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## Assessment of Knowledge, Attitude and Practice of Hypertensive Patients towards the Non-Medical Management of Hypertension in Bishoftu General Hospital, 2016

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**Abstract** The overall objective of this study was to assess the knowledge, attitude and practice of hypertensive patients towards the non-medical management of hypertension in Bishoftu General Hospital. A cross sectional study was conducted in Bishoftu General Hospital. Study was conducted on 281 hypertensive patients, out of which 114 males and 167 females were participated. Among total respondents, 72.27% have good knowledge, 68.32% have good attitude and 61.39% have good practice. 86.14% of them know foods that are restricted for hypertensive patients, the rest (13.86%) don't know and (64.36%) of them took balanced diet, however (35.64%) respondents do not take balanced diet. The finding of this study shows that, 45-49 age groups are most dominant. The dominant Ethnic groups are Oromo and most of them follow Orthodox religion. The marital status of the population was married. Literate people are much greater than illiterate and Merchants are the dominant ones. The majority of the population gets 401-800 Birr per month and most of them live in urban area.

**Keywords** Hypertension, Coronary Heart Disease, non- medical management of hypertension, Bishoftu General Hospital, Ethiopia

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### 1. Introduction

#### 1.1. Back Ground

Hypertension remains as one of the most important public health challenges worldwide because of the associated morbidity, mortality, and the cost to the society [1]. It is one of the most significant risk factors for cardiovascular (CV) morbidity and mortality resulting from target-organ damage to blood vessels in the heart, brain, kidney, and eyes [2-3]. Hypertension causes 7.1 million premature deaths each year worldwide and accounts for 13% of all deaths, globally [4].

Analysis of the global burden of hypertension revealed that over 25% of the world's adult population had hypertension in A2000, and the proportion is expected to increase to 29% by 2025 (1,2). According to some estimates, the larger proportion of the world's hypertensive population will be in economically developing countries by the year 2025 owing to their larger population proportion, a change in life style and sedentary life [5].

In Africa, 15% of the population has hypertension [2-3]. Although there is shortage of extensive data, 6% of the Ethiopian population has been estimated to have hypertension. Approximately 30% of adults in Addis Ababa have hypertension above 140/90 mmHg or reported use of anti-hypertensive medication [3]. Prevalence of hypertension was 13.2% in 2013 in Jimma [1].

Despite the availability of safe and effective antihypertensive medications and the existence of clear treatment guidelines, hypertension is still inadequately controlled in a large proportion of patients worldwide [6]. Unawareness of lifestyle modifications, and failure to apply these were one of the identified patient- related barriers to blood pressure control [7].

It is possible to prevent the development of hypertension and to lower blood pressure levels by simply adopting a healthy lifestyle. The recommended lifestyle measures that have been shown to be capable of reducing blood



pressure include: salt restriction, moderation of alcohol consumption, high consumption of vegetables and fruits and low-fat and other types of diet, weight reduction and maintenance and regular physical exercise [8].

### **1.2. Statement of the Problem**

As the 2012 world health statistics, estimated from 51 million global deaths in 2008, 36 million (63%) were due to non communicable diseases (NCDs). Raised blood pressure (RBP) is one of the behavioral and physiological risk factor to which 30% of death accounted. Hypertension (HTN) is reported to be the fourth contributory factor for premature death in developed countries and seventh in developing countries [9].

Recent report indicated that nearly one billion people worldwide affected by hypertension, leading to heart attack and stroke. Researchers estimated that hypertension currently killed 1.7 million people annually [10].

World Health Organization (WHO) is developing a global plan of action for 2013 to provide a road map of country led action for prevention and control of NCDs.

Hypertension is responsible for at least for 45% of death due to heart disease and 51% of deaths due to stroke. In 2008 worldwide, 40% of adult aged above 25 years was diagnosed with hypertension. A condition rose from 600 million in 1980 to 1 billion in 2008. It is highest in African regions at 46% of adult aged 25 years and above where us the lowest prevalence is 35% found in America [9].

The increasing in prevalence of hypertension is attributed to population growth; aging and behavioral risks such as unhealthy life style. HTN can be managed by life style modification, such as limiting alcohol intake, physical exercise, reducing sodium intake, stopping smoking cigarette and reducing intake of dietary saturated cholesterol and fat [11].

Most of the time, the solution offered to people with high blood pressure is usually to be put on drugs. Drugs do not address actual cause of condition itself, drugs merely suppress the symptoms or RBP that shows something wrong is happened. These are the reason that people with RBP are often started on one medication. Then the second or third drug has to be added. By this time the individual is often experienced with one or more of the many side effects (SEs) created by this drugs [12-13].

Therefore, not addressing initial cause of hypertension timely will have significant economic and social impact and more focus should be given around the world to control and improve their quality of life [14-15].

African countries such as Ethiopia, increased urbanization and changing life style have contributed to the rise in NCDs. Results of collaborative studies that have been conducted among urban dwellers in Ethiopia in the past three years, shows that the cardiovascular disease (CVD) risk factor was high among study participants and obesity was found to be an emerging problem. Little is known about magnitude and determinant of HTN in Ethiopia and the RBP are increasing partly because of lack of lifestyle management of HTN [16-17].

