accounts for 70% of causes of stroke (18). Stroke is still the major cause of death in these settings, even though the age-adjusted rate of death from complications

associated with high blood pressure, such as cardiovascular diseases, is decreasing (19).

In Ethiopia, where hospitalization and mortality rates were high, hypertension is becoming a problem. In Addis Ababa, a study on the pattern and trend of medical admissions of patients with chronic NCDs in selected hospitals found that among patients who attended outpatient clinics, almost 40% had CVDs, and of all patients, 43.5% had hypertension. In these studies, hypertensive patients were examined, and it was found that between 37% and 78% of them were unaware of their blood pressure (BP) condition. (20).

In Ethiopia, almost 60% of people with high blood pressure were never diagnosed, and only 28% of those identified were taking medication. of those, 74% of people receiving therapy had poorly managed hypertension(18).

According to the study In Saint Peter Specialized Hospital, Addis Ababa, 11.3% of medical admissions and 14.6% of medical ward mortality were due to hypertension-related complications like cerebrovascular and cardiovascular. Stroke patients accounted for 80.8% of mortality. Age, urban residency, and a lengthy period of discontinuing anti-hypertensive medication were risk factors for an increased chance of admission-related death (21).

Even though there have been numerous studies conducted on hypertension in general, to the best of the author's knowledge, no research has yet been done evaluating the knowledge of particular hypertension risk factors in Ethiopia. It was the main gap the study needed to identify the level of knowledge of hypertension risk factors and affecting factors among hypertensive emergency department visitors to reduce the observed complication and burden of hypertension.

1.3. Rationale of Study

Globally, hypertension is an alarmingly growing medical and public health concern requiring timely adequate intervention to lessen the disease's detrimental impacts.

The study has highlighted the most important knowledge gaps about the risk factors for hypertension, which can enhance its occurrence and result in a variety of complications.

The study had significant importance to identify factors related to awareness of risk factors for hypertension which is crucial for health professionals to provide health information based on the study’s output recommendations.

The output of this article would have significant input for Addis Ababa Health Bureau, hospital administrators, and other stakeholders in sectors on the way to increase hypertension knowledge in general and knowledge of risk factors in particular for the community.

Last but not least, this finding will be used as baseline sources by scholars who wish to pursue the same line of further investigation.

2. LITERATURE REVIEW

2.1. Overview of Hypertension Risk Factors

Because hypertension is asymptomatic, it is known as the "silent killer," and it is usually detected inadvertently or after serious organ damage such as brain, heart, or kidney damage has occurred. (22)

overweight, excessive salt content intake, excessive drinking of alcohol, tobacco use, stress, and physical inactivity are hypertension risk factors that can be modified, whereas age, gender, ethnicity, and familial history are risk factors that cannot be modified. A risk factor is a power, attribute, or exposure of a person that increases the likelihood of an undesirable health consequence. (23–25)

In Qiang, China, research conducted on the prevalence and risk factors of hypertension revealed age, low family income, overweight, and a family history of hypertension as risk factors for hypertension (26)**.**

Age, BMI, inactivity, smoking, excessive salt consumption, and family history of stroke or cardiovascular disease were all identified as risk factors for hypertension in another study conducted in Bangladesh(27). Similarly, according to a study carried out in Cameroon, age, regular alcohol use, physical activity level, obesity, stress, and fasting blood sugar levels were some risk factors for the development of hypertension (HTN) in adults (28).

2.2. Knowledge about hypertension risk factors

48% of survey participants lacked knowledge of any hypertension risk factors, according to an Indian community-based study. Only 12% of participants recognized that increasing physical exercise, eating more fresh fruits and vegetables, losing weight, and limiting alcohol use can all lower blood pressure (BP). 50% of participants were aware that excessive salt content intake was a hypertension risk factor than any of the other factors (9%–12%) (29)

Another cross-sectional community-wide study done in Thailand found amongst 67.75% of smokers, 38.12% were unaware that tobacco use was a hypertension risk factor. 40% of those who are overweight are unaware that it increases the chance of developing hypertension. More than 40% of people were unaware that alcohol

consumption increases the chance of developing hypertension. Increasing age greater than forty percent of the study subjects were above forty years old. But greater than 50% of this age group was unaware with growing older is a risk factor for hypertension. Generally, half of the sampled population i.e. around 50% had no specific knowledge of diseases such as hypertension risk factors (30). Another study investigated in Bangladesh revealed that study subjects identified psychosocial stress (93.3%), age (58.6%), cholesterol content intake (52.1%), a positive family history (49.9%), excessive tobacco use (42.4%), overweight (31.7%), and DM (30.7%) as factors contribute for occurrence of hypertension. According to the study's findings, approximately sixty percent (60%) of respondents had inadequate knowledge about factors that contributed to the occurrence of hypertension and its complication, those who had moderate knowledge were below 30%, and the remaining respondents were classified as satisfactory knowledge ((31)). Another study conducted in Poland found that among study participants, 62.4%, 78.5%, 75.1%, 71.7%, 63.9%, 49.2%, 9.7%, and 7.8% were aware of hypertension risk variables, including family history, overweight, excessive salt consumption, smoking, alcohol consumption, age, inactivity, and being male, respectively. ((32))

Another study survey performed in Nigeria found that the respondents with high blood pressure had comparatively little understanding of the risk factors linked to the condition. Approximately 19% of people were unsure whether smoking can cause hypertension, and 44% agreed but not strongly. Few persons were able to connect hypertension to heredity. A little over 28% of people strongly agreed that inherited factors could have a role in hypertension, while 36% agreed but not firmly. An estimated 30% of respondents strongly agreed that socioeconomic status is a risk for the development of hypertension. The elders were highly vulnerable to developing hypertension than young persons, firmly agreed about one-third of the respondents. Although not strongly, 41% of respondents agreed with this. 37% more survey participants firmly connected stress to high blood pressure (33).

Accordingly, the study carried out cross-sectionally in Rwanda found that few respondents just 1.8% of study participants—had a higher understanding of the risk factors for hypertension, while 216 participants—or 79.4%—reported having low knowledge. In particular, 23.2% of patients were understand psychosocial stress and

anxiety as risk factors, and 20% of the patients were aware that obesity, smoking, aging, diabetes, and excessive alcohol intake could all raise the risk of hypertension. By 27.6% and 23,2% of patients, respectively, high salt intake and high cholesterol levels were identified as risk factors. Overall, there was no general understanding of the risk factors for hypertension (34).

In Dar es Salaam, Tanzania, a cross-sectional survey found that although 66.8% of the respondents were aware of hypertension, only 19.75% knew the factors that were risky for the occurrence of hypertension. The same results were obtained in a descriptive cross-sectional institutional study of academic instructors and supportive workers at Bishop Stuart University in Mbarara, Uganda, where only 16% of respondents were found to be aware of the risk factors for hypertension (35,36)**.**

In Addis Ababa, a hospital-based cross-sectional study carried out revealed that among study participants, 88.4%, 76%, 72.6%, 96.5%, 89%, 90.8%, and 93% were aware of the hypertension risk factors such as coffee, tobacco use, chat chewing, excessive salt intake, drinking alcohol, being overweight or obese, and stress, respectively. 338 (80%) of them mentioned changing one's lifestyle to control hypertension (37). Similar research conducted in Aksum found that participants' knowledge of the most common risk factors for hypertension was 61%, 51.8%, 49.1%, 36.3%, 30.1%, 20.3%, 16.1%, 7.7%, 5.8%, and 0.4% for obesity, physical inactivity, alcoholism, stress, aging, smoking, excessive coffee intake, and diabetes, respectively, whereas other findings found from a study done in northwest Ethiopia indicated that 1225(50.6%) of participants had good knowledge on hypertensive lifestyle risk factors and preventive measures (38,39).

