ASSESSMENT OF KNOWLEDGE, ATTITUDE, PRACTICE AND FACTORS ASSOCIATED WITH LIFE STYLE MODIFICATION AMONG HYPERTENSIVE PATIENTS SEEN AT TASH

A Research project submitted to department of Internal medicine, Division of Cardiology, School of Medicine, College of Health Sciences, Addis Ababa University, for the partial fulfillment of internal medicine Specialty Certificate

BY

HENOK BAHRU WODAJENEH, MD

Internal medicine resident

DEC. 08 2021

Addis Ababa, Ethiopia

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Declaration

This is to certify that the thesis entitled "ASSESSMENT OF KNOWLEDGE, ATTITUDE, PRACTICE AND FACTORS ASSOCIATED WITH LIFE STYLE MODIFICATION AMONG HYPERTENSIVE PATIENTS SEEN AT TASH : 2-Month cross sectional study" was carried out by myself and has not been submitted in part or in full for any other degree or any other university.

The thesis comprises only my original work for specialty certificate in Internal medicine. Due acknowledgment has been made in the text to all other materials used.

This thesis is submitted for the qualification of "Specialty in Internal Medicine" complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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ABSTRACT

***Introduction**: Hypertension remains as one of the most important public health challenge worldwide because of the associated morbidity, mortality, and the cost to the society.[1] It became a significant problem in many developing countries experiencing epidemiological transition[2]Patient's knowledge and practice of life style modification play important roles in control hypertension.*

***Objective**: The objective of this study is to assess the Knowledge, Attitude, Practice and factors associated with life style modification among hypertensive patients attending Tikur anbessa specialized hospital outpatient department.*

***Methodology:** Cross sectional study was conducted in Tikur anbessa specialized hospital Renal and Cardiac follow up clinics . A total of 385 patients were planned to be included in this study but 370 hypertensive patient were enrolled in . Data was collected using a consecutive sampling technique during the study period with pretested, structured and interviewer guided questionnaire. Data quality was controlled through supervision of data collectors who were fifth year medical students. Data entry and analysis procedure was done using SPSS version 26 statistical packages. A P-value < 0.05 was considered to be statistically significant in all cases.*

***Results:** .A total of 370 participants were included in this study;53.8% were females with a mean age of 59.93(±12) and 86.2% of the participants have comorbidities. poor knowledge of 40% and poor practice of 35%.among the poor knowledge group females are the majority.*

***Conclusion and recommendation:** This study showed there is still poor level of awareness and practice of life style modification among a representative sample of adult hypertensive.*

So Correct measures need to be taken from the time of diagnosis, especially at clinics where follow up takes place and the level of understanding by patients should be assessed.

***Key words:** Hypertension, Life style modification.*

Table of content

List of Acronyms

AAU	Addis Ababa University
TASH	Tikur Anbessa Specialized Hospital
BP	Blood pressure
CVD	Cardiovascular disease
DASH	Dietary Approaches to Stop Hypertension
DM	Diabetes mellitus
ETB	Ethiopian Birr
GDP	Gross domestic product
HTN	Hypertension
IHD	Ischemic Heart Disease
ICU	Intensive Care Unit
KAP	Knowledge, attitude and practice
NCD	Non-communicable disease
OPD	Outpatient department
SPSS	Statistical Package for Social Sciences
WHO	World Health Organization

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1. INTRODUCTION

1.1. Background Information

Hypertension remains as one of the most important public health challenges worldwide because of the associated morbidity, premature mortality, and the cost to the society. It is risk factor for the top 2 causes of death (IHD & Stroke).The number of adults with hypertension increased from 594 million in 1975 to 1.13 billion in 2015 (1 in 4 men & 1 in 5 women), with increased largely in low and middle income countries. This increase is due mainly to rise in hypertension risk factors in this populations.[2]

It is one of the major but preventable risk factors for cardiovascular (CV) morbidity and mortality resulting from target-organ damage to blood vessels in the heart, brain, kidney, and eyes.[3]

Hypertension is becoming an important issue in low & middle income countries since the prevalence is increasing in this areas. The WHO Africa region has the highest prevalence of hypertension (27%) while WHO region of Americas has lowest prevalence of hypertension (18%).

Although there is shortage of extensive data, overall prevalence of hypertension SBP≥140 &/or DBP≥90 in Ethiopia is 15.6% with no difference by sex [4]

It is possible to prevent the development of hypertension and to lower blood pressure levels by simply adopting a healthy lifestyle. Life style modification is also the first line of anti-hypertension therapy .The recommended lifestyle measures that have been shown to be capable of reducing blood pressure include: weight reduction (particularly in those with abdominal obesity), reduced daily salt intake, regular physical activity, quitting smoking, healthy drinks(moderate consumption of coffee ,tea), moderation of alcohol intake, reducing stress and use of the Dietary Approaches to Stop Hypertension (DASH). DASH diet besides reduced sodium intake, includes regular consumption of fruits, vegetables and low fat dairy products rich with calcium and potassium. [5]

Behavioral risk factors that are assessed in Ethiopia on 2015 showed about 4.2 % participants were smokers (men 7.3%, women 0.4%) of which 82.8% smoked tobacco daily. nearly 41% had consumed alcohol during the past 30 days prior to survey(men 46.6%, women 33.5) .the average number of days per week on which fruit & vegetable consumed was 0.9 & 1.5, respectively. More

than 98% of the population consumed fewer than 5 servings of fruit and vegetables daily. 6% of the study population didn't meet WHO recommendations on physical activity for health(individuals from rural areas were found to be more exposed to physical activity than urban residents). few individuals were overweight or obese (6.3%),with higher prevalence in urban population. [4]

Among modifiable risk factors, place of residence & physical inactivity were significantly associated($P \leq 0.001$) with raised BP(SBP≥140 &/or DBP≥90); while other risk factors like age, every consumed alcohol & adding salt to food were also significantly($P \leq 0.05$) associated & Most of the behavioral risk factors, such as tobacco use, alcohol consumption, khat consumption, were more prevalent among men. However, the biological risk factors, such as obesity, impaired fasting glucose, and raised total cholesterol were more prevalent among women.[4]

1.2. Statement of the Problem

In 2016 the risk of premature mortality from NCD in Ethiopian was 18.3% .The economic costs of NCD are significant & are due to principally to their impact on the non-health sector (reduced work force & productivity), an estimated that NCDs costs at least 31.3 billion birr per year(1.8% of GDP).Together preventive & treatment interventions if fully implemented would prevent more than 1 million premature deaths & gain nearly 4 million additional year of healthy life over 15 years, of which intervention of reduce salt consumption would account for nearly half.[1]

Despite the availability of safe and effective anti-hypertensive 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 it were one of the identified patient related barriers to blood pressure control.[7]

Most of the time, the solution offered to people with high blood pressure is usually to be put on drugs. The prevalence of uncontrolled HTN was high in Ethiopia .this alarming public health issue fuels the even increasing cardiovascular & cerebrovascular diseases.[8910111213141516]

Unless these pharmacological management is supported regularly by non-pharmacological methods (modification of life styles listed above) which actually targets the risk factors for hypertension as well as of other cardiovascular disease, most of the patients requires at least two drugs.

Hypertension substantially prevalent in Ethiopia which calls for the implementation of timely & appropriate strategies for prevention & control of the disease.[1718192021] therefore since there is still a paucity of information this study is intended to assess KAP of life style modification among hypertensive patient attending TASH.

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. Patient's knowledge and practice of life style modification play important roles in the ability to successfully control hypertension. There is scarcity of information on knowledge, attitude and practice of life style modification for management of hypertension in our country; Ethiopia. So such researches are valuable to public health planners, policy makers, and implementer's, to plan and design appropriate intervention strategies on improving KAP of life style modification for prevention and control of Hypertension.