### **1.3. Significance of the Study**

Hypertension is an increasingly important medical and public health issue worldwide. It has become a significant problem in many developing countries experiencing epidemiological transition from communicable to non-communicable chronic diseases. Therefore, this research will provide a base line data for designing important interventions. In addition, the document will serve as a comprehensive evaluation of HTN burden on the continent and potential for prevention and management to reduce complications related to HTN. Above all since there is no research conducted in similar area of the interest, in the study area the finding of this study may be used as a reference line data for those who are interested in carrying out further research.

## **2. Literature Review**

In 2011 cross sectional survey was conducted in Shandong, China, among respondents of 15,350 adults aged between 18-69 years using standardized questioner to assess KAP of sodium intake in hypertensive patients. The KAP of dietary sodium intake among urban residents were more favorable than rural residents. Women were likely to have more favorable for the KAP than men. About 80% of respondents were favored low salt diet [18].

A total of 664 cardiac hypertensive patients were included in the study consisting of 422 males and 242 females, the data regarding the awareness of cardiac hypertensive patients in relation to hypertension risk factors and complications. Risk factor most commonly identified by the participants was too much salt intake (78.8%). Heart attack and stroke as a complication was recognized by 374 (56.3%) and 185 (27.9%) participants, respectively. [19]

In this study 110 hypertensive patients from tertiary level hospital in Bangladesh were recruited. From this study the top five self management behavior which most of participants never practiced were; among these (99.1%) drinking alcohol; (87.3%) reducing the amount of food per meal; (77%) exercising; (69.1%) smoking; (38.2%) controlling of stress [20].



In this study 119 person were enrolled, 70 (58.82%) of them are females and 49 (41.18%) are males. (8.4%) of population sample are illiterate,(2.5%)had primary education,( 36.1%) had secondary education and (52.9%) had higher education. 97 persons (81.51%) thought that there is a relation between the weight and hypertension, they thought that the overweight people are 2 to 6 times more than the normal people to develop hypertension. 100 persons (84.03%) thought that practice exercises regularly is reducing the risk of having high blood pressure.(17.65%) of the population sample thought that the stress is the most serious reason for Hypertension.(7.56%) thought that the salty food is the reason, but (64.71%) thought that all of those reasons cause Hypertension. (75.63%) of the population sample thought that reducing drinking caffeine (as tea, coffee and soda) helps in controlling Hypertension.(68.91%) of the population sample thought that following a certain diet in eating helps in keeping blood pressure normal. (84.87%) of the population sample thought that taking low salt helps in reducing blood pressure. smoking.(61.54%) of the population sample said that they practice exercise regularly as a trying to be healthy and to avoid diseases, while (30.77%) said that they don't practice any type of exercises. [21].

Out of 236 hypertensive respondents; More than half (54%) of participants knew that physically passive lifestyle can lead to BP increase. Similar proportions of participants knew that alcohol abuse (48.3%), smoking cigarettes (46.2%) and salt rich diet (47.0%) can contribute to hypertension. The percentage of men (51.7%) who knew that smoking can contribute to the development of hypertension was substantially higher than the corresponding percentage of women (40.7%). The majority of participants (82.0%) knew that hypertension can lead to other health problems in case of absence of or not following the treatment. The most frequently mentioned conditions which can be developed due to hypertension as reported by participants included heart diseases (68.6%), followed by stroke (53.9%), kidney (3.1%) and eye diseases (1.6%). Almost 48% of respondents reported never adding salt to food before trying it, About44% of participants reported never drinking alcohol. Almost 34% indicated drinking less than one portion of alcohol a week. None of the female participants reported past or current smoking. Almost 41% of male respondents are current smokers. The majority of respondents (91.9%) reported walking and being physically active every day of the week. Only 3% of participants mentioned not having any physical activity [22].

In 2013, a cross sectional study was conducted in Saudi to assess the awareness, attitude and distribution of high blood pressure among health professionals with a total of 672 participants. 44.1% and 36.1% of respondents said that stress and lack of physical activity are one of risk factors for hypertension respectively [23].

In 2006/2007a cross sectional study was conducted in Dar es Salaam, to assess KAP towards risk factors for hypertension with a total of 319 people. Among them more than half of the study population 213 (66.8%) had knowledge about hypertension. Out of 213 people who had knowledge on HTN, only 63 (29.6%) had knowledge on the risk factors for HTN [24].

In 2014 a community based cross sectional study was conducted in Bedele town, South West Ethiopia to assess the KAP of hypertensive Patients with a total of 396 Participants of whom 67.4% were male. The result reported 44.8% of the total participants (those with HTN) were aware of their NMM [25].

In 2014 a community based cross sectional study is conducted in Mekelle city, Northern Ethiopia with a total of 709respondents.Among them 43.6% reported to drink alcohol. Less than quarter of them (15%) of the respondents reported to do physical exercise [26].