2.3. Factors associated with knowledge of hypertension risk factors.

The research conducted in India showed that knowledge of risk factors was associated with awareness of hypertension, education, younger age, male sex, waist circumference above normal cutoff levels, and physical inactivity (29). Similar to this, another study found that knowledge of hypertension risk factors was independently correlated with knowledge of hypertension awareness, education, and duration of hypertension (30). In Ibadan, Nigeria Another study done had notified that knowledge

of hypertension risk factors was correlated with education level and sources of information (33)

In Aksum, Ethiopia, the study revealed that understanding the risk factors for hypertension was affected by age and educational level (38)**.**

2.4. Conceptual framework.

This conceptual framework was constructed after a methodical, thorough assessment of the relevant literature used for this study's literature review (29,30). It shows that the knowledge of hypertensive risk factors is the dependent variable and is directly affected by independent variables such as sociodemographic, clinical factors and Sources of health information.

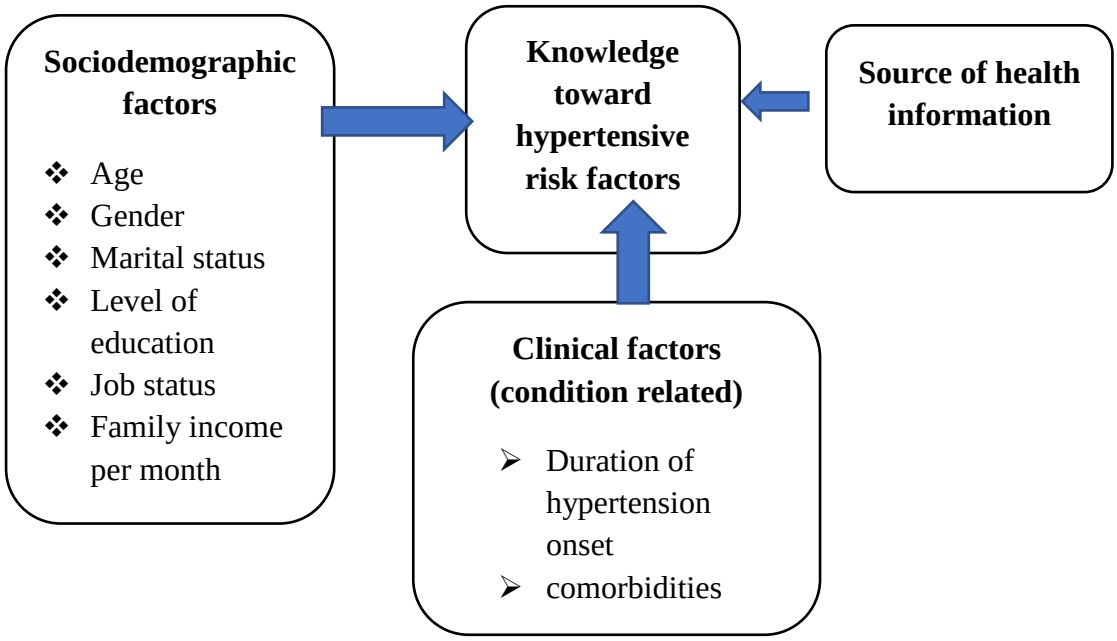

Figure 1: Conceptual framework illustrating variables associated with hypertensive risk factor knowledge among hypertensive emergency department visitors at public hospitals in Addis Ababa, Ethiopia.2023 G.C (29,30)

3. OBJECTIVE

3.1. General Objective

To assess the level of knowledge of hypertension risk factors among hypertensive emergency department visitors at Addis Ababa's selected public hospitals, Ethiopia, March 15 to April 15, 2023, GC.

3.2. Specific Objective

1. To assess the level of knowledge of hypertensive emergency department visitors at Addis Ababa's selected public hospitals, Ethiopia, March 15 to April 15, 2023 G.C.
2. To identify the associated factors with knowledge of hypertensive emergency department visitors at Addis Ababa's selected public hospitals, Ethiopia, March 15 to April 15, 2023 G.C.

4. METHODS AND MATERIALS

4.1. Study Area and Period

This research paper was conducted in a governmental health institution found in Addis Ababa city. Currently, the city has 11 sub-cities, 116 woredas, 40 privately owned hospitals, 98 health facilities, and 14 public hospitals. There were 14 public hospitals in the city. Among them, were Tikur Anbessa Specialized Hospital (TASH), St. Petros Hospital, Yekatit 12 general hospital, Menelik the 2nd hospital & Alert hospitals where the area study was conducted. This study was conducted among hypertensive emergency department visitors (ED visitors) of selected public hospitals in Addis Ababa, Ethiopia, from March 15 to April 15, 2023 G.C.

4.2. Study Design

An Institutional based cross-sectional study design was used.

4.3. Population

4.3.1. Source of population

All hypertensive emergency department visitors of all public hospitals found in Addis Ababa city.

4.3.2. Study Population

All hypertensive emergency department visitors who visited the respective emergency departments (EDs) of at selected public hospitals in Addis Ababa during the period of data collection.

4.3.3. Sample Population

Hypertensive emergency department visitors were involved after they were selected to participate in the study**.**

4.4. Inclusion and Exclusion Criteria

4.4.1. Inclusion Criteria

- ✓ Those who were above 18 years old.
- ✓ All known hypertensive patients who visited the ED with/without any other cases during the period of data collection.
- ✓ Patients with hypertensive crises who visited the ED during the period of data collection
- ✓ All Newly diagnosed patients with BP ≥140/90 at ED during a period of the data collection period.

4.4.2. Exclusion Criteria

- ✓ Those who fell into a coma during the period of data collection were already excluded.

4.5. Sample Size Determination

346 total average monthly registered hypertensive ED visitors who had visited for the last consecutive three months from November 2022 to January 2023 at Emergency Departments of TASH, St. Petros Hospital, Menelik II Hospital, Yekatit 12 Hospital, and Alert Hospital respectively. The sample size was determined using the single proportion formula shown below, using the P-value from a closely related study conducted in northwest Ethiopia, which showed that 50.6% of participants had good knowledge of hypertensive lifestyle risk factors and preventive measures. with a 95% confidence interval and a 5% margin of error. (39), $= \frac{\left(z\frac{a}{2}\right)^2 P(1-P)}{d^2} = \frac{(1.96)^2 0506(1-0.506)}{(0.05)^2} = 384.16 \approx 384,$ where

Z a/2=1.96 corresponds to 95% confidence level

d= margin of error=5%=0.05

p= prevalence rate = 50.6%=0.506

Since the population is less than 10,000 (i.e., the monthly estimated average patient flows in the selected hospitals was 346), so the sample size was corrected using the following correction formula;

$$n_f = \frac{n}{1+\frac{n}{N}} = \frac{384}{1+\frac{384}{346}} = 182,$$ where

n = initial sample size= 384

N= total population= 346

nf= final sample size

Therefore, the final sample size was 200 with the addition of a ten percent nonresponse rate.

4.6. Sampling Procedures and Technique

The study was carried out at the five emergency departments of selected public hospitals in Addis Ababa. Among the total 14 public hospitals currently found in a city, 12 of them have been providing medical case-related services, of which five hospitals were purposively selected depending on the large number of caseloads per month they have been admitting as detailed in the following table.

Table 1 Monthly flow of hypertensive emergency department visitors from November 2022 to January 2023 in all public hospitals of Addis Ababa, Ethiopia, 2023.

s.no	Name of public hospitals	Months				
		November	December	January	Total number	Average per month
1.	TASH	68	66	71	205	68
2.	St. Paulos	79	73	82	234	78
3.	St. Petros	89	80	76	245	82
4.	Yekatit 12	77	87	73	237	79
5.	Menelik II	58	53	63	174	58
6.	Zewditu memorial	56	59	54	169	56
7.	Alert	61	56	59	176	59
8.	Yeka kotobe	41	39	44	124	41

9.	Torhayiloch	22	27	19	68	23
10.	Federal police	26	19	31	76	25
11.	Tirunesh Beijing	38	37	43	118	39
12.	Ras dasta	39	42	40	121	40
13	Gandhi memorial	Excluded due to its health service provision exceptionality.				
14	Amanuel hospital	Excluded due to its health service provision exceptionality.				