Moreover, the finding will help clinicians to see their patients' status of life style modification for control of hypertension and will be used for further study and interventions for different stakeholders. Therefore, the aim was to assess the of Knowledge, Attitude and Practice Regarding Life Style Modification among Hypertensive Patients Attending TASH OPD, Ethiopia.

2. Review of literature

The overall age-standardized prevalence of hypertension among the 1216 participants in sub-Saharan countries including rural and peri-urban residents in Uganda, school teachers in South Africa and Tanzania, and nurses in Nigeria was 25.9 %. Prevalence was highest among nurses with an age-standardized prevalence (ASP) of 25.8 %, followed by school teachers (ASP = 23.2 %), peri-urban residents (ASP = 20.5 %) and lowest among rural residents (ASP = 8.7 %).Only 50.0 % of participants with hypertension were aware of their raised blood pressure. The overall age-standardized prevalence of pre-hypertension was 21.0 %. Factors found to be associated with hypertension were: population group, older age, higher body mass index, higher fasting plasma glucose level, lower level of education, and tobacco use. [22 23 24 25]

Among patients with hypertension at Kenyatta National Hospital, Kenya: a cross-sectional study showed Ageing was associated with elevated diastolic blood pressure (BP) ($p<0.05$), heart rate (HR) and cholesterol. Females had higher body mass index (BMI).More males reported drinking alcohol and smoking ($p<0.001$), especially the highly educated. Higher BP s were observed in smokers and drinkers ($p<0.05$). Daily vegetables and fruits intake were linked to lower BP, HR and BMI ($p<0.05$). Intake of foods high in saturated fat and cholesterol were associated with raised HR ($p<0.05$).Respondents on anti-hypertensive medication, those engaged in healthy lifestyle and took their prescribed medications had lower mean BP s than those on medication only (138/85 vs 140/90). Few respondents (30.8%) considered hypertension as preventable, mainly the single and highly educated ($p<0.05$).Respondents (53.6%) believed they should stop taking their anti-hypertensive medication once hypertension is controlled.[26]

A total of 351 participants in south western Ethiopia were included in a community based cross sectional study. About 17.7% of the respondents had elevated their Blood pressure. Sex (AOR6.7, 95% CI 2.10-21.53), age(AOR= 2.6, 95% CI.1.07-7.40), and body mass index (BMI),(AOR=2.8, 95% CI. 1.14-6.93 and AOR=8.5, 95%CI.1.68-42.45), and vigorous physical exercise (AOR=3.9, 95% CI.1.40-11.13) were significantly associated with hypertension. [28]

In 2019 at Mizan Tepi University teaching hospital, Fifty seven (33.3%) of patients practiced recommended life style modifications. Age greater than 65 years old, having no source of information, duration of diagnosis of hypertensives, having no formal educations, poor knowledge and negative attitudes were independent predictors of lifestyle modifications. [29]

The knowledge of hypertension among 281 participants at Bishoftu General Hospital was generally poor. More than 95% (n=383; 95.8%) of the study participants showed a poor level of knowledge in the causes, signs and symptoms, risk factors, prevention and treatment of hypertension. Attitudes and perceptions towards the condition were highly negative (98%) among participants and more than half of them (62.2%) were found to have negative attitudes towards exercise although some were engaged in walking, jogging, running and climbing of stairs The following were identified as barriers that countered participants' efforts to maintain healthy life styles; "lack of education", "fear", "financial constraint," and "lack of commitment." Participants' occupation significantly predicted their level of knowledge about hypertension with those who had occupations and worked being more knowledgeable about the condition than those who had no occupation and no regular jobs. [30]

In 2014 a community based cross sectional study is conducted in Mekelle city, Northern Ethiopia with a total of 709 respondents. Among them 43.6% reported to drink alcohol. Less than quarter of them (15%) of the respondents reported to do physical exercise [31]

A study conducted in addis abeba all public hospitals included 404 respondents, 210(52%) was male and mean age was 54±10.77 years. The respondents‟ adherence to lifestyle modifications and anti-hypertensive medications were 23% and 66.8% respectively. The lifestyle and medication related adherence's were found to be better in females, patients who had co- morbidities and have been knowledgeable about the disease and was poor among young adult respondents.[32]

3. Objectives

3.1. General Objectives

To assess the Knowledge, Attitude and Practice Regarding Life Style Modification Among Hypertensive Patients Attending TASH.

3.2. Specific Objectives

- To determine the level of knowledge and attitude regarding life style modification among hypertensive patients attending TASH Renal and Cardiac clinics.
- To identify the practice of hypertensive patients regarding life style modification Among Hypertensive Patients Attending TASH Renal and Cardiac clinics.
- To identify factors associated with life style modification Among Hypertensive Patients Attending TASH Renal and Cardiac clinics.

4. METHODOLOGY

4.1. Study setting

4.1.1. Study area

The study was conducted at Tikur Anbessa specialized hospital which is the main tertiary referral center in Ethiopia located in the capital, Addis Ababa. TASH is one of the leading referral tertiary health facility that provides specialized and comprehensive medical care to the immediate community and beyond who are referred for specialty consultations and/or interventions. The hospital is also a teaching hospital for the Addis Ababa University, College of Medicine and Health sciences and is involved in undergraduate, postgraduate and fellowship training's in different fields of clinical medicine.

4.1.2. Study period

The study was conducted on hypertensive patients having follow-up in cardiac and renal outpatient clinic at Tikur Anbessa specialized hospital (TASH), Addis Ababa University from June 2021 to August 2021.

4.2. Study Design

A cross sectional descriptive study was conducted to describe KAP in patients following at cardiac outpatient clinic, Tikur Anbessa Specialized hospital (TASH), Addis Ababa University.

4.3. Source and Study population

The source population comprises all patients with hypertension attending the cardiac & renal follow up clinics in TASH.

The study population of this study were patients with hypertension attending the cardiac & renal follow up clinics in TASH who are included by consecutive sampling technique during the data collection period.

4.4. Sample size and Sampling technique

There are 3010 registered hypertension patients at TASH cardiac & renal clinic. Among these patients hypertensive patients have regular follow up.

The sample size was calculated by using single proportion formula given below;

The population proportion (p) = 50% was used since there was no research done in the same setting concerning on KAP of patients with HTN on life style modification.

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

$$n = \frac{(1.96)^2(0.5x0.5)}{(0.05)^2} = 384.16 \approx 384$$

n=384

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

$n_f = n_i/1 + n_i/N$

Where

n_i= initial sample size

n_f= new sample size

N= total population=3010(renal side =1802 & cardiac = 1208)

N_f= 350

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

10/100x350=35. Therefore the sample size is approximately 385.

Sampling technique

Consecutive sampling technique was used during the study period to select hypertensive patients to form the sample.Participation was strictly voluntary and patients' concern was orally obtained and confidentially assured prior to partaking in the study.

4.5. Inclusion and exclusion criteria for patients

4.5.1. Inclusion criteria

- ✓ All hypertensive patients more than or equal to 30 years who attend during data collection time and on followup for more than 6 months , at TASH cardiac & renal follow up clinics.
- ✓ Those who can and are willing to respond to our questionnaire.

4.5.2. Exclusion criteria

- ✓ Hypertensive patients who have mental problem
- ✓ Hypertensive patients who are severely ill
- ✓ Hypertensive patients who are on followup for less than 6 months at TASH
- ✓ Hypertensive patients who are not volunteer to respond to the questionnaire will not be included in this study.