### **3. Objectives**

#### **3.1. General Objectives**

To assess the knowledge, attitude and practice of hypertensive patients towards the non-medical management of hypertension at Bishoftu General Hospital.

#### **3.2. Specific Objectives**

- To assess the level of knowledge of hypertensive patients towards the non-medical management of hypertension
- To identify the practice of hypertensive patients towards the non-medical management of hypertension.
- To assess the attitude of hypertensive patients toward the non-medical management of hypertension.

### **4. Methodology**

#### **4.1. Study Area and Study Period**

Bishoftu is one of the popular historical and walled towns in Eastern Shoa part of Ethiopia. The town is surrounded by seven lakes. It is located on 47 km East of Addis Ababa and 50 km to the west of the zonal capital Nazareth. Bishoftu town is characterized by the following ethnic groups such as Oromo, Amhara, Tigre, Gurage, Wolyta and others.



Bishoftu Hospital provides a general health care service for three towns and five districts to 1.2 million peoples. It has total of 102 beds distributed in different wards, such as medical, surgical, gynae and emergency department and its catchments area is around 3,600 square kilo meter.

The hospital also provides different service like, OPD service, MCH service, psychiatric clinic and medical follow up or chronic illness like DM, HTN etc. It is convenient for the patients because all patients get all necessary services.

## 4.2. Study Design

Cross sectional study design was be conducted at Bishoftu General Hospital

## 4.3. Population

### 4.3.1. Source Population

All hypertensive patients in Bishoftu General Hospital

### 4.3.2. Study Population

The selected hypertensive patients in Bishoftu General Hospital at HTN follow-up clinic.

## 4.4. Inclusion and exclusion criteria

### 4.4.1. Inclusion criteria

All hypertensive patients who attend in Bishoftu Hospital, HTN follow up clinic during data collection time that can respond to our questionnaire was be included.

### 4.4.2. Exclusion criteria

- Hypertensive patients who have mental problem.
- Hypertensive patients who are severely ill.
- Hypertensive patients who are not volunteer to respond to my questionnaire.

## 4.5. Sample size determination and sampling technique

### 4.5.1. Sample size determination

Sample size will be calculated by using single proportion formula.

$$n = \frac{(Z)^2(p.q)}{d^2}$$

Where,

n= sample size

p= prevalence rate = (50%)

Z=standard normal variable that at the confidential level of 95%

d= margin of error which is 5%

q= 1-p

N= total population

$$n = \frac{(1.96)^2(0.5 \times 0.5)}{(0.05)^2} = 384.16 \approx 384$$

$$n=384$$

Since population is less than 10,000, so the sample area adjusts using the following correction formula.

$$n_f = n_i + \frac{ni}{N}$$

Where

n<sub>i</sub>= initial sample size

n<sub>f</sub>=new sample size

N= total population=755

N<sub>f</sub>=255

Then 10% of the new sample size is added by considering for non-respondent rate

10/100x256=25.6. Therefore the sample size is approximately 281.

### 4.5.2. Sampling Technique

Quota sampling technique is the most practical and popular means of sampling the population with non-medical management of hypertension. In this study Quota sampling technique was being used to allocate the study population.



#### 4.6. Data Collection Tools and Methods

Data was being collected using a pre-tested, structured and interviewer guided questionnaire adopted from related studies. The questionnaire was being prepared in English. During data collection binder, pencil and sharpener, eraser and marker, note book and pen used.

#### 4.7. Variables

##### 4.7.1. Dependent variables

- Knowledge
- Attitude
- Practice

##### 4.7.2 Independent variables

- Age
- Sex
- Educational status
- Religion
- Ethnicity
- Marital status
- Residence
- Access to health education by Health Extension Workers
- Occupation
- Income
- Time of follow-up

#### 4.8. Operational Definition

**Knowledgeable-** when participants of the study answer four or above out of the knowledge questions (4 or >4).

**Non- knowledgeable-**when patients respond below the mean score on knowledge question (<4).

**Good attitude-** when patients respond the mean or above out of the attitude questions (3 or >3).

**Poor attitude-** when patients respond below the mean score on attitude questions (<3).

**Good practice-** when patients respond the mean or above out of the practice questions (6 or >6).

**Poor practice-** when patients respond below the mean score on the practice questions (<6).

#### 4.9. Data Quality Control

Data collection and checking was be done following every activity and quality control by avoiding repetition of interview questioner and also check its consistency and its completeness using cross tabulation method. The questionnaire was being prepared in English.

A week before data collection, pretest was being carried out in Bishoftu General Hospital with a population of similar characteristics on the 10 percent of total sample size. Questionnaire was being evaluated for acceptability of instrument, reaction of respondent and time required to fill the questionnaire.

#### 4.10. Data Processing and Analysis

Data was be processed primarily by dummy table in number and percentage. Data was also be analyzed manually by using scientific calculator and the investigator was be tabulate the collected data using percentage, average and other statistical tools was be used to analyze the data.