Based on data detailed in the above table, the hospitals with high average monthly numbers of visitors namely TASH, Menelik II, St. Petros, Yekatit 12, and Alert were selected. Employing the Convenience/consecutive sampling technique, all consecutive hypertensive ED visitors who satisfied inclusion criteria during the data collection period were included in the study the until required sample size was obtained. The numbers of the study population for each EDs of selected hospitals were proportionally allocated as fol

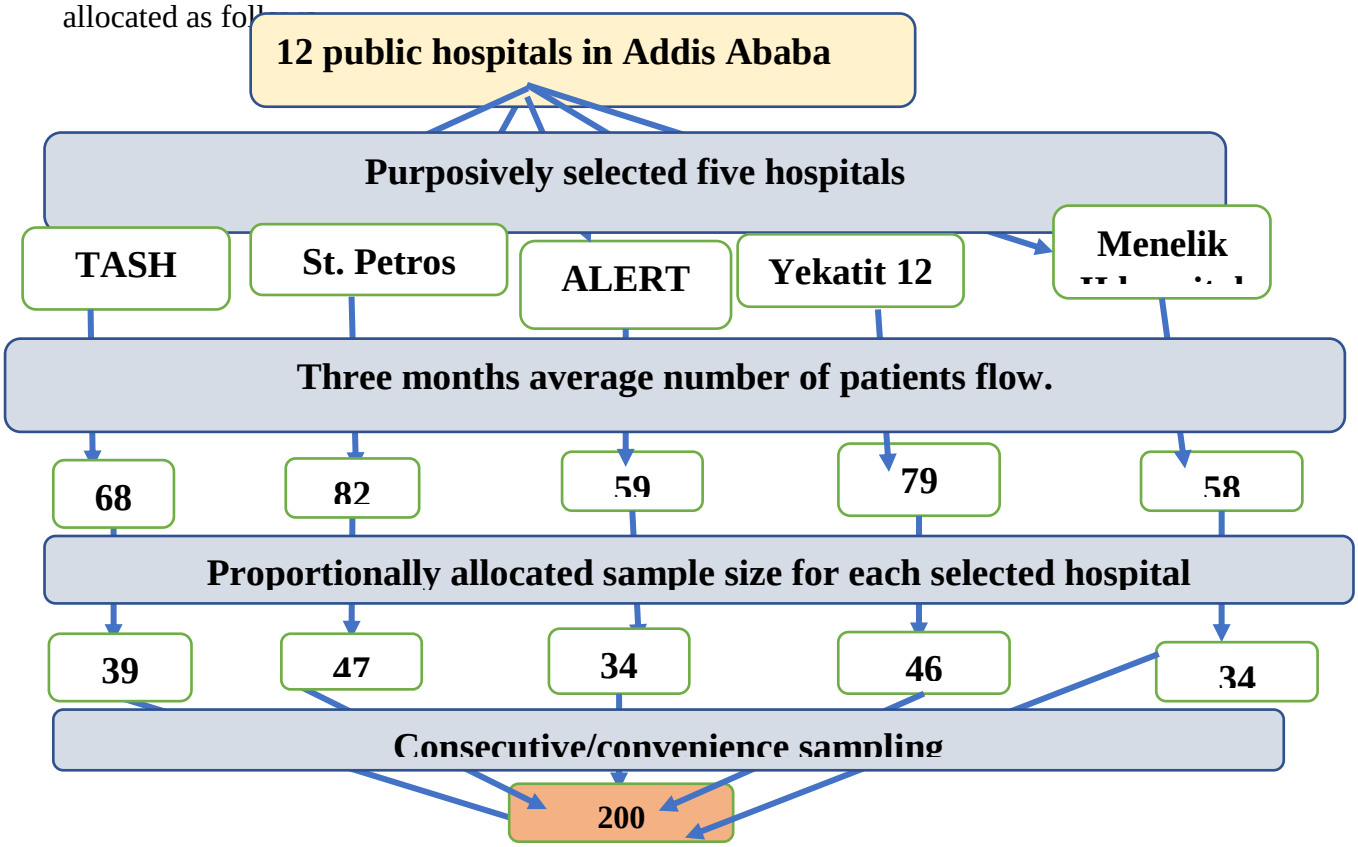

Figure 2. Shows the proportional allocation of a sample size to each emergency department of Addis Ababa's five selected hospitals, Ethiopia, 2023 G.

4.7. Study Variables

4.7.1. Independent Variables

Sociodemographic characteristics

- ✓ Age
- ✓ Gender
- ✓ Marital status
- ✓ Level of education
- ✓ Job-status
- ✓ Family income per month
- ✓ Residency

Clinical factors (condition related):

- ➢ Comorbidities.
- ➢ Duration of hypertension since diagnosis.

Other factors

- ✓ Sources of health information

4.7.2. Dependent Variables

- ➢ Knowledge of hypertension risk factors (good vs poor)

4.8. Operational Definitions

Knowledge of hypertension risk factors: -is information that individuals need to be aware of what are the factors that predispose to hypertension and other hypertension-related complications(40).

Good Knowledge: from a total of 11 standard knowledge assessment questions, the respondent who scored ≥9 questions which is equal to or greater than 80% had classified as good knowledge. (34)

Poor Knowledge: Those who scored less than or equal to 8 questions (Less than 80%) out of standard 11 knowledge assessment questions were classified as having poor knowledge. (34)

4.9. Data Collection Tool and Procedures.

4.9.1. Data Collection Instruments

Data was collected through face-to-face interviews using a pretested, structured questionnaire. The tool was adapted from other related studies (34,41) and it is made up of three sections. Section one was used to evaluate sociodemographic characteristics; section two was used to evaluate knowledge of hypertension risk factors; and section three was used to evaluate factors related to knowledge of hypertension risk factors. Knowledge about hypertension risk factors had evaluated by interviewing the participants to answer eleven standard knowledge assessment questions. Each correct response was scored one [1] and an incorrect response was scored zero [0]. The scores ≥80% of the total eleven standard questions were used to report participants as having good knowledge and the score <80% was used to categorize the study subject as having poor knowledge.

4.9.2. Data Quality Control

To ensure the quality of the data, a Pretest was done on 5% of the study population at Zewditu memorial hospital. Any error found during the pretest was addressed and modified in the final version of the data collection questionnaire. The adapted tool was translated from English to Amharic and had translated verbally to other language speakers during data collection. The validity of the tool was checked by senior experts. The training was given to data collectors and supervisors for two days before actual data collection aiming to inform the data collectors and supervisors about the concept of a questionnaire and how to interview, about ethical conduct, information privacy, and the rights of respondents to ensure the quality of data to meet the aim of this study. Daily checks were made to ensure that the data was accurate, consistent, and clean before analysis commenced.

4.9.3. Data Processing and Analysis

The collected data was sorted, cleaned, checked for consistency and missing values, and entered and coded using Epidata 4.6 before being uploaded to SPSS software version 27 for further analysis. Frequency and percentage were used to summarize and report categorical data. Continuous data were summarized using mean, median, standard deviation, and interquartile range. Binary logistic regression was used to

assess the association between dependent and independent variables. The variables from the bivariate analysis that had a P_value of 0.25 were moved to the multivariate analysis, and the variables from the multivariate analysis that had a P_value of 0.05 were declared statistically significant with a 95% confidence interval. To determine the strength of an association between independent and dependent predictors, the adjusted odd ratio (AOR) and 95% confidence interval (CI) were utilized. The assumption of multicollinearity was checked utilizing a variance inflation factor (VIF) that resulted between **1.172 to 2.047**. The adequacy of the final model was checked by the Hosmer and Lemeshow goodness of fit test and the P_value was **0.101**. The result was presented by a table and charts with narration.