4.6. Study Variables

4.6.1. Dependent variables

- ✓ Knowledge
- ✓ Attitude
- ✓ Practice

4.6.2. Independent variables

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

4.7. Operational Definitions

- **Diagnosis of Hypertension :** For this study, HTN diagnosis will be considered when the following criteria full-filled.[5]

  Systolic BP at least 140 mmHg OR Diastolic BP at least 90 mmHg on 2-3 office visits.

- **Lifestyle modification:** Involves altering long-term habits, typically of eating or physical activity and maintaining the new behavior for months or years as per recommended guidelines.[5]

- **Sufficient physical exercise**:≥150 minute moderate intensity activity per week.(i.e walking briskly,bicycling or swimming.)

- **Excess alcohol consumption**: considered fro intake of ≥3 bottles of beer or 3 ounces of liquor for men and ≥2 bottles of beer or 1.5 ounce of liquor for women
- **Healthy diet**:fruit and vegetable intake of ≥3days per week
- **Knowledge about life style modification:** will be assessed using 12 items. Using two level Likert scale, participants who scored greater than or equal to 80% will be considered as having Adequate Knowledge and those who scored below 80% as having intermediate to Poor knowledge about life style modification using bloom's cult-off point.
- **Both Attitude and Practice regarding life style modification:** will be assessed in the same way. Accordingly participants who scored greater than or equal to 80% in both attitude and practice items will be considered as having Positive attitude and Good practice while those who scored below 80% will be considered as having Negative attitude and Poor practice of life style modification respectively using bloom's butt-off point.

4.8. Data collection procedures

4.8.1. Data collection instruments

Data was collected using a pretested, structured and interviewer guided questionnaire adopted from related studies.[29,30,33] The questionnaire was prepared in English and translated in to Amharic & can be translated verbally for other language speakers. During data collection binder, pencil and sharpener, eraser and marker, note book and pen was used.

structured and interviewer guided questionnaire containing 43 items with 5 sections covering the demographic characteristics of patients (10 question), source information(5 question), patients' knowledge on hypertension(12 question), attitudes(6 question) and practice regarding life style modification(10question) was used for data collection.

Patients were invited to participate in the research while they were waiting for turn at follow up clinic. The researchers were contacted with each patient who arrived to clarify the importance of the research for them. .

According to clinic schedule, data was collected from Monday to Friday until sample size is fulfilled, from June 2021 to August 2021.

4.8.2. Data analysis and presentation

Data was analyzed using SPSS version 26 statistical packages. Descriptive measures including frequency, percentage will be used in this study. Binary logistic regression modeling will be employed for inferential data. A P-value < 0.05 will be considered to be statistically significant in all cases.

4.8.3. Data quality assurance

First the questionnaire was prepared in English and translated to Amharic(if needed translation to the patients language as much as possible). A training was given to data collectors on the aim of the research, content of the questionnaire, and how to conduct the data collection process. Investigator was supervised the data collection processes daily during the whole period of data collection. The collected data was checked every day by principal investigator for its completeness and consistency.

4.9. Ethical consideration

The study protocol was submitted for approval to research & ethics committee of department of internal medicine,school of medicine, college of health sciences, Addis Abeba University.

4.10. Dissemination of the results

The results of the study will be presented to the department of Internal Medicine, college of health sciences and will also be presented to those who need the result.

4.11. Limitations of the study

In this study, we encounter the following limitations:

- In this hospital usually patients of low & middle income are on follow up patients with high income are not be represented. .
- It is not possible to exclude possibilities selection bias based on willingness to be interviewed or of response bias based on descendant self report that couldn't be verified by other means.
- The questions for practice were requiring memory this could have caused recall bias.

5. RESULTS

5.1 Socio-demographic characteristics

A total of 370 respondents out of the planned 385 were included in this study ; making the response rate 96 percent. Among these 53.8% were females and the mean age was 59.93(±12) with a range of 30 to 88 yrs.Majority came from urban areas and the level of illiteracy reaching 35.9% of which females account for 73.6%.majority of the patients are retired(37.6%) and married(63.5%),most of the patients have an income of less than 1000 ETB(35.4%).Participants who had follow-up for the past 5 yrs accounting 51.1% and those who had follow-up for more than 5 yrs accounting for 48.1% (Table.1)

5.2 Behavioral risk factors

only 6.5% of participants report alcohol usage above the daily allowed amount,1.6% are smokers and 0.8% chew khat.

5.3 co-morbidity distribution among the participants

The commonest(33.8%) co-morbidity among hypertensive patients in the study were cardiovascular conditions followed by multiple co-morbidity(22.7%), more than 1 condition,and diabetes mellitus(17.8%).(fig.1)

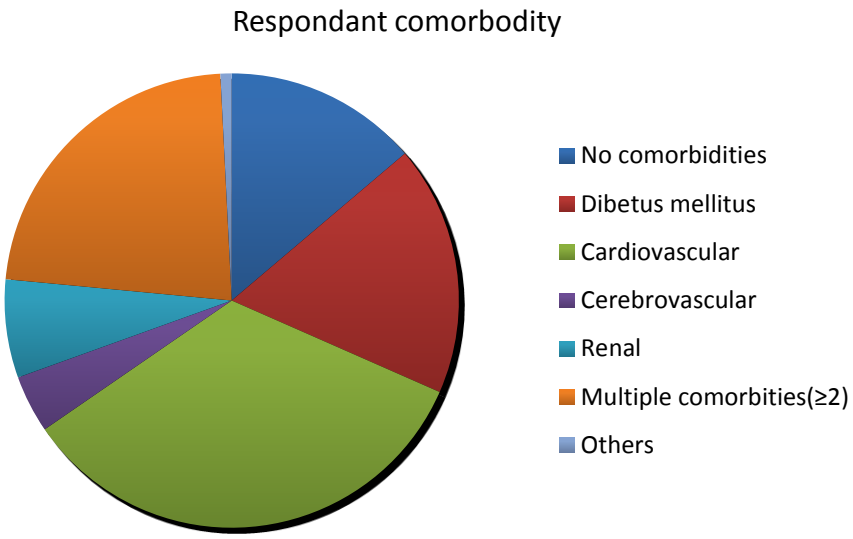

Figure 3. Distribution of co-morbidity among respondents,TASH,A.A,from June 2021 to August 2021.(n=370)

Table 9.Demographic characteristics of respondents,in TASH,A.A,from June 2021 to August 2021.(n=370)

Demographic characteristics of respondents			
Variables	Category	Frequency	Percent
Sex	Male	171	46.2
	Female	199	53.8
Residency	Urban	347	93.8
	Rural	23	6.2
Marital Status	Single	26	7
	Married	235	63.5
	Divorced	75	20.3
	Widow/Widower	34	9.2
Education Level	Illiterate	133	35.9
	Grade 1-8	58	15.7
	Grade 9-12	76	20.5
	Above Grade 12	102	27.6
Occupation	Unemployed	11	3
	Government/Private Employed	95	25.7
	Self Emloyed	38	10.3
	Farmer	8	2.2
	House Wife	73	19.7
	Retired	139	37.6
	Others	6	1.6
Income	No Income	8	2.2
	<1000	131	35.4
	1000-3000	107	28.9
	>3000-5000	68	18.4
	>5000	56	15.1
Duration of follow up	Less Than 5 Yrs	189	51.1
	Above 5yrs	181	48.9
behavioral risks	Excess Alcohol Intake	24	6.5
	Cigarette Smoking	6	1.6
	khat	3	0.8