#### 4.11. Ethical Consideration

A formal letter of cooperation was being written from Ambo University, College of Health and Medical Sciences, Department of Pharmacy to Bishoftu General Hospital administrative bureau to get permission for data collection. The interviewees were being also got an informed consent. Overall the study participants were verbally informed about the aim and purpose along with the right to refuse.

#### 5. Dissemination of the Results

The result of this study was being presented to AU, CHMS; Department of Pharmacy and copy was placed in the library for the students to use it.



## 6. Results

### Part 1 Sociodemography

total sample size collect data from 281 respondents and according to research result, found that female Respondents are dominant, 45-49 age groups dominant, also Orthodox religion and Muslim population were dominant. On the other hand the dominant educational status of respondents is Grad 1-8 and married marital status is dominant.

**Table 1:** Age and sex distribution of non medical management of hypertensive patients in BGH

<b>Sex</b>	<b>Frequency</b>	<b>Percent</b>
Male	114	40.6
Female	167	59.4
<b>Total</b>	<b>281</b>	<b>100</b>
<b>Age</b>		
20-24	8	2.9
25-29	11	3.9
30-34	31	10.9
35-39	33	11.8
40-44	45	15.8
45-49	47	16.8
50-54	29	9.9
55-59	28	9.9
60-64	35	12.8
65-69	8	2.9
70	6	1.9
<b>Total</b>	<b>281</b>	<b>100</b>

**Table 2:** Ethnicity and Educational status of hypertensive patients in BGH, HTN follow up Clinic

<b>Ethnicity</b>	<b>Frequency</b>	<b>Percent</b>
Oromo	117	41.63
Tigre	60	21.35
Amara	55	19.57
Gurage	30	10.69
Others	19	6.76
<b>Total</b>	<b>281</b>	<b>100</b>
<b>Educational status</b>		
Not able to read and write	61	21.8
Grade 1-8	103	41.58
Grade 9-12	59	19.79
>Grade 12	47	16.83
<b>Total</b>	<b>281</b>	<b>100</b>

**Table3:** Religion and residence of hypertensive patients in BGH, HTN follow up clinic

<b>Residence</b>	<b>Frequency</b>	<b>Percent</b>
Urban	225	80.2
Rural	56	19.8
<b>Total</b>	<b>281</b>	<b>100</b>
<b>Religion</b>		
Orthodox	142	50.5
Muslim	111	39.6
Protestant	25	8.9
Others	3	0.99
<b>Total</b>	<b>281</b>	<b>100</b>

From the total of 281 respondents of hypertensive patients in BGH 181 (64.35%) are married, 44 (15.84%) are divorced, 44 (15.84%) are widowed and 13(3.96%) are single.



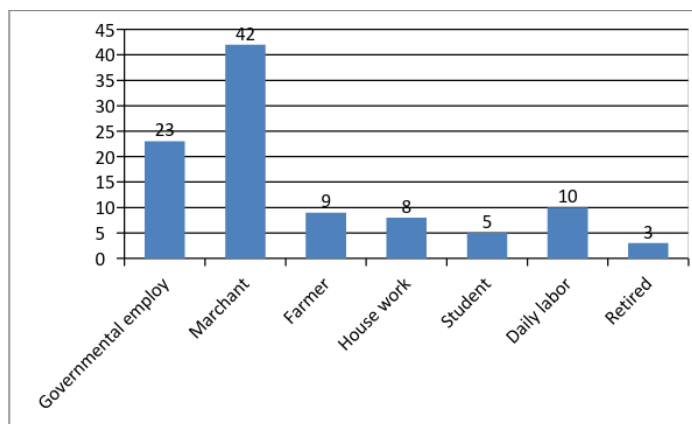


Figure 1: Occupational status of hypertensive patients in Jugel Hospital

### Monthly income

Among 281 respondents of hypertensive patients in BGH, 47 (16.83%) get <400 birr per month, 72 (25.74%) get between 401-800 birr per month, 50 (17.82%) get between 801-1200 birr per month, 58 (20.79%) get between 1201-1600 birr per month, 53 (18.81%) get > 1600 birr per month. On the other hand, out of 281 respondents of hypertensive patients in BGH, 100 (35.58%), 111 (39.50%), 42 (14.85%), 17 (6.04%) and 11 (3.91%) had started follow up < 1 year, 1-5 years, 6-10 years, 11-15 years and > 15 years respectively.

### Part 2 Source of Information

Among 281 respondents, 239 (85.05%) of them have heard the NMM of Hypertension. The rest of them never heard the NMM of Hypertension. Out of 239 (85.05%) respondents who have heard about the NMM of Hypertension, 156 (55.51%) of them get information from health professional, 53 (18.86%) of them get information from the media, 24 (9.55%) of them information from the relatives and the rest 6 (2.13%) get information from other resources.

Similarly from 239 (90.09%) respondents who have get information from BGH, 214 (80.21%) respondents have understood the information given at the follow-up clinic.