4.10. Ethical Consideration

Ethical approval was obtained from the Addis Ababa University College of Health Science Department of Emergency Medicine Research Committee. Ethical clearance had obtained from the Addis Ababa health bureau for hospitals accountable to its leadership and the ethical clearance federally accountable hospitals selected in this study was collected from their respective IRB or ethical review committee. Before beginning the data collection, the respondents were told about the study's objectives, and written informed consent was obtained from each participant. At every stage of this study, confidentiality was maintained.

5. RESULT

5.1. Description of Sociodemographic characteristics of study respondents.

From two hundred (200) planned sample sizes, 194 respondents participated in this study producing a 97% of response rate. Since the age of respondents was normally distributed with a P-value of 0.451, The mean and standard deviation age of respondents was 52.87(±14.3). One hundred nine (56.2%) were in the age group of 50 and above. One hundred twenty (61.9%) were males, 142(73.2%) were married and 29.9% attended college/university followed by 50(25.8%) respondents who attended primary level of education. Seventy-five (38.7%) of respondents were self-employed followed by 44 (22.7%) of government/non-government company employees. One hundred sixty-seven (86.1%) were urban residents. The median monthly income was 4000 ETB, and 126 respondents (64.9%) fell into the category of incomes less than 5000 ETB. (Table 2).

Table 2. Sociodemographic characteristics of hypertensive emergency department visitors at Addis Ababa's selected public hospitals, Ethiopia, 2023 G.C, (n=194)

Variables		**Frequency**	**Percent**
Age	18 – 29	10	5.2
	30 – 49	75	38.6
	50 and above	109	56.2
	Total	194	100
Gender	Male	120	61.9
	Female	74	38.1
	Total	194	100

Marital status	Single	27	13.9
	Married	142	73.2
	Divorced	17	8.8
	Widowed	8	4.1
	Total	194	100
Level of education	Illiterate	42	21.6
	Primary/ 1 – 8	50	25.8
	secondary/ 9 – 12	44	22.7
	College/University	58	29.9
	Total	194	100
Occupational status	Govt/NGO employee	44	22.7
	Self-employed	75	38.7
	Farmer	14	7.2
	Housewife	24	12.4
	Daily laborer	7	3.6
	Retirement	12	6.2
	Others (specify)_	18	9.3
	Total	194	100
	<5000 ETB	126	64.9

Monthly income	≥5000 ETB	68	35.1
	Total	194	100
Place of residency	Rural	27	13.9
	Urban	167	86.1
	Total	194	100

5.2. Knowledge regarding hypertension risk factors

Excessive salt intake 177 (91.2%), obesity 166 (85.6%), excessive fatty/cholesterol content intake 157(80.9%), and physical inactivity 151 (77.8%) were risk factors dominantly known by respondents, whereas, familial history and being male gender were the only lowest responded risk factors by eight nine (45.9%) and 70(36.1%) of study respondents respectively. (Table 3).

Table 3. Level of knowledge of hypertension risk factors among hypertensive emergency department visitors at Addis Ababa's selected public hospitals, Ethiopia, March 15 to April 15, 2023 G.C (n=194)

Variables		**Frequency**	**Percent**
Psychosocial stress	Yes	128	66.0
	No	66	34.0
	Total	194	100
Excessive salt intake	Yes	177	91.2
	No	17	8.8
	Total	194	100
Physical inactivity	Yes	151	77.8

	No	43	22.2
	Total	194	100
Family history	Yes,	89	45.9
	No	105	54.1
	Total	194	100
Excessive fatty/cholesterol content intake	Yes	157	80.9
	No	37	19.1
	Total	194	100
Overweight/obesity	Yes	166	85.6
	No	28	14.4
	Total	194	100
Smoking	Yes	127	65.5
	No	67	34.5
	Total	194	100
Aging	Ye	124	63.9
	No	70	36.1
	Total	194	100
Diabetes mellitus	Ye	114	58.8
	No	80	41.2
	Total	194	100

Alcohol consumption	Yes	126	64.9
	No	68	35.1
	Total	194	100
Being male gender	Yes	70	36.1
	No	124	63.9
	Total	194	100

Among study respondents, eighty-one (41.8%) of them were found to have good knowledge about risk factors of hypertension (correctly responding to 9 or more out of 11 standard risk factors knowledge assessment questions), while 58.2% of participating respondents had poor knowledge regarding risk factors of hypertension. (figure 3)

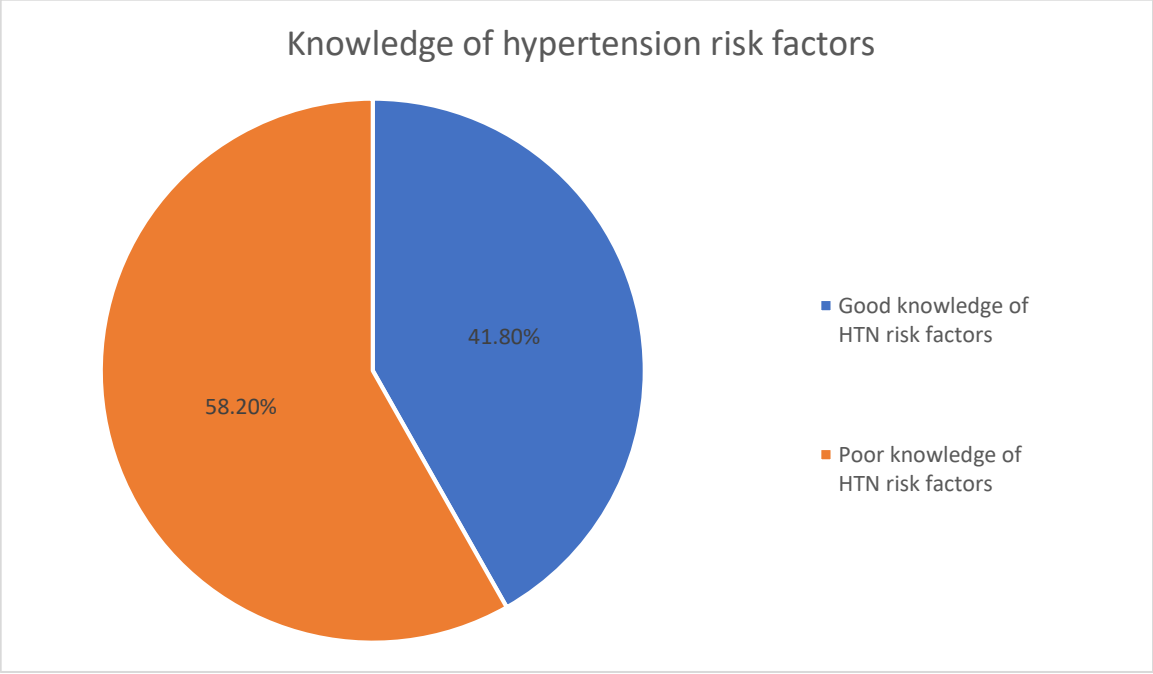

Figure 3. Level of knowledge regarding hypertension risk factors among hypertensive emergency department visitors at selected public hospitals in Addis Ababa, Ethiopia, March 15 to April 15, 2023 (n=194)

5.3. Sources of hypertension risk factors information

Among respondents who had information about risk factors of hypertension,170(87.6%) of them heard from health professionals followed by 35.6% of those who heard from mass media. (Figure 4)