5.4 SOURCE OF INFORMATION

The Source of knowledge in majority(83.2%) of patients are follow up clinics and most of the patients(79.7%) replied that they were told about life style modification in each clinic visits but only 56.5% understood what has been told to them and only 57% of the patients know there recent blood pressure during the questionnaire.(Table.2)

Table 10.source of information on life style modification among respondents demographic characteristics of respondents,in TASH,A.A,from June 2021 to August 2021.(n=370)

source of information			
		Frequency	Percent
information on each visit	no	75	20.3
	yes	295	79.7
understandable information in clinics	no	161	43.5
	yes	209	56.5
knowledge of current BP	No	159	43
	Yes	211	57

5.5 Knowledge of hypertensive patients towards life style modification

Of the 370 respondents 40% have intermediate to poor knowledge and the remaining 60% have good knowledge.(fig.2).97% of the participants know about salt reduction.But only 62.2% patients knows about benefit of vegetable,fruits,nuts and dairy in there diet,77% about weight reduction and 78.4% about regular physical exercise effect on blood pressure control.(Table.3)

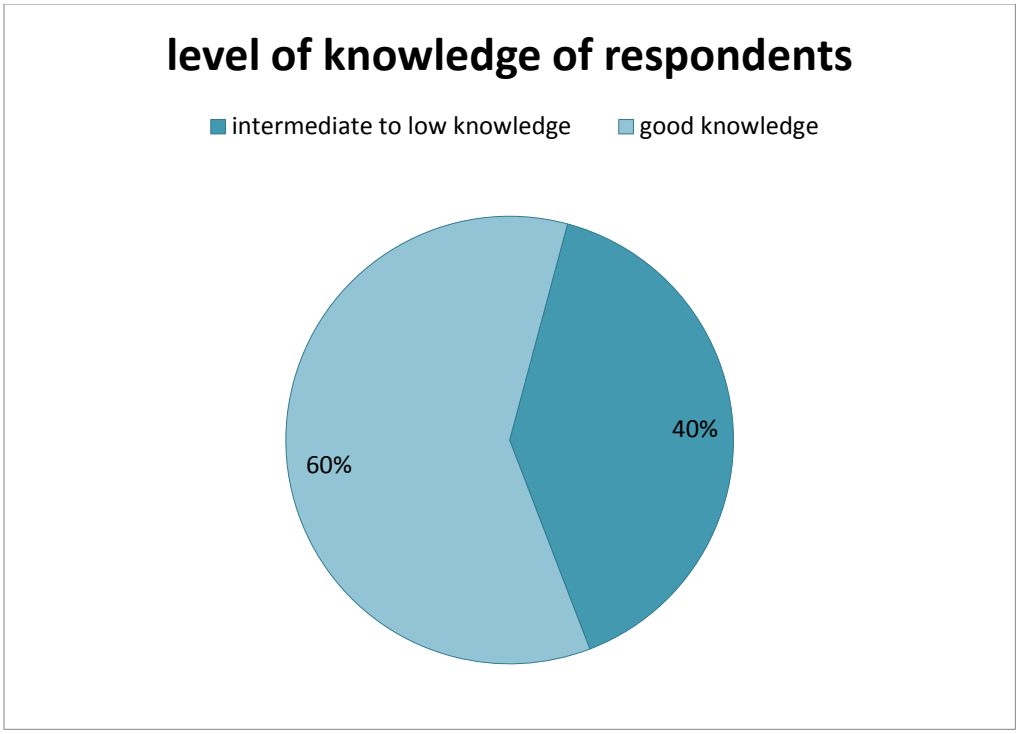

Figure 4.overall knowledge of respondents on life style modification,in TASH,A.A,.demographic characteristic of respondents,in TASH,A.A,from June 2021 to August 2021.(n=370)

Table 11.knowledge of respondents on life style modification Demographic characteristics of respondents,in TASH,A.A,from June 2021 to August 2021.(n=370)

Knowledge of life style modification of participants (correct answer)	frequency	Percent
Do you know foods that are restricted for hypertensive patient	359	97
Mention at least one restricted food	359	97
Do you know foods recommended for hypertensive patient	230	62.2
Mention at least one recommended food	230	62.2
can hypertensive patients take smoke cigarette /excess alcohol	370	100
can hypertensive patient use salty diets	359	97
Do you know weight reduction is one of non medical management of hypertension	285	77
Do you know physical exercise is important to hypertensive patient for stable life	290	78.4

5.5.1 Factors associated with knowledge of participants

Specific socio-demographic characteristics were associated knowledge of life style modification among hypertensive participants (Table.4). Bi variate analyses (chi-square) was conducted to test the associations between socio-demographic data/source of knowledge and knowledge of respondents. five variables; educational status, duration of followup,co-morbidity,information on life style modification on each visit and understandabilty of the information given at clinics showed significant association with knowledge of the participant.

The six variables that were identified as significant predictors of knowledge were further analyzed using binary logistic regression.The results indicated that higher educational status, increased duration of followup and understandability of the information given by health professionals as significant predictors of higher knowledge,even more signifying giving information by it's own may not change the knowledge of patients unless understandability is reassured .

Table 12.Bi variate result for the determinants of hypertensive patients on knowledge of life style modification,in TASH,A.A,from June 2021 to August 2021.(n=370)

socio-demographic and clinical characteristics of respondents associated with fair to poor knowledge								
	un adjusted binary logistic regression				Adjusted logistic regression			
	Sig.	Exp(B)	95% C.I.for EXP(B)		Sig.	Exp(B)	95% C.I.for EXP(B)	
Variables			Lower	Upper			Lower	Upper
low level of education	0.000	3.0051	2.339	3.861	0.000	3.014	2.346	3.873
duration of follow-up	0.000	3.5651	2.075	6.126	0.000	3.6341	2.131	6.199
co-morbidity	0.781	1.0231	0.872	1.2				
information in each visit	0.542	1.2861	0.573	2.887				
understandability of info. during visits	0.010	2.3621	1.23	4.535	0.000	2.6661	1.563	4.548

5.5.4 Level of knowledge in relation to sexual category

Female participants have a lower knowledge of life style modification among the two sex categories on fisher exact test with significance of < 0.001 but did not show any significant association on regression analysis.(fig 3)

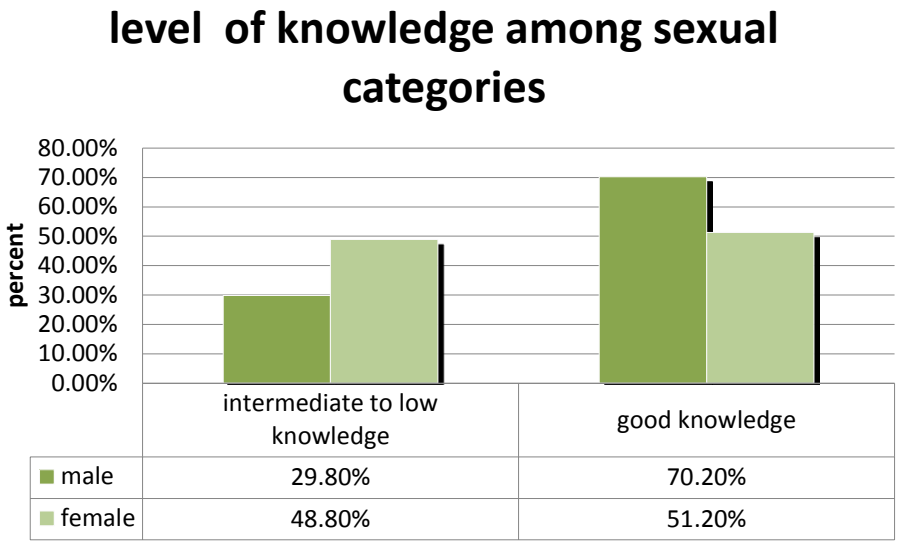

Figure 3.The level of knowledge in relation to duration of followup,in TASH,A.A,from June 2021 to August 2021.(n=370)