### Part 3 Knowledge Results

Among 281 respondents, 242 (86.14%) of them know foods that are restricted for hypertensive patients, the rest 39 (13.86%) don't know. From the total of 242 respondents who knows foods that are restricted to hypertensive patients, 186 (77.01%) of them knows salt is restricted, 35 (14.46%) of them know fat is restricted, 19 (9.50%) of them know coffee is restricted and others 2 (0.82%) of them know other foods that are restricted to hypertensive patients.

Similarly, out of the total 281 respondents, 189 (67.33%) of them know foods that are allowed to hypertensive patients, the rest don't know.

From the total of 281 respondents, 45 (15.84%) of them know that hypertensive patients can drink alcohol and smoke cigarette, however 236 (84.16%) know that hypertensive patients should not drink alcohol and smoke cigarette. Out of 45 (15.84%) respondents, 6 (13.33%), 9 (20%) and 20 (44.44%) responded that drinking alcohol and smoking cigarette is useful for health, to stimulate and to relieve stress respectively. Of 236 (84.16%) respondents, responded that hypertensive patients should not drink alcohol and smoke cigarette, because harmful for health 122 (51.76%), aggravates health problems 58 (24.7%), economic problems 40 (16.67%) and others 16 (7.06%).

On the other hand, from 281 respondents, 33 (11.88%) of them use salty diet and the rest use salt free diet, also among the total of respondents who says hypertensive patients can use salty diet, the possible reasons for the use of salt is 164 (58.3%) essential spice and the rest 117 (41.7%) says salt is useful for health. However 248 (88.12%) of respondents, say that hypertensive patients cannot use salt diet; the reason for that is, it is harmful for health or 149 (68.54%) and aggravates hypertension symptom or 99 (50.56%).

Out of 281 total respondents, 56% of them know the benefit of stress reduction as non medical management of hypertension. But the rest don't know and from the total of 281 respondents, 150 (53.46%) know that physical exercise is important to hypertensive patients for sustainable and stable life, the rest 131 (46.54%) don't know.

### Part 4 Attitude Results

Among 281 respondents 231 (82.18%) of them beliefs that, it is good to avoid extra added salt in their diet, 50 (17.82%) of them belief that adding extra salt is good. Out of 281 respondents, 222 (79.18%) of them belief that



excess alcohol intake can worsen the blood pressure level, however 59(20.82%) of them don't believe, also from 281 of total respondents, 55% of them believe the importance of regular physical exercise in NMM of hypertension. The rest don't have belief.

On the other hand, from the total 281 respondents, 167(59.4%) of them believe that stress reduction is important in the management of hypertension, the rest 115 (40.6%) of them don't believe. Out of 281 total respondents, 172 (61.39%) of them think that avoiding smoking cigarette is good for their health, but 109 (38.61%) of them don't think

### Part 5 Practice Results

Among 281 total respondents, 181(64.36%) of them took balanced diet, however .Out of 281 total respondents, 231 (82.20%) of them perform regular physical exercise.

Among 281 total respondents, 192(68.32%) of them avoid to take extra salt and 89(31.68%) of them not avoid.

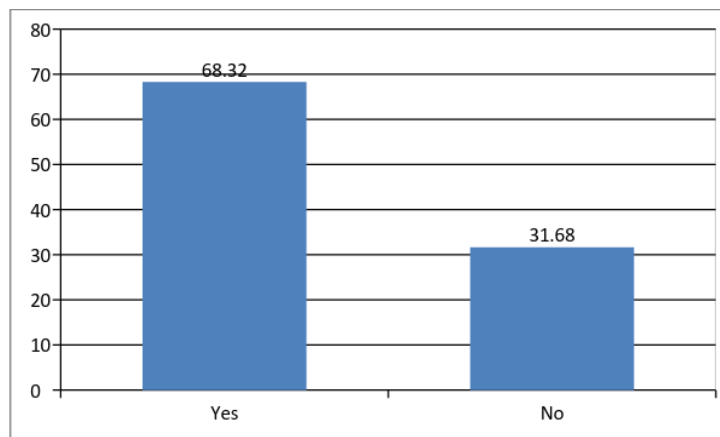


Figure 2: practice of hypertensive patients towards the use of salty diet as non management of hypertension in BGH follow-up clinic

From the total of 281 respondents, 83(29.70%) smoke cigarette, the rest are non smokers and 20 (19.80%) drink alcohol.

On another hand, from the total 281 respondents, 42 (14.85%) of them eat high fatty containing foods, 239 (85.15%) of them do not eat. Among the total of respondents who eat high fat containing foods or 42 (14.85%), 30 (71%) of them said that they eat fat and 12 (29%) of them said milk products.

Although from the 281 respondents 127 (45%) of them have obstacles to follow their dietary prescriptions, 154 (55%) of them haven't any obstacles.