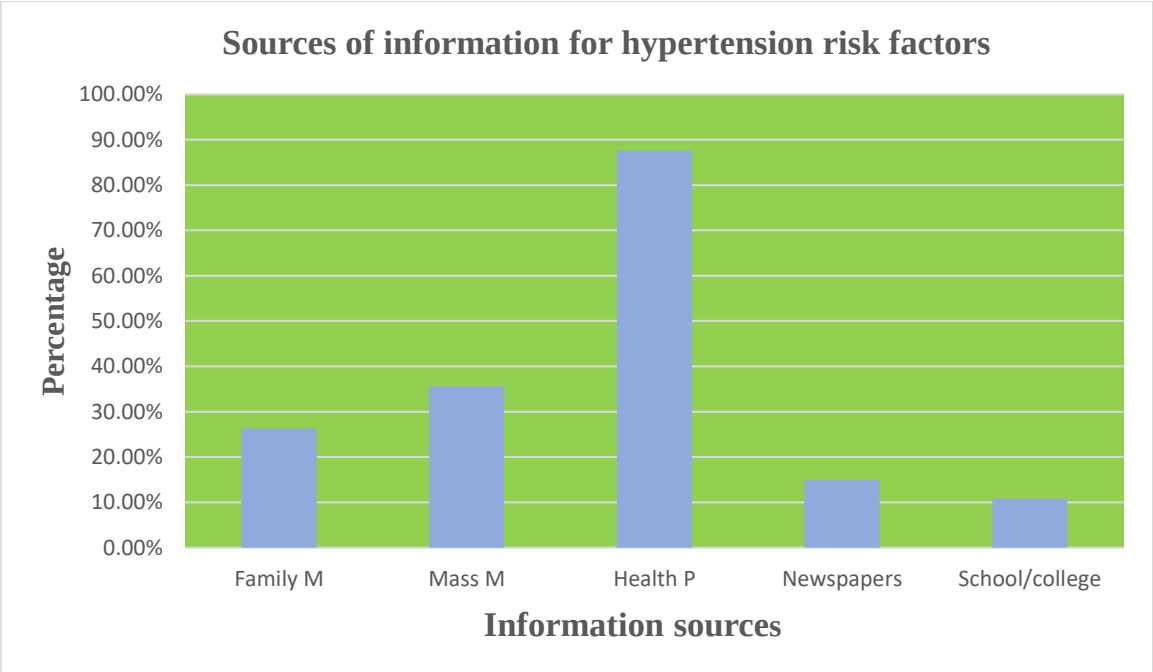

Figure 4. Sources of information about risk factors of hypertension among hypertensive emergency department visitors at selected public hospitals in Addis Ababa, Ethiopia, March 15 to April 15, 2023 G.C (n=194)

*Family M = Family members

*Mass M= Mass Media

*Health P= Health Professional

5.4. Factors Affecting the Knowledge of hypertension risk factors

Gender, level of education, monthly family income, place of residency, duration of hypertension since diagnosis, presence of comorbidities (DM, CKD, CVD, and STROKE,) and sources of information were associated with outcome variables (i.e. knowledge) in the bivariable regression analysis at P-value <0.25.

Amongst these variables' educational status, place of residency, duration of hypertension since diagnoses, comorbidities (diabetes, chronic kidney disease, stroke, and cardiovascular diseases,) and sources of information were statistically significant with hypertension risk factors knowledge at P_value <0.05. According to Multivariable analysis, people with higher education levels were found to be ten times more likely to be knowledgeable than people with no formal education or who were illiterate [AOR = 10.15, 95% CI: 3.06, 33.67], while people with a high school level of education were found to be about four times more likely to be knowledgeable than those who were illiterate [AOR = 3.78, 95% CI: 1.21, 11.77]. Urban residing respondents [AOR = 4.38, 95% CI; 1.20, 15.90] were about four times more likely to be knowledgeable than those residing in rural areas. Those who have had a condition for longer than a year [AOR = 3.21, 95% CI: 1.34, 7.66] were three times more likely to have good knowledge than people who have had a disease for a year or less. Respondents with comorbidities were about two times more likely to have good knowledge as compared with those who were without comorbidities [AOR = 2.43, 95% CI; 1.19, 4.92]. likewise, those who have access to the sources of information [AOR = 2.96, 95% CI; 1.14, 7.66] were about three times more likely knowledgeable.

(Table 4)

Table 4. Bivariate and Multivariate logistic regression analysis of factors associated with knowledge of hypertension risk factors among hypertensive emergency department visitors at selected public hospitals in Addis Ababa, Ethiopia, March 15 to April 15, 2023 G.C (n=194)

Variables		**Knowledge of risk factors for hypertension**				
		Poor	**Good**	**COR (95% CI)**	**AOR (95% CI)**	**P-value**
Age	18 – 29	6(60%)	4(40%)	1	1.38(0.25,7.56)	0.71
	30 – 49	43(57.3%)	32(42.7%)	1.11 (0.29, 4.29)	1.17(0.59, 2.31)	0.65
	≥50	64(58.7%)	45(41.3%)	1.05(0.28, 3.95)	1	1
Gender	Male	65(54.2%)	55(45.8%)	1.56(0.86, 2.83)	1.0(0.46, 2.13)	1.000
	Female	48(64.9%)	26(35.1%)	1	1	1
Marital status	Single	16(59.3%)	11(40.7%)	1	0.41(0.60, 2.81)	0.37
	Married	81(57%)	61(43%)	1.05(0.47, 2.53)	0.56(0.11, 2.94)	0.49
	Divorced	12(70.6%)	5(29.4%)	0.60(0.16, 2.21)	0.35(0.5, 2.47)	0.29
	Widowed	4(50%)	4(50%)	1.45(0.29, 7.09)	1	1
Educational status	No formal education/illiterate	34(81%)	8(19%)	1	1	1
	Primary/ 1 – 8	28(63.6%)	22(44%)	3.34(1.29, 8.64)	4.58(1.50,13.96)	**0.007****
	Secondary/ 9 – 12	28(56%)	16(36.4%)	2.43 (0.90, 6.50)	3.78(1.21,11.77)	**0.022***
	College/university	23(39.7%)	35(60.3%)	6.46(2.54,16.44)	10.15(3.06,33.67)	<**0.001****
Occupational status	Govt/NGO employee	19(43.2%)	25(56.8%)	1	1.75(0.53, 5.94)	0.37
	Self-employed	45(60%)	30(40%)	0.507(0.24,1.07)	0.92(0.29, 2.97)	0.89
	Farmers	12(85.7%)	2(14.3%)	0.12(0.025,0.63)	0.22(0.04, 1.42)	0.11
	Housewife	14(58.3%)	10(41.7%)	0.54(0.19,1.48)	0.86(0.23, 3.19)	0.83
	Daily laborer	7(99.0%)	0(0.0%)	0.00(0.00,1.79)	0.00(0.00, 0.00)	0.99
	Retirement	6(50%)	6(50%)	0.76(0.21,2.73)	1.35(0.28, 6.55)	0.71

	Others	10(55.6%)	8(44.4%)	0.60(0.20,1.84)	1	1
Monthly income	<5000 ETB	81(64.3%)	45(35.7%)	1	1	1
	≥500	32(47.1%)	36(52.9%)	2.02(1.11,3.68)	0.88(0.39,2.01)	0.772
Residence area	Rural	23(85.2%)	4(14.8%)	1	1	1
	Urban	90(53.9%)	77(46.1%)	4.92(1.63,14.84)	4.38(1.20,15.90)	**0.025***
Duration of hypertension since the onset	≤1 year	43(81.1%)	10(18.9%)	1	1	1
	> 1 year	70(49.6%)	71(50.4%)	4.36 (2.03, 9.35)	3.21(1.34, 7.65)	**0.009****
Comorbidities	Yes	40(45.5%)	48(54.5%)	2.65 (1.47, 4.78)	2.43(1.19, 4.91)	**0.014***
	No	73(68.9%)	33(31.1%)	1	1	1
Sources of information	Yes	79(52.0%)	73(48.0%)	3.92 (1.70, 9.03)	2.95(1.14, 7.65)	**0.026***
	No	34(81.0%)	8(19.0%)	1	1	1

COR= Crude Odds Ratio.

AOR= Adjusted Odds Ratio.

CI = Confidence Interval.