5.6 Practice of lifestyle measures by hypertensive patients

Of the 370 participants 35.5% have intermediate to poor practice and the remaining 65.5% have good practice(fig.4).88.1% of the participants claimed to minimize salt from there diet.58.6 tried to decrease weight,78.4% took healthy diet,70.8% are doing regular exercise.(Table.5)

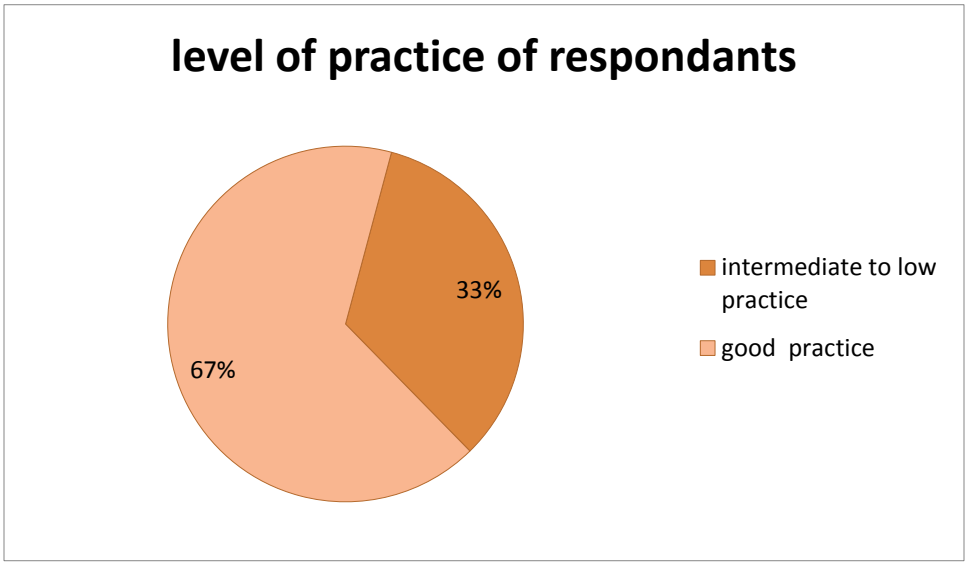

Figure 4.Level of practice of life style modification by respondents,in TASH,A.A,from June 2021 to August 2021.(n=370)

Table 13.practice of life style modification among respondents,in TASH,A.A,from June 2021 to August 2021.(n=370)

practice of life style modification of participants in managing hypertension (correct answer)	total n=370 number	Percent
Are you taking healthy diet	290	78.4
Are you doing regular moderate exercise(150 minute/week)	262	70.8
are you minimizing salty diet from prior times	326	88.1
do you smoke cigarette	364	98.4
Do you drink alcohol	346	93.5
Do you chew khat	367	99.2
Have you tried to decrease weight	217	58.6

5.6.1 Factors associated with practice of participants

Specific socio-demographic characteristics were associated practice of life style modification among hypertensive participants (Table.6). Bi variate analyses (chi-square) was conducted to test the associations between socio-demographic data/source of knowledge and practice of respondents.eight variables; marital status,occupation,income, duration of followup,co-morbidity,information on life style modification on each visit, understandabilty of the information given at clinics and knowledge score of the participant showed significant association with knowledge of the participant.

The eight variables that were identified as significant predictors of knowledge were further analyzed using binary logistic regression.The results indicated duration of followup and knowledge score of the participant were significant predictors of higher practice.

Table 14. Bi variate result for the determinants of hypertensive patients on practice of life style modification,in TASH,A.A,from June 2021 to August 2021.(n=370)

socio-demographic and clinical characteristics of respondents associated with fair to poor practice								
	un adjusted binary logistic regression				Adjusted logistic regression			
	Sig.	Exp(B)	95% C.I.for EXP(B)		Sig.	Exp(B)	95% C.I.for EXP(B)	
variables			Lower	Upper			Lower	Upper
knowledge	0.001	2.748 1	1.553	4.864	0.000	3.377 1	2.089	5.462
duration of follow-up	0.01	0.583 1	0.386	0.881	0.020	0.622 1	0.417	0.927
co-morbidity	0.23	1.088 1	0.948	1.248				
information in each visit	0.126	1.705 1	0.861	3.376				
understandability of info. during visits	0.86	1.055 1	0.584	1.905				
educational status	0.48	1.082	0.869	1.348				

5.6.2 Level of practice according to sexual category

No significant difference in practicing life style modification between the two sexes.(Fig.5)

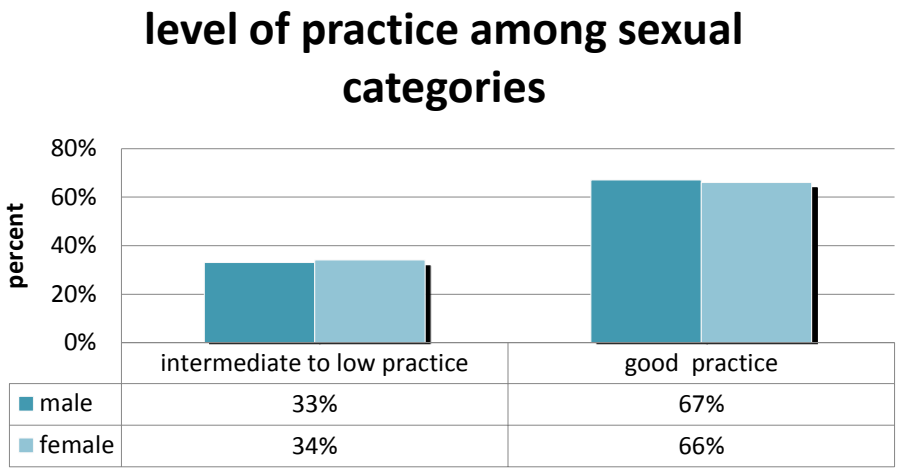

Figure 5..Life style modification practice among male respondents,in TASH,A.A,from June 2021 to August 2021.(n=370)

5.6.3 obstacles restraining patients from good life style modification practice

The commonest obstacle mentioned by the participants in not following a the advocated life style modification is knowledge deficit(43.5%),followed by economical constraints(38.1).(Fig.6)

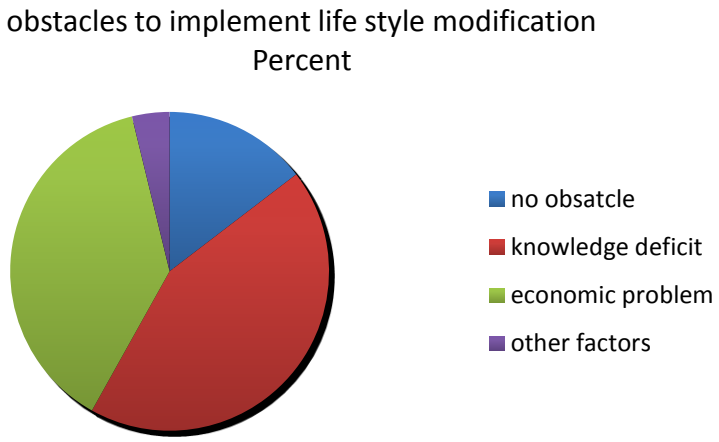

Figure 6.Obstacles restraining from good life style modification,in TASH,A.A,from June 2021 to August 2021.(n=370)