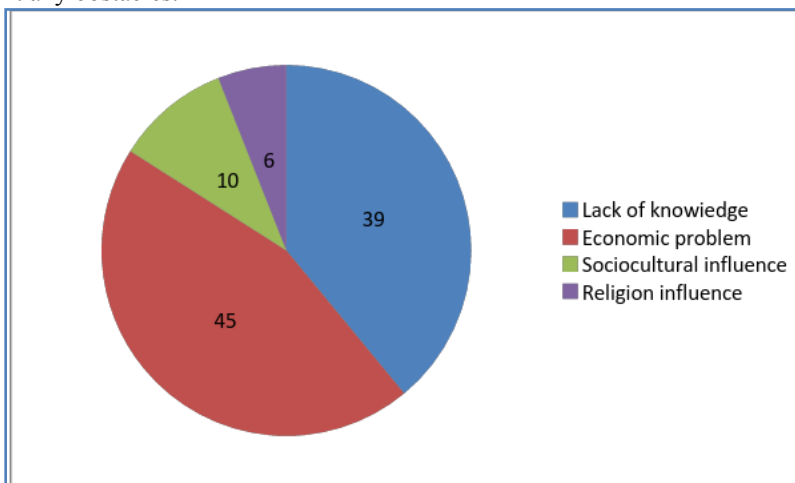


Figure 3: Practice of hypertensive patients who have any obstacle to follow their dietary prescriptions as NMM of hypertension in BGH follow-up clinic





## 7. Discussion

Hypertension is an enormous public health issue, because it is a reversible risk factor for stroke, Ischemic heart disease, congestive heart failure, renal failure and peripheral vascular disease. Studies have shown that cardiovascular disease can be prevented by altering diet and lifestyle and by reducing risk factors such as hypertension. Lifestyle modification is a suitable primary therapy for patients with mild hypertension and is a suitable adjunct to pharmacologic therapy.

According to this study result, 86.14% participants knew foods that are restricted for hypertensive patients. Similarly according to a study in the republic of Seychelles in the Indian Ocean to assess the KAP of hypertensive patients with a total of 1067 respondents, greater than 96% knew foods that are restricted to hypertensive patients. This shows that it is almost similar with our study result [28].

On the other hand from the total of 281 respondents, 44 (15.84%) of them know that hypertensive patients can drink alcohol. Similarly according to study conducted in Dar es Selaam, Mlunde, to assess KAP towards NMM of hypertensive patients, 29.56% people reported that hypertensive patients can drink alcohol [24]. This discrepancy is due to most of our respondents were Muslims, therefore alcohol is religiously restricted and they are informed about the harmful effect of alcohol in hypertension follow-up clinic.

Similarly, out of 281 total respondents, 56% of them know the benefit of stress reduction as NMM of hypertension. According to a cross sectional study conducted in Saudi to assess the Awareness, Attitude and Distribution of high blood pressure among health professionals with a total of 672 participants. 44.1% respondents said that reducing stress is one of NMM for hypertension [23]. This is similar with the study result.

However, out of 281 respondents, 231 (82.18%) of them believe that, it is good to avoid extra added salt in their diet but according to a cross sectional study conducted in the republic of Seychelles in the Indian Ocean to assess the KAP of hypertensive patients with a total of 1067 respondents, >96% belief that avoiding extra salt were associated with NMM of HTN [28]. This difference is due to the small sample size and the sample population is found in developing country.

From the total of 281 respondents, 83 (29.7%) of them smoke cigarette. Similarly according to study conducted in Dare Selaam, Mlunde , to assess KAP towards NMM of hypertensive patients, 9.46% of respondents reported smoking [24]. Also according to a study conducted in Gondar, North West Ethiopia, May 2012, from a total of 679 participants, 53 (2.8%) were smoking cigarette [27]. This difference is may be due to low awareness of our study population.

According to this study, 11.88% use salty diet, but according to community based study conducted in Gondar, North West Ethiopia which reported 21.1 % of respondents have reported excessive use of salt in diet [27]. This shows that, they are unaware about the use of salty diet and due to small sample size.

Out of 281 total respondents, 83 (29.7%) of them perform regular physical exercise, according to a community based cross sectional study is conducted in Mekelle city, Northern Ethiopia with a total of 709 respondents, less than quarter of them (15%) of the respondents reported to do physical exercise. This shows that the respondents have good practice and awareness towards physical exercise [26].

Although, out of 281 total respondents, 56 (19.8%) of respondents drink alcohol. But a study conducted in Northern Ethiopia, Mekelle city, 43.6% of participants of hypertensive patients reported to drink alcohol. This discrepancy is due to the study population are more exposed to substance abuse and lack of information about the effect of alcoholism [26].

## 8. Conclusion

The finding of this study shows that, 45-49 age groups are most dominant. The dominant Ethnic groups are Oromo and most of them follow orthodox religion. The marital status of the population was married. Literate people are much greater than illiterate and Merchants are the dominant ones. The majority of the population gets 401-800 birr per month and most of them live in urban area.

Most of the respondents (86.14%) know foods that are restricted to hypertensive patients and 67.33% of them know foods that are allowed to hypertensive patients.

The majority of the population (84.16%) knows that hypertensive patients should not drink alcohol and smoke cigarette.

Most of them (82.18%) of them believe that, it is good to avoid extra added salt in their diet, 55% of them believe the importance of regular physical exercise in NMM of hypertension and also more than half (64.36%) of them took balanced diet.