* = <0.05= statistically significant

** = <0.01= strong statistically significant

*** = <0.001= very strong statistically significant.

6. DISCUSSION

It is essential to increase public knowledge of the risk factors for hypertension to avert the onset of hypertension as well as its associated complications, such as diabetes, heart disease, kidney disease, and stroke, which could occur as a result of hypertension. This hospital-based study aimed to assess respondents' level of awareness of hypertension risk factors and to identify factors associated with it that may induce hypertension and subsequently result in the above-mentioned complications to address the overlooked worldwide socio-economic impacts of these diseases.

Accordingly, in this study the respondents correctly identified psychosocial stress (66%), excessive salt intake (91.2%), physical inactivity (77.8%), family history (45.9%), excessive fatty/cholesterol intake (80.9%), obesity (85.6%), smoking (65.5%), aging (63.9%), diabetes (58.8%), excessive alcohol consumption (64.9%), and being male (36.1%) as risk factors for hypertension. Overall, the study revealed that 41.8% of the study population had good knowledge about risk factors of hypertension (correctly responding to 9 or more out of 11 knowledge questions), while 113 (58.2%) of respondents had poor knowledge about risk factors of hypertension (answering 8 or fewer of 11 knowledge questions). This study finding can help the hospitals or health sector institutions and health care providers to educate patients about risk factors for hypertension while providing medical care. The emphasis of this study was to assess the knowledge gap of hypertensive patients regarding risk factors for hypertension and to identify affecting factors to tackle further complications.

The finding of this study was in line with studies conducted in Bangladesh with 41.3% of good knowledge, in Nigeria, smoking (73%), alcohol consumption (78%), family history (59%), aging (41%), and stress (37%) were identified as hypertension risk factors (31,33). This consistency may be due to the study participants' similar status in terms of hypertension risk factor awareness across these study areas. However, the finding of this study was higher than those of other research carried out in Rwanda: stress (23.2%), excessive salt intake (27.6%), excessive fatty intake (23.2%), and physical inactivity (6.6%) (42) and also higher than study conducted in Tanzania

(19.75% of good knowledge) and another relatively related study in Uganda (16%) of overall good knowledge (35,36). This observed discrepancy might be because of differences between study participants and time as well as sociodemographic disparities between these studies' regions.

Conversely, the present study was lower than other community-based observational studies conducted in rural India (52% of Good knowledge) and other relatively related community-based cross-sectional surveys done in Karen, rural Thailand, with an overall 50% of good knowledge by answering smoking (62%), obesity (60%), and alcohol consumption (60% of good knowledge) as risk factors (29,30). The observed discrepancy might be due to the disparities in the health care system, Sociodemographic status, and socioeconomic status between these countries. Similarly, the finding of the current study was relatively lower than other relatively related studies conducted in northwest Ethiopia (50.6% of good knowledge) about risk factors for hypertension. (39). The gap could be due to the large difference in enrolled study participants and disparities in study objectives. However, the findings of the current study were relatively similar to other related studies conducted in Addis Ababa that showed psychosocial stress (93%), excessive salt intake (96.5%), physical inactivity (91%), high-fat content intake (94.8%), obesity/overweight (90.8%), smoking (76%), and drinking alcohol (89%) (37). This observed consistency might be due to an identical study design, the same sampling strategy used, and the same study population, as well as sociodemographic similarities as a result of the same study area. In contrast to the above, this result is relatively high than other related studies conducted in Aksum town, northern Ethiopia, that show excessive salt content intake (61%), cholesterol content intake (51.8%), overweight (49.1%), and no physical exercise (36.3%) (38). The observed discrepancy might have occurred due to variations in study area, study time, and differences in the status of respondents.

Multivariable analysis revealed that those who attended tertiary level of education were ten times more likely to have good knowledge of hypertension risk factors than those who were illiterate. This finding was supported by other studies (29,32,33,37,38). Similarly, this study found that those who have lived with hypertension for greater than one year were three times more knowledgeable. This

result was consistent with a study previously conducted in Addis Ababa, Ethiopia(37). This might be because as the year of living with the disease elongated the patient's frequent chance of visiting health professionals in case of seeking care could help them to be more aware of it. Similarly, the respondents with comorbidities were two times more knowledgeable than their counterparts. This finding was relatively similar to another related finding from northwest Ethiopia (39). This might be because as comorbid as the patients there is a high chance of visiting health professionals seeking medical care and advice which helps them to have good exposure.

Accordingly, those who accessed information sources had a threefold higher likelihood of having good knowledge than those who did not, and respondents who resided in urban areas had a fourfold higher likelihood of having good knowledge than those residing in rural areas, respectively. This finding was in line with other cross-sectional studies done in Addis Ababa, Ethiopia (43). This might be because of being residing in an urban area has enabled patients easily access timely health information that enhances their awareness of disease more than those living in rural areas who did not access sources of information. Despite its all limitation, the finding was insightful to the level of knowledge of hypertension risk factors that the Addis Ababa health bureau, all hospitals, and all health workers should collaboratively work toward addressing the knowledge gap observed in this study. Future researchers should conduct a community-based mixed type of study by adding a qualitative method.

7. STRENGHT AND LIMITATIONS OF STUDY

7.1. Strength

In Addis Ababa (and even in Ethiopia), the study is the first of its kind. Previously, no study was done investigating knowledge of hypertension risk factors, although some studies (those used in the literature part of this study) included knowledge of hypertension risk factors as a subcomponent in the result part of their study. withstand numerous obstacles (such as recurrent appointments, requests being ignored, difficulty contacting all organizational levels, and identifying hospitals with a high load of hypertensive emergency department visitors per month among all public hospitals in Addis Ababa, etc.). it was a high yielded response rate and was a multicentered study.

7.2. Limitation

Consecutive patient recruitment in purposefully selected public hospitals might result in an under- or overestimation of knowledge of hypertension risk factors. The other main drawback is that it was limited to institution-based study and the sample size was small, which may limit its generalizability. Another limitation was the use of a cross-sectional study design, which can only identify associations but no causalities.

8. CONCLUSION AND RECOMMENDATIONS

8.1. Conclusion

Although it has drawbacks, this finding brings insight into the level of knowledge about hypertension risk factors. It was shown that the respondents' awareness of the risk factors for hypertension was minimal, with over 60% of the respondents having no or little knowledge of the risk factors. The findings of the study indicated that people are still not aware of the risk factors for hypertension, although 87.6% of respondents gained health information from health professionals, followed by 35.6% from mass media.

Educational status, place of residency, duration of the disease since diagnosis, comorbidities, and sources of information were independent variables significantly associated with good knowledge at P-value < 0.05.

8.2. Recommendation

The recommendation will be made to the following stakeholders:

*__Addis Ababa Health Bureau__: with other stakeholders in the health sectors need to extensively and aggressively work on how to increase institutional-based awareness about hypertension and its risk factors. The bureau has better designed a strategic plan that helps to address the gap in people's knowledge regarding factors predisposing to the occurrence of hypertension identified in this research work and to tackle the burden of hypertension and possible complications that could emerge as a result of hypertension mismanagement by promoting public education. Moreover, this finding could be helpful for the health bureau to devise an interventional strategy for public education promotion as well as hypertension screening programs in all public hospitals

under its administration to implement early preventative strategies at the community level.

*__To All Hospitals__: All hospitals in general and five selected public hospitals particularly included in this research work as study area should implement the hospital-based health education program to better teach patients about risk factors for hypertension. While patients wait for medical attention; the health education session can be scheduled to be delivered every morning. Health institutions' actions that consider the identified risk factors could be helpful in the prevention of hypertension among patients as well as the general community. Future intervention campaigns should be highly targeted, more educational, and more behaviorally focused to increase awareness and reduce risk.

*__To Researchers__: This study was hospital-based and conducted among known hypertensive patients, so future scholars better investigate nationwide or community-wide studies regarding hypertension risk factors, furtherly its complication, and prevention.