5.7 Correlation between knowledge and practices

Pearson chi-square analysis revealed significant correlation between knowledge score and total practice score (p=0.01). binary logistic regression model was also showed significant association; p value=0.01.This result reaffirms the relationship between knowledge and practice of life style modification .(table 6)

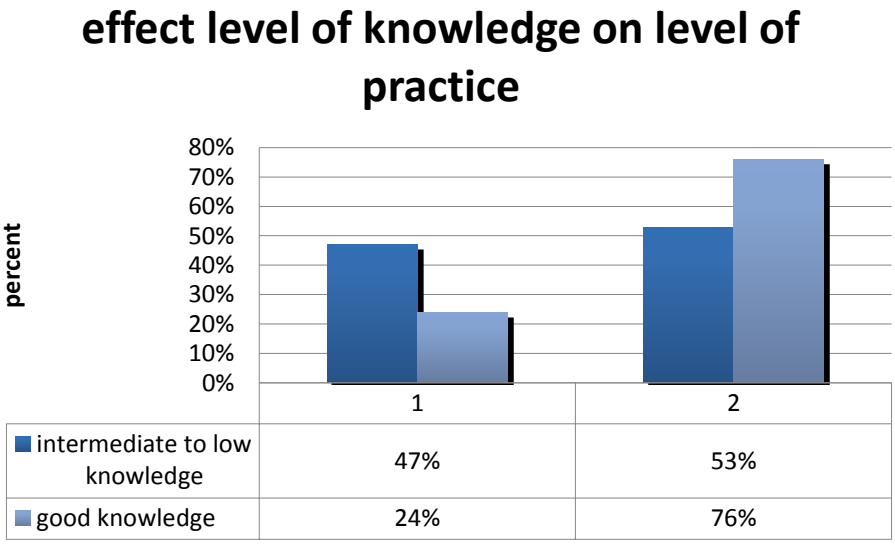

Figure 7.Correlation between knowledge of participants with practice of life style modification ,in TASH,A.A,from June 2021 to August 2021.(n=370)

5.8 Relation between knowledge of recent BP with knowledge & practice score

Patients who have no knowledge of there recent blood pressure upon presenting to followup clinic accounts 43% of the participants and have significant association with poor knowledge and practice.(Fig.13,Table7 and 8)

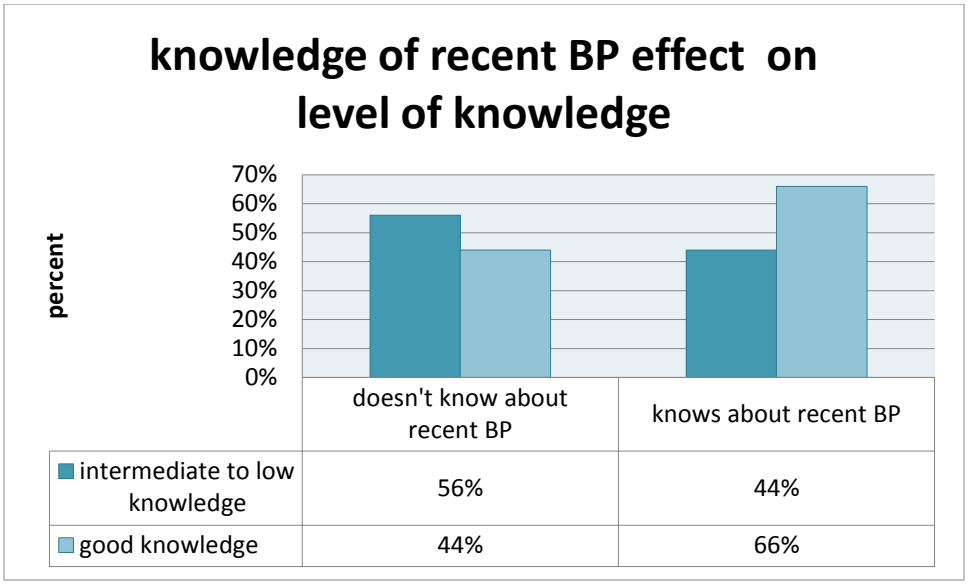

Figure 8.knowledge of recent BP at time of followup,in TASH,A.A,from June 2021 to August 2021.(n=370)

Table 15.Bi variate result for the determinants of hypertensive patients recalling of recent BP on knowledge of life style modification,in TASH,A.A,from June 2021 to August 2021.(n=370)

Logistic regression of knowledge in knowledge of recent BP			
Significance	Exp(B)	95% C.I.for EXP(B)	
		Lower	Upper
.000	2.453	1.601	3.759

Table 16..Bi variate result for the determinants of hypertensive patients recalling recent BP on knowledge of life style modification,in TASH,A.A,from June 2021 to August 2021.(n=370)

Logistic regression of practice in knowledge of recent BP			
Sig.	Exp(B)	95% C.I.for EXP(B)	
		Lower	Upper
.000	3.843	2.439	6.058

5.9 Attitude of respondents towards life style modification

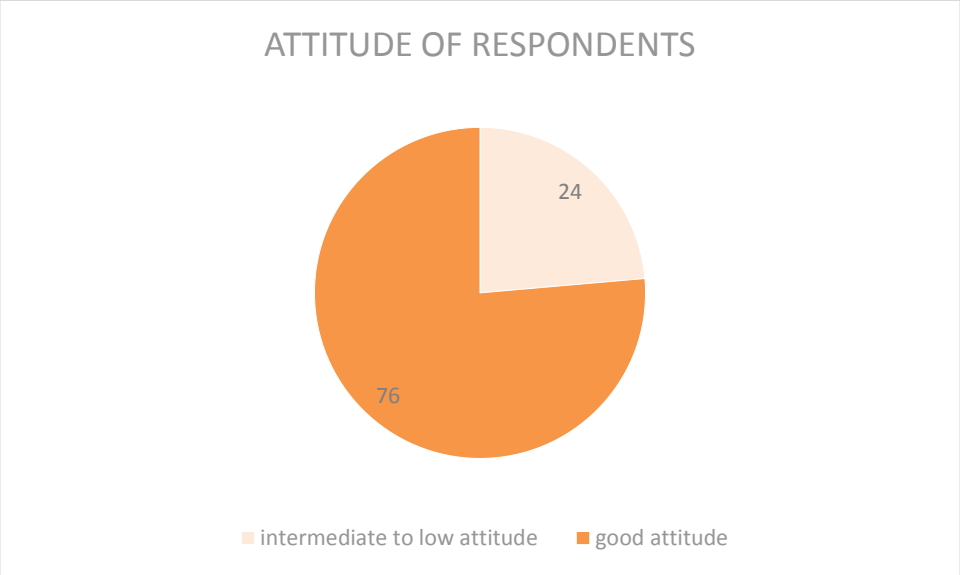

Figure 9.Attitude of respondents toward life style modification,in TASH,A.A,from June 2021 to August 2021.(n=370)

6. Discussion

Hypertension remains as one of the most important public health challenge worldwide because of the associated morbidity, mortality, and the cost to the society.[1] It became a significant problem in many developing countries experiencing epidemiological transition[2].therefore concomitant non pharmacologic management should be advocated to reduce morbidity & mortality in hypertensive patients due to poor blood pressure control.

This cross-sectional study was conducted at TASH to assess current knowledge and practice of hypertensive patients with regard to importance of life style modification in controlling blood pressure.