The findings in this study suggest that to achieve the ultimate goal of improving health by controlling Hypertension, it is important to understand the current status of patient Knowledge, Attitudes and Practice of patients towards



lifestyle modification as an important factor in controlling hypertension. It is necessary to understand these patient factors in order to develop effective strategies and interventions that enlist the patient as a participant in the management of their health.

### 9. Recommendations

Based on research findings, we recommend BGH hypertension follow-up clinic health professionals

- To upgrade the information towards the NMM of hypertension
- To teach the patients about the NMM of hypertension in understandable way as many patients look to their health professionals for information and guidance.
- To improve their interpersonal communication with patients

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### Acronyms and Abbreviations

AU- Ambo University, CHMS- Collage of Health and Medical science, WHO- World Health Organization, NCDs- Non Communicable Diseases, CVD- Cardio Vascular Disease, CV-Cardio Vascular, NMM- Non-Medical Management, GHO- Global Health Observatory, KAP- Knowledge Attitude and Practice, RBP- Raised Blood Pressure, BP- Blood Pressure, HTN- Hypertension

### References

1. Esayas K, Yadani M, Sahilu A (2013) Prevalence of hypertension and its risk factors in southwest Ethiopia: a hospital-based cross-sectional survey. *Integr Blood Press Control* 6: 111-117.
2. Khan MU, Shah S, Hameed T (2014) Barriers to and determinants of medication adherence among hypertensive patients attended National Health Service Hospital, Sunderland. *J Pharm Bioallied Sci*, 6: 104-108.
3. Vrijens B, Vincze G, Kristanto P, Burnier M (2008) Adherence to prescribed antihypertensive drug treatments: longitudinal study of electronically compiled dosing histories. *BMJ*, 336: 1114-7.
4. Lawes CM, Vander Hoorn S, Rodgers A (2008) International Society of Hypertension. Global burden of blood-pressure-related disease, 2001. *Lancet*, 371: 1513–1518.
5. Habtamu A, Mesfin A, Tadese A (2013) Assessments of adherence to hypertension managements and its influencing factors among hypertensive patients attending black lion hospital chronic follow up unit, Addis Ababa, Ethiopia. *IJPSR*, 4: 1086-1095.
6. Anthony H, Valinsky L, Inbar Z, Gabriel C, Varda S (2012) Perceptions of hypertension treatment among patients with and without diabetes. *BMC Family Practice*, 13: 24.
7. Okwuonu CG, Ojimadu NE, Okaka EI, Akemokwe FM (2014) Patient-related barriers to hypertension control in a Nigerian population. *Int J Gen Med*, 7: 345- 353. 8
8. Appel LJ (2003) Lifestyle Modification as a Means to Prevent and Treat High Blood Pressure. *J Am Soc Nephrol* 14: S99-S102.
9. World Health Organization, non communicable status in world, 2009-2010
10. High blood mission statement, <http://www.realfoodnutrients.com>
11. [www.worldlifeexpectancy.com/ethiopiahypertension](http://www.worldlifeexpectancy.com/ethiopiahypertension)
12. Bentham Science Published Ltd, 2013,
13. World Health Organization, Global Health Observatory,2013
14. Epidemiology of hypertension, supplements to *JAPI*, February 2013, volume 61, 1-20.
15. Hypertension treatment and control, Sub-Saharan Africa, Epidemiological Basis, 2013.
16. World Health Organization, country cooperation strategy, Ethiopia, 2008-2011.



17. Hemant Mahajan, Yasmeen Kazi, Bhuwan Sharman, GD Velhal, *Journal of Dental and Medicine Sciences*, volume 1, (Sep- Oct 2012), pp. 06-14.
18. Dietary sodium intake; KAP in Shandong province, China, 2011. Juan zhang, Ai-qiang Xu, Ji-xiang Ma).
19. Muhammed Bilal, Abdel Haseeb et al (2015); knowledge, attitude and practice of hypertension among cardiac hypertensive patients, vol.8 p 10-11.
20. Mrs Nargis A (2010) self management among patients with hypertension in Bangladesh; p41-42.
21. Abdelrhman E, Abdelraziq et al(2013) Assessment of knowledge, attitude and practice of general public attending of El Shohada primary health care unit Regarding hypertension;vol.2;p16-17.
22. Anzhela Tadevosyan, Mpharm, MPH (2013) Knowledge, attitude and practice of hypertensive people in American university of Armenia; p13-17.
23. Awareness, Attitude and Distribution of high blood pressure among health professionals, Journal Saudi Heart Association, January 2013, Vol 25(1) 19-24
24. KAP towards risk factors for hypertension in Kinondoni Municipality, Dar es Salaam, Mlunde Linda, *MDIV* 2006/2007.
25. Gudina EK, Michael Y, Assegid S, Prevalence of hypertension and its risk factors in southwest Ethiopia: a hospital-based cross-sectional survey, Department of Internal Medicine and Epidemiology, Jimma University, Ethiopia, July 2013, volume 2013:6, p111-117.
26. Assefa B Zikru, Haftu B Gibru, Alemayehu B Kahsay, Prevalence and associated factors of hypertension among adult population in Mekelle city, Northern Ethiopia, Tigray Research Association, Mekelle University Department of Nursing, Ethiopia, 2014, 653-668.
27. Prevalence and Associated Factors of Hypertension among adult in Gondar, North West Ethiopia: Community Cross Sectional Study, Department of Epidemiology and Biostatistics.
28. Assessment of KAP on hypertension in the republic of Seychelles in the Indian Ocean.