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Annexes

Annex I: Subject Information Sheet (English Version)

Dear participant!

Here, I the undersigned at Addis Ababa University, College of Health Sciences, Department of emergency medicine, Emergency Medicine and critical care nursing Graduate Study Program. Currently, I will be researching a topic entitled Assessment of Knowledge of hypertension risk factors among hypertensive emergency department visitors at selected government hospitals of Addis Ababa with funding from Addis Ababa University and the study will have no conflict of interest. for this study, you will be selected as a participant and before getting your consent you need to know all necessary information related to the study which will be detailed as follows.

Purpose of the study: the purpose of this study is to assess the knowledge gap regarding hypertensive risk factors and to identify factors associated with knowledge among hypertensive emergency department visitors at selected public hospitals in Addis Ababa.

Participants to be included: all consecutive hypertensive emergency department visitors who satisfied the inclusion criteria will be included in the study.

Benefits and risks of the study:

Benefits: For your participation in the study no payment will be granted or no special privilege to you or there is no immediate benefit for participation. Your participation in this study will be helpful to detect the knowledge gap regarding hypertension risk factors and their associated factors so that recommendations will be made to responsible organizations and stakeholders to fill those gaps.

Risks: The study will be conducted through interviews, and you are being asked for a little of your time, a maximum of 15 to 20 min, to help us in this study. There is no possible risk associated with participating in this study except the time spent responding to the questionnaire.

Confidentiality: Your name will not be written in this form and any information you tell us will not be disclosed to third party. Your participation is voluntary, and you are not obligated to answer any question you do not wish to answer. If you feel discomfort

with the question, it is your right to drop it any time you want. If you have questions regarding this study or would like to be informed of the results after its completion, please feel free to contact the principal investigator.

Address of the principal investigator:

Adem Rameto Kadir

Cell phone**: 09 31 73 48 99/ 09 26 88 29 47**.

E-mail: adikasharukhan@gmail.com

Or AHRI/ALERT Ethical Review Committee (AAERC) secretariat office phone no. +251 118342742

Are you satisfied with the information provided so far?

1. Yes……. Continue to the next page.

2. No …… I won't participate.

9.1. Annex II: Consent form (English Version)

In undersigning this document, I am giving my consent to participate in the study entitled "Assessment of Knowledge of hypertension risk factors among hypertensive emergency department visitors in selected public hospitals of Addis Ababa, Ethiopia" I have been informed that the purpose of this study is to assess the level of knowledge about hypertension risk factors among hypertensive emergency department visitors in selected public hospitals of Addis Ababa, Ethiopia, I have understood that participation in this study is entirely voluntarily. I have been told that my answers to the questions will not be given to anyone else and no reports of this study ever identify me in any way. I have also been informed that my participation or non-participation or my refusal to answer questions will have no effect on me. I understood that participation in this study does not involve risks. I understood that **Adem Rameto** is the contact person if I have questions about the study or my rights as a study participant.

Interviewee name: _____Date: _____

Signature: _____

Interviewer name: _____Date_____Signature:_____

9.2. Annex III: Consent form (Amharic Version)

ክፍል አንድ፡- የስምምነት መግለጫ ቀን.....ሰዓት.....

የቃለመጠይቅ መለያ ቁጥር.....

እንደምን አደሩ/ዋሉ? ስሜ.....ይባላል የስራ ባልደረባዬ ደግሞ ኣደመ ራመቶ ይባላሉ ;; በአዲስ አበባ ዩኒቨርስቲ የጤና ሳይንስ ኮላጅ የድንገተኛ ህክምና የትምህርት ክፍል ተማሪ ናቸዉ። ዛሬ በትቁር አንበሳ፣በጽትሮስ፤ በኣለርት፤ የካትት 12 እና በዳግማዊ ሚኒልክ ሆሰፒታሎች የደም ግፊት ታካሚወች ለደም ግፈት በሽታ ተጋላጭነት መንስኤ ዙሪያ ስላላቸዉ አጠቃላይ እዉቀት ለመገምገም የሚያስችል መረጃ ለመሰበሰብ ነዉ;; የሚሰበሰበዉ መረጃ ሙሉ በሙሉ በሚስጥር የሚያዝ መሆኑን እናረጋግጥልዎታለን;; የእርስዎ ስም፤ መለያ አድራሻ አይመዘገብም;; መረጃ መስጠት ካልፈለጉ መብትዎ ነዉ;; መመለስ ያልፈለጉትን ጥያቄ መዝለል/ማለፍ/ ይችላሉ;; ይሁን እንጂ የእርስዎ ትብብር እና ትክክለኛ ምላሽ ጥናቱና ምርምሩ እንዲሳካ ትልቅ አስተዋጽኦ ይኖረዋል;; ስለዚህ ለሚቀርብልዎት ጥያቄ ትክክለኛ መልስ ለመስጠት ፍቃደኛ ሆነዉ በትዕግስት እንዲመልሱልንእንጠይቅዎታለን፡፡ ቃለ መጠይቁ በግምት 15_20 ደቂቃ ይፈጃል፡፡

ጥያቄ አለዎት? በጥናቱ ውስጥ ለመሳተፍ ፍቃደኛ ነዎት?

አዎ---------- ወደ ሚቀጥለው ገፅ ይለፉ

አይደለሁም ----------

አመሰግናለሁ የስምምነት ፍቃዱን የወሰደው (የተቀበለው) ጠያቂ ስም ----------

----------ፊርማ----------

Annex IV: Questionnaires (English Version)

Part I: - Socio-demographic characteristics

Instruction one: Request you kindly go through each question and give your responses by placing a tick mark (√) against the box provided.

S.NO	Variables	Response	Skip to
101	Age	……. …years	
102	Sex	Male Female	
103	Educational status	A. No formal education B. Primary level (1-8) C. Secondary level (9-12) D. College & University	
104	Marital status	A. Single B. Married C. Divorced D. Widowed	
105	Occupation/job status	A. Governmental/private company employee B. Self-employed C. Farmer D. House-wife E. Daily laborer F. Others (specify)_	
106	Monthly income	----------in ETB	

107	Place of residency	A Rural B. Urban	

Part II: Knowledge of hypertension risk factors

Instruction: Kindly go through the questions given below and tick (√) against the appropriate answer. Each correct answer carries 1 mark and an incorrect answer (No/ I don't know) carries 0 mark.

S. NO	Variables	Response	
		Yes, I do	No, I don't
201	Do you know psychosocial Stress is a risk factor for hypertension?		
202	Do you know excessive salt intake is a risk factor for hypertension?		
203	Do you know physical inactivity is a risk factor for hypertension?		
204	Do you know the familial history of hypertension is a risk factor for hypertension?		
205	Do you know that a high cholesterol level (excessive fatty intake) is risky for hypertension?		

206	Do you know Overweight/obesity is a risk factor for hypertension?			
207	Do you know Smoking is a risk factor for hypertension?			
208	Do you know Aging is a risk factor for hypertension?			
209	Do you know that Diabetes is a risk factor for hypertension?			
210	Do you know Alcohol consumption is a risk factor for hypertension?			
211	Do you know male gender is risky for hypertension?			

Part III: Factors associated with knowledge of hypertension risk factors.

Instruction: - Kindly go through the questions given below and tick (√) against the appropriate answer. Each correct answer carries 1 mark.