In this study the percentage of female participants is 53.8%,like that of studies done at Jimma, Bahirdar and bishoftu, with a mean age of 60(±12).63.5% of the participants are married which comparable(67%) with the study done at Bahirdar Felege Hiwot referral hospital but the percentage of retired participants in our study 37.9% which is far more than that has been seen in same study(16%)The degree of illiteracy is 35.9% which is comparable with the study done at Jimma(37.7%),but lower than that of the Bahir dar study(50.4%).income wise our study showed that 35.4% of the participants have an income of less than 1000 ETB. per month which was more or less better than that seen at Bishoftu(60.39) and Bahirdar(41%) studies.the level of co-morbidities in our study was 86.2% with the leading co-morbidity being cardiovascular conditions which was slightly higher than the percentage of co-morbidities seen at the Jimma study(63.9%).

According our study the level of knowledge on salt restriction reaches 97% which was comparable with the Jimma study(95.9%) ,slightly higher than Bahirdar study(91.3%) and significantly higher than the Bishoftu study(77%).The assessment of behavioral risks showed that 100% our participants knows about the restriction of excess alcohol,cigarette smoking and khat chewing which was higher that than the participants included in the Bahirdar(45.8) and Bishoftu(84.16%) studies.

But the knowledge on regular physical exercise(78.4%),healthy diet(62%) and weight loss(77%) is lower in our study even if it is higher than the Bshoftu study where knowledge on physical

exercise was 53.4% ,for healthy diet was 63.3% and the Bahirdar study where the knowledge on physical exercise was 62.8%.

The overall level of good knowledge in our study was 60% unlike that of the Bahirdar study which was 33%.Females have more intermediate to poor knowledge(70.2%) of life style modification among the participants.

When we come to the the level of practice our study showed the overall level of good practice was 65% which was higher that that was showed at Bahirdar study(57.4%).88% of our participants claimed to practice salt reduction which is comparable to the Bahirdar study(90%) and significantly higher that the Bishoftu study(68%).good practice towards behavioral risk factors like alcohol(93.5%),smoking(98.4%) and khat chewing(99.2%) are better than the Bahirdar and Bishoftu studies.But the practice towards healthy diet(78.4%),physical exercise(70.8%) and weight reduction(58.6%) was poor which was comparable with the previously mentioned studies.

7. Conclusion

The finding of this study showed a dominant age group between 50-70 yrs and most of the participants are retired,with 64.1% literacy.an income of below 1000 ETB in majority(35.4%) of the patients and 63.7% of the participants are married.

This study showed there is still poor level of awareness(40%) and practice(35.5%) of life style modification among a representative sample of adult hypertensives. Even though 97% of the participants know about salt restriction and 100% about alcohol and cigarette smoking, significant number of patients have a lack on the importance of weight reduction(23%),regular physical exercise(22%), recommended diets(37.8%).

Although the practice of avoiding behavioral risk factors like khat(0.8%),cigarette smoking(1.6%) and alcohol consumption(6.6%) is encouragable; still salt intake(11.9%) need some improvement; and poor practices like no regular exercise(29.2%),unhealthy diet(21.6%) and no initiative towards weight reduction(41.4%) are observed.

It is necessary to understand such patient factors in order to direct clinical interventions and develop strategies.

8. Recommendation

Correct measures need to be taken from the time of diagnosis, especially at clinics where follow up takes place since they are major source of information regarding lifestyle modification in this study and better outcome from health education is seen when the source information are clinicians in other studies(oyati al orgade).the importance of such management should be emphasized and the level of understanding should be assessed.

Not to forget the government and health policy makers assistance on creating public awareness programs at community level and the media.

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10. APPENDIX

10.1 Consent of respondents

Questionnaire

This is a research questionnaire designed to assess the knowledge, attitude and practice Regarding Life Style Modification among Hypertensive Patients attending TASH. 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_____

የመረጃ ቅፅ እና የተሳታፊዎች ፈቃደኝነት ማረጋገጫ

ጤና ይስጥልኝ, ዶ/ር ሄኖክ ባህሩ እባላለሁ፡፡በጥቁር አንበሳ ሆስፒታል ውስጥየልብና ኩላሊት ተመላላሽ ክፍል ክትትል በሚያደርጉ የደም ግፊት ህመምተኞች መካከል የአኗኗር ለውጥን በተመለከተ የእውቀት ፣ የአመለካከት እና ልምድ ሁኔታን በማጥናት ላይ ነኝ፡፡

እርሶም በዚህ ጥናት ለመሳተፍ ከተስማሙ ስለእርስዎና ስለ ተያያዥ ጉዳዮች መሰረታዊ የሆኑ ጥያቄዎችን ይጠየቃሉ፡፡ መጠይቁም ከ 15 እስከ 20 ደቂቃ ብቻ የሚፈጅ ሲሆን የእርሶ ትክክለኛ ምላሽ ለጥናቱ ትልቅ አስተዋ እንዳለው እናሳውቃለን፡፡ በዚህ ጥናት ላይ የተሳታፊው ማንነት የማይገለፅ ሲሆን የሚሰጠው መረጃም ምስጢርነቱ የተጠበቀ ነው፡፡ በጥናቱ ላይ ለመሳተፍ ፍቃደኛ መሆኖትን ያረጋግጡልን፡፡

ፍቃደኛ ነኝ - ----------

ፍቃደኛ አይደለሁም ----------

መረጃ ሰብሳቢ:- ስም----------

ፊርማ----------

በጥናቱ ላይ ተጨማሪ ማብራሪያ ካስፈለገዎት ከዚህ በታች ባለው በተጠቀሰው የጥናቱን ዋና ተመራማሪ አድራሻ ማብራሪያ ማግኘት ይችላሉ፡፡

ስለተሳትፎ እናመሰግናለን፡፡

10.2 questionnaire

Part I-socio demographic characteristic of respondents

1. Age: _____years

2. Sex : A) Male B) Female

3. Religion:

A) Orthodox B) Protestant C) Muslim D) others (specify_____)

4. Marital status:

A) Married B) Single C) Divorced
D) Widow

5. Educational status:

A) Cannot able to read or write

B) Grade 1-8

C) Grade 9-12

D) > Grade 12

6. Occupation:

A) Governmental/private company employee

B) self employed

C) Farmer

D) house wife

E) Daily laborer

F) Others (specify)_____

7. Income per month in birr:

ሀ . <1000 ለ 1000-3000 ሐ. 3000-5000 መ. >5000

8. Duration of follow up begun in year:

A) < 5 years B)≥5 years

9. Area of resident:

A) Urban B) rural

10.Do you have any known co-morbidities ?

A)Diabetes mellitus B)Cardiac condition C)Stroke D)Renal condition E)≥2conditions F) none

Part II- Source of information

1. Have you ever heard about Life Style Modification in management of hypertension?

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 to you regarding Life Style Modification in management of hypertension at 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 regarding Life Style Modification in 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

5. Do you know the current status your blood pressure control?

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 reducing weight 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 think blood pressure can be decreased with life style modification?