## Questionnaire

### Annex

This is a research questionnaire designed to assess the knowledge, attitude and practice of hypertensive patients towards the non medical management of hypertension in Bishoftu General Hospital. Therefore I would like to have your cooperation to answer the following questions. Are you willing to answer our questionnaire? \_\_\_\_\_  
A/yes B/no

Instruction for respondents

- Writing name of respondent is not necessary
- Fill blank space with appropriate word/phrase
- Circle your chosen option and use “ / ” for boxes
- All information collected will be confidential

Respondent code \_\_\_\_\_

### Part I-socio demographic characteristic of respondents

1. Age \_\_\_\_\_ years
2. Sex                                    A) Male----- B) Female-----
3. Ethnicity                            A) Oromo        B) Tigre                            C) Somale        D) Amara        E) Others (specify)
4. Religion                            A) Orthodox    B) Protestant    C) Muslim        D) Catholic    E) others (specify)
5. Marital status                    A) Married    B) Single    C) Divorced    D)Widow
6. Educational status                A) not able to read or write        B) Write and read only    C) Grade 1-8 D) Grade 9-12 E) > Grade 12
7. Occupational                    A) governmental employee    B) Merchant C) Farmer    D) Doing house work at home    E) Student F) Daily laborer    H) Others specify
8. Income per month in birr    A) <400    B) 401-800    C) 801-1200    D) 1201-1600    E) >1600
9. Time of follow up begun in year    A) < 1year        C) 6-10 years    B) 1-5 years        D) 11-15 years        E) >15 years
10. Area of resident    A) Urban B) rural

### Part II- Source of information

1. Have you ever heard the non medical management of hypertension for hypertensive patients?  
A) yes                            B) no
2. If yes to question No. 1 what is the source of information?  
A) health personnel    B) media    C) relatives    D) others specify



3. Is there any information given towards the non medical management of hypertension in your follow up clinic?  
 A) yes B) no
4. If your answer for question no 3 is yes answer the following question.  
 4.1 Do you get information about the non medical management of hypertension at each visit?  
 A) yes B) no
- 4.2 Is the information given in the follow up clinic understandable to you?  
 A) yes B) no

### Part III-knowledge question

1. Do you know foods that are restricted for hypertensive patients?  
 A) yes B) no
2. If your answer for question No. 1 is yes, what are they? \_\_\_\_\_
3. Do you know foods that are allowed to hypertensive patients?  
 A) yes B) no
4. If your answer to question No. 3 is yes? What are they? \_\_\_\_\_
5. Can hypertensive patients drink alcohol and smoke cigarette?  
 A) yes B) no
6. If the answer for question No. 5 is yes, why?  
 A) useful for health B) to stimulate C) relieve stress D) others (specify)
7. If the answer for question for No. 5 is no, why?  
 A) harmful for health B) aggravates health problem C) economic problem D) Other specify
8. Can hypertensive patients use salty diet? A) yes B) no
9. If your answer for question no 8 is yes, why? \_\_\_\_\_
10. If your answer for question no 8 is no, why? \_\_\_\_\_
11. Do you know stress management is one way of non medical management of hypertension?  
 A) yes B) no
12. Do you know physical exercise is important to hypertensive patients for sustainable and stable life?  
 A) yes B) no

### Part IV- Attitude questions

1. Do you believe that it is good to avoid extra added salt in your diet?  
 A) yes B) no
2. Do you believe that excess alcohol intake can worsen the blood pressure level?  
 A) yes B) no
3. Do you believe regular physical exercise is important in the management of hypertension?  
 A) yes B) no
4. Do you believe stress reduction is important in the management of hypertension?  
 A) yes B) no
5. Do you think avoiding smoking cigarette is good for your health?  
 A) yes B) no

### Part V – Practice questions

1. Are you taking balanced diet? A) yes B) no
2. Are you doing regular physical exercise to maintain your weight?  
 A) yes B) no
3. Are you avoiding extra added salty diet in your daily diet? A) yes B) no
4. Do you smoke cigarette? A) yes B) no
5. Do you drink alcohol? A) yes B) no
6. Do you eat high fat containing foods? A) yes B) no
7. If yes to question no 6, what are they? \_\_\_\_\_
8. Do you have any obstacle to follow your dietary prescriptions?  
 A) Yes B) No
9. If your answer for question no 8 is yes, what are they?  
 A) Lack of knowledge B) Economical problem  
 C) Socio cultural influence D) religious influence E. others