S. N	Variables	Response	Skip to
301	How many years you have lived with hypertension?	_____ in years	
302	Do you have any known comorbidities?	A. Yes B. No	If no, skip to Q304
303	If yes, which of these comorbidities do you have?	A. Diabetes mellitus B. CKD C. Stroke D. CVD E. Others, Specify) _____	
304	What is your source of health information?	A. Family members B. Mass media C. Health professionals. D. Newspaper/ books reading E. School or educational institution	

Annex V: Questionnaires (Amharic Version)

ክፍል ኣንድ፡ የማህበራዊ ሁኔታ ቃለ መጠይቅ

መመሪያ: - ጥያቄዉን በደንብ ከተረዱ ኋላ ከተሰጡት ምርጫዎች ዉስጥ በመልስዎ ላይ (√) ምልክት ያስቀምጡ;

ተራ ቁጥር	ጥያቄ	አማራጭ በመልስዎ	ወደ ቀጣይ ጥያቄ ይለፉ
101	እድሜ	……. …አመት	
102	ጸታ	A. ወንድ B. ሴት	
103	የትምህርት ደረጃ	A. ማንበብ እና መጻፍ የማይችል B. የመጀመሪያ ደረጃ C. ሁለተኛ ደረጃ እና ከዚያ በላይ	
104	የጋብቻ ሁኔታ	A. ያላገባ/ች B. ያገባ/ች C. የፈታ/ች D. በሞት የተለዩ	
105	የስራ ሁኔታ	A. የመንግስት/የግል ድርጂት ሰራተኛ B. የግል ስራ C. ግብርና D. የቤት እመቤት E. የቀን ሰራተኛ F. ሌላ (ጥቀስ)_	
106	ወርኃዊ ገቢ	----------in ETB	

107	የመኖሪያ አከባቢ	A. ገጠር B. ከተማ	

Part II: ስለ ተጋላጭነት መንስኤ የእዉቀት ቃለ መጠይቅ

መመሪያ: - ጥያቄዉን በደንብ ከተረዱ ቦኋላ ከተሰጡት ምርጫዎች ዉስጥ በመልስዎ ላይ (√) ምልክት ያስቀምጡ;

ተራቁጥር	ጥያቄ	መልስ		
		አዎ	አላዉቅም	ወደቀጣይ ጥያቄይለፉ
201	የስነ-ልቦና-ማህበራዊ ዉጥረት/ጭንቀት ለደም ገፍት በሽታ ተጋላጭነት መንስኤ እንደ ሆነ ያዉቃሉ?			
202	ጨዉ የበዛበት ምግብ መጠቀም ለደም ገፍት በሽታ ተጋላጭነት መንስኤ እንደ ሆነ ያዉቃሉ?			
203	የአካል ብቃት እንቅስቃሴ አዘዉትሮ አለመስራት ለደም ገፍት በሽታ ተጋላጭነት መንስኤ እንደ ሆነ ያዉቃሉ?			

204	የዘር ሀረግ ለደም ገፍት በሽታ ተጋላጭነት መንስኤ እንደ ሆነ ያዉቃሉ?			
205	ቅባት የበዛበት(ከፍተኛ ኮለስተሮል) ያለዉ ምግብ አብዝቶ መጠቀም ለደም ገፍት በሽታ ተጋላጭነት መንስኤ እንደ ሆነ ያዉቃሉ?			
206	ከመጠን ያለፈ ዉፍረት ለደም ገፍት በሽታ ተጋላጭነት መንስኤ እንደ ሆነ ያዉቃሉ?			
207	ሲጋራ ማጨስ ለደም ገፍት በሽታ ተጋላጭነት መንስኤ እንደ ሆነ ያዉቃሉ?			
208	እድሜ ለደም ገፍት በሽታ ተጋላጭነት መንስኤ እንደ ሆነ ያዉቃሉ?			
209	ስኳር በሽታ ለደም ገፍት በሽታ ተጋላጭነት መንስኤ እንደ ሆነ ያዉቃሉ?			
210	አልኮል መጠጥ ለደም ገፍት በሽታ ተጋላጭነት መንስኤ እንደ ሆነ ያዉቃሉ?			
211	የወንድ ፆታ ለደም ገፍት በሽታ ተጋላጭነት መንስኤ እንደ ሆነ ያዉቃሉ?			

Part III: ተያያዥ ነገራቶች

መመሪያ: - ጥያቄዉን በደንብ ከተረዱ ቦኋላ ከተሰጡት ምርጫዎች ዉስጥ በመልስዎ ላይ (√) ምልክት ያስቀምጡ

ተራ ቁጥር	ጥያቄ	መልስ	ወደ ቀጣይ ይዝለሉ
301	አንድ ጤናማ ሰዉ የደም ግፊት ስንት በስንት ነዉ?	A. 90-130 SBP & 60-90 DBP B. BP b/n 130-140 SBP or 60-90 DBP C. BP ≥140/90 D. I don't know	
302	ይህ በሽታ ከታወቀቦት ስነት ዓመት ሆኖታል?	_____ ዓመት	
303	የታወቀ ተጋደኝ በሽታ አለቦት?	A. አዎ B. የለኘም	ከለሌቦት ወደ 304 ይዝለሉ,
303	መልሶ አዎ ከሆነ, ያለቦትን ይዘርዝሩ	A. ስኳር በሽታ B. ኩላሊት በሽታ C. እስትሮክ D. ልብ በሽታ E. ሌላ ካለ ይግለፁ _____	
304	የጤና መረጃ አግኝተዉ ከሆነ ከማን አገኙት?	A. ከቤተሰብ አባላት B. ከመገናኛ ብዙሀን C. ከጤና ባለሞያ D. ከጋዜጣ ወይም መፅሓፍትን በማንበብ E. ምንም መረጃ አላገኘዉም።	

APPROVAL SHEET

I, the undersigned MSc student, declare that I have submitted my original thesis on the title ASSESSMENT OF KNOWLEDGE OF HYPERTENSION RISK FACTORS AND ASSOCIATED FACTORS AMONG HYPERTENSIVE EMERGENCY DEPARTMENT VISITORS AT SELECTED PUBLIC HOSPITALS, ADDIS ABABA, ETHIOPIA, 2023, to the institutional review board of Addis Ababa University College of health science Department of Emergency Medicine.

Submitted by:

ADEM RAMETO (Bsc) _____ _____ _____

Name of student Signature Date

This thesis by Adem Rameto is accepted in its present form by the member of the examiners as satisfying the thesis requirement for the degree of master in emergency medicine and critical care.

Approved by:

MEBRAT MICHAEL (Msc in EMCC, Senior Lecturer) _____ _____

Name of advisor Signature Date

Dr. TEMESGEN BEYENE (MD, Ass.prof) _____ _____

Name of advisor Signature Date

EXAMINER

Dr. MERHAWI K. (MD, Ass.prof) _____ _____

Name Rank Signature Date

DEPARTMENT HEAD

Dr. TEMESGEN BEYENE (MD, Ass. prof). _____ _____

Name Rank Signature Date

STATEMENT OF THE AUTHOR.

By my signature below, I declare and affirm that this thesis is my work. I have followed all ethical principles of scholarship in the preparation, data collection, analysis, interpretation, and completion of this thesis. All scholarly matter that is included in the thesis has been given recognition through citation. I affirm that I have cited and referenced all sources used to prepare this document. Every serious effort has been made to avoid any plagiarism in the preparation of this thesis. This thesis is submitted in partial fulfillment of the requirement for the degree of master's from the School of Graduate Studies at Addis Ababa University. The thesis is deposited in the Library of Addis Ababa University and is made available to the user under the rules of the library. I strongly declare that this thesis has not been submitted to any other institution anywhere for the award of any academic certifications. Brief quotations from this thesis may be used without special permission provided that accurate and complete acknowledgement of the source is made. Requests for permission for extended quotations from, or reproduction of, this thesis in whole or in part may be granted by the Head of the School or Department or the Dean of the School of Graduate Studies when in his or her judgment the proposed use of the material is in the interest of scholarship. In all other instances, however, permission must be obtained from the author of the thesis.

Student Name:

ADEM RAMETO (BSC). Signature: _____ Date: _____

Research advisors:

Mrs. MEBRAT MICHAEL (Msc in EMCC) _____ _____

Name: Rank Signature Date

Dr. TEMESGEN BEYENE (MD, Ass.prof.) _____ _____

Name: Rank signature Date