A) Yes B) No

2. Do you believe that it is good to avoid extra added salt in your diet?

A) yes B) no

3. Do you believe that excess alcohol intake can worsen the blood pressure level?

A) yes B) no

4. Do you believe regular physical exercise is important in the management of hypertension?

A) yes B) no

5. Do you believe weight reduction is important in the management of hypertension?

A) yes B) no

6. Do you think avoiding cigarette smoking is good for your health?

A) yes B) no

Part V – Practice questions

1. Are you taking healthy 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

8. Do you try to reduce weight ?

A) Yes B) No

9. Do you have any obstacle to follow your dietary prescriptions?

A) Yes B) No

10. If your answer for question no 9 is yes, what are they?_____

A) Lack of knowledge

B) Economical problem

C) Socio cultural influence

D) Religious influence

E. others (specify_____)

a. **<u>የጥናቱ ተሳታፊ አጠቃላይ ሁኔታ</u>**

1. እድሜ---------- አመት
2. ፆታ

   ሀ.ወንድ ለ. ሴት
3. ሀይማኖት

   ሀ.ኦርቶዶክስ ለ. ኘሮቴስታንት ሐ. ሙስሊም መ. ሌላ (--------)
4. የትዳር ሁኔታ

   ሀ. ያገባ ለ. ያለገባ ሐ. የተፋታ መ. የሞተበት
5. የትምህርት ደረጃ

   ሀ. ማንበብ እና መፃፍ የማይቸል ለ. ከ1-8 ሐ.ከ 9-12 መ.›12
6. የስራ ሁኔታ

   ሀ. የመንግስት/የግል ለተቀጣሪ ለ. የግል ስራ ሐ. ገበሬ መ የቤት እመቤት ሠ. የቀን ሰራተኛ

   ረ. ስራ የሌለው ሰ.ሌላ
7. የወር ገቢ

   ሀ. <1000 ለ 1000-3000 ሐ. 3000-5000 መ. >5000
8. ክትትል የጀመርቡት ጊዜ

   ሀ. ‹5 ዓመት ለ. >5ዓመት
9. የመኖሪያ አካባቢ

   ሀ. ከተማ ለ ገጠር

10. ያለቦት ተጓዳኝየጤና ችግር ?

    ሀ. የስኳር በሽታ ለ. የልብ በሽታ ሐ. የስትሮክ በሽታ

    መ . የኩላሊት በሽታ ሠ.>2 ህመም ረ. የለም

b. **<u>የመረጃ ምንጭ</u>**

1. የደም ግፊት ታካሚዎች ሊኖራቸዉ ስለሚገባ የአኗኗር ዘዴ ማስተካከያ መንገዶች ሰምተዉ ያዉቃሉ?

   ሀ. አዎ ለ. አላዉቅም
2. የተራ ቁጥር 1 ምላሽ አዎ ከሆነ መረጃዉን ከየት አገኙ?

   ሀ. ከጤና ባለሞያ ለ. ከመገናኛ ብዙሃን ሐ. ከዘመድ መ. ከሌላ

3. የደም ግፊት ህክምና ክትትል በሚያደርጉበት የህክምና ቦታ ሊኖርዎት ስለሚገባ የአኗኗር ዘዴ ማስተካከያ መንገዶች መረጃ አግኝተዉ ያዉቃሉ ?

   ሀ. አዎ ለ. አላዉቅም

4. ለተራ ቁጥር 3 ምላሽዎ አዎ ከሆነ መረጃዉን ለህክምና ክትትል በሄዱበት ጊዜ ሁሉ ያገኛሉ ?

   ሀ. አዎ ለ. አላገኝም

5. አሁን ላይ ያለዎትን የደም ግፊት መጠን ያዉቁታል?

   ሀ. አዎ ለ. አላዉቅም

c. <u>የእውቀት መመዘኛ ጥያቄ</u>

1.የግፊት ታማሚዎ የማይመገቡት ምግቦችን ያውቃሉ ?

ሀ. አዎ ለ. አላዉቅም

2.የተራ ቁጥር 1 ጥያቄ ምላሽ አዎ ከሆነ ዘርዝሩአቸው

3.የግፊት ታማሚዎ የሚመገቡትን ምግብ ያውቃሉ ?

ሀ. አዎ ለ. አላውቅም

4.የተራ ቁጥር 3 ጥያቄ ምላሽ አዎ ከሆነ ዘርዝሩአቸው

5.የግፊት ታማሚ አልኮል እና ሲገጋራ መጠቀም ይችላል ?

ሀ. አዎ ለ. አይችልም

6.በተራ ቁጥር 5 የተገለፀው አዎ ከሆነ መልሶት ለምን ?

ሀ. ለጤና ጠቃሚ ነው ለ. ያነቃቃል ሐ. ከጭንቀት ያላቅቃል መ. ሌላ

7.የተራ ቁጠር 5 ምላሽ አይችልም ከሆነ ለምን ?

ሀ. ለጤና ይጎዳል ለ. በሽታን ያባብሳል ሐ. ገቢን ይጎዳል መ. ከሌላ

8.የግፊት ታማሚ ጨው ያለው ምግብ መጠቀም ይችላል ?

ሀ. አዎ ለ. አይችልም

9.የተራ ቁጥር 8 ምላሽ አዎ ከሆነ ለምን ?

10.ተራ ቁጥር 8 ምላሽ አይችልም ከሆነ ለምን ?

11.ክብደት መቀነስ የግፊትን የህክመና ዘዴ መሆኑን ያውቃሉ?

ሀ. አዎ ለ. አላውቅም

12.የአካል ብቃት እንቅስቃሴ ለግፊት ጠቃሚ መሆኑን ያውቀሉ ?

ሀ. አዎ ለ. አላውቅም

d. <u>አመለካከት መመዘኛ</u>

1 የግፊትን በሽታ ያኗናር ዘዴዎች በማስተካከለ መቆጣጠር እንደሚቻል ያውቀሉ ?

ሀ. አዎ ለ. አላዉቅም

2 ተጨማሪ ጨው ምግብ ውስጥ ያለመጨመር ጠቃሚ ነው ብለው ያስባሉ ?

ሀ. አዎ ለ. አላሰበም

3 አብዝቶ አልኮል መጠቀም ግፊትን ያባብሰዋል ብለው ያስበሉ ?

ሀ. አዎ ለ. አያባብስም

4 አካል ብቃት እንቅስቀሴ ማድረግ ግፊትን ይስተካክላል ብለው ያስበሉ ?

ሀ. አዎ ለ. አያስተካክልም

5 ክብደትን መቀነስ የግፊት ህመመን ያስተካክላል ብለው ያስበሉ ?

ሀ አዎ ለ. አያሳተካክልም

6 ሲጋራ ማጨስ ለጤና ጠቃሚ ነው ብለው ያስባሉ ?

ሀ. አዎ ለ. አይደለም

e. <u>የልምድ ጥያቄ</u>

1 በሳምንት ሶስት ጊዜ አታክልትና ፍራፍሬ ይመገባሉ ?

ሀ.አዎ ለ.አልመገብም

2 በሳምንት ለ 150 ደቂቃ የአካል ብቃት እንቅስቃሴ ያደርጋሉ?(በጠያቂዉየሚብራራ)

ሀ. አዎ ለ. አላደረገም

3 ተጨማሪ ጨው በምግብ ውሰጥ ከመጠቀም ይቆጠባሉ ?

ሀ. አዎ ለ. አይደለም

4 ሲጋራ ያጨሳሉ ?

ሀ. አዎ ለ. አላጨስም

5 አልኮል ነክ መጠጦችን ይተቀመሉ ?

ሀ፣ አዎ ለ. አልጠቀምም

6 5ኛ ላይ ያለው ጥያቄ አዎ ከሆነ በቀን ምን ያህል ?

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7 ጫት ይቅማሉ ?

ሀ አዎ ለ አልቅምም

8 ተመጣጣኝ ክብደት እዲኖሮት ይሞክራሉ

. አዎ ለ. አልሞከረም

9 ለግፊት ታማሚዎች የሚመከሩ የአኗኗር ዜዲዋች እዳይተገብሩ የሚያግዶት ነገር አለ ?

ሀ. አዎ ለ. የለም

10 የተራ ቁጥር 9 ምላሽ አዎ ከሆነ

ሀ. የእውቀት ማነስ ለ. የኢኮኖሚ ችግር ሐ. የማህበረሰብ ተፅኖ መ የሀይማኖት ሠ . ለሎችም