

KNOWLEDGE AND ATTITUDE OF HYPERTENSIVE PATIENTS TOWARDS DIETARY MANAGEMENT AT ENTEBBE REGIONAL REFERRAL HOSPITAL IN WAKISO DISTRICT. A CROSS-SECTIONAL STUDY.

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Abstract.

Background.

Hypertension is one of the most crucial health problems and chronic diseases in developed and underdeveloped countries, which is further expanded due to ignorance and lack of knowledge. The study assessed the knowledge and attitude of hypertensive patients towards dietary management at Entebbe Regional Referral Hospital in the Wakiso district.

Methodology.

A cross-sectional study design was used, employing a quantitative approach to collect data using a semi-structured questionnaire from 36 participants. The information was manually tallied; thereafter, Microsoft Word and Excel programs were employed, followed by presentation in the form of frequency tables, graphs, and figures like pie charts and bar graphs.

Results.

Most respondents were in the age range of above 50 years (47.2%), (44.4%) had attained secondary education, (61.1%) had good knowledge, 20 (55.6%) of the respondents were not familiar with salt content in common foods, 32 (88.9%) knew the foodstuffs restricted in hypertension, (47.2%) knew that reducing salt intake can help manage hypertension, (94.4%) agreed that consuming a diet rich in fruits vegetables whole grains and proteins positively impact blood pressure. 30(83.3%) participants had a positive attitude towards adding fruits and vegetables to their diet, and 21 (58.3%) respondents strongly agreed that physical exercises have an impact on blood pressure.

Conclusion.

The majority of the participants had good knowledge regarding the relevant dietary approaches needed to stop hypertension. A significant number of the respondents had a positive attitude toward the dietary modifications for proper hypertension control.

Recommendations.

The Ministry of Health and other responsible bodies should strive to increase the awareness and knowledge of hypertensive patients about the importance of consultation and seeking medical services.

Keywords: Hypertensive patients, Dietary management, Knowledge and attitude, Entebbe Regional Referral Hospital.

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Background.

Hypertension (HTN) is defined as office systolic BP (SBP) values ≥ 140 mmHg and/or diastolic BP (DBP) values ≥ 90 mmHg, diagnosed by a validated auscultatory or oscillometric semiautomatic or automatic sphygmomanometer in the OPD offices (Williams, 2018). Blood pressure (BP) is the force exerted by circulating blood against the walls of the body's arteries, the major blood vessels in the body. Hypertension is when blood pressure is too high (WHO, 2020), with a level of blood pressure greater than 140/90mmHg in adults aged 18 years or more (Asemu,

2021). It is commonly termed the silent killer. Hypertension dwindled welfare by causing high mortality and morbidity as well as through its negative health impact in terms of disability, decreased quality of life, and mortality associated with stroke and cardiovascular diseases (CVDs) (Amini, 2021). Lifestyle modification in HTN is also known as non-pharmacological therapy. It is the cornerstone of helping hypertensive patients to attain healthy lifestyle behaviors (Mahmood, 2018).

In Europe, the common dictating factors for the occurrence or exacerbation of HTN were behavioral risk factors such as the consumption of food containing too much salt and fat,

eating insufficient fruit and vegetables, harmful levels of alcohol intake, lack of exercise, and poor stress management (Williams, 2018). In a study conducted in the southeast, the burden of HTN was felt disproportionately in low- and middle-income countries, where two-thirds of cases were found largely due to increased risk factors in those populations in recent decades (Azamawati, 2021). Unluckily, around 50% of all deaths or disability due to complications of HBP occur among a population with BP <140/90 mmHg, which makes the clinical approach to BP only address a tiny fraction of hypertension within countries (Oparil, 2019). Many clinical guidelines for HTN management from reputable sources indicate that rapidly stopping smoking reduces the risk of HBP (Flack, 2020).

In Kenya, 67.7% were knowledgeable about lifestyle modification; participants perceived that the consequences of HTN are preventable. A significant number of the sampled patients' new lifestyle modifications could be able to control hypertension (Samuel, 2019). In a certain study, a highly significant proportion of the participants thought that performing regular exercises could reduce the level of HBP. A higher proportion of the patients believed that stress could affect HBP and that managing stress improves HTN (Taye, 2020). In a study conducted in Tanzania, regular exercise and stress management were the main components practiced poorly, whereas salt intake reduction, use of fruits and vegetables, and moderate alcohol consumption were the components practiced well in relative terms (Prabhakar, 2021).

In Uganda, only 17.7% had good knowledge of cardiovascular disease prevention. Most respondents (68%) were knowledgeable about foods high in calories, 66.1% low fruit and vegetable intake, and (68.2%) high salt consumption as cardiovascular disease risk factors (Ndejjo, 2020). Hypertension and other non-communicable diseases caused 33% of all mortality in Uganda, but only 8% of persons with hypertension were aware of their diagnosis, and 3.6% achieved blood pressure control. A diet of simple carbohydrates and fats and increasing use of alcohol and tobacco were key contributors (Kwarisiima, 2019). The study assessed the knowledge and attitude of hypertensive patients towards dietary management at Entebbe Regional Referral Hospital in the Wakiso district.

Methodology.

Study design and rationale.

This study employed a quantitative method of inquiry using a descriptive cross-sectional survey design to assess the knowledge and attitude of hypertensive patients towards dietary management in Entebbe Regional Referral Hospital in the Wakiso district. A cross-sectional design saved time and resources for the researcher as well as obtaining information in different contexts at the same time during the study. The quantitative method was appropriate in obtaining quantifiable data regarding dietary knowledge, attitudes,

and practices among hypertensive patients in Entebbe Regional Referral Hospital in the Wakiso district.

Study setting and rationale.

The study was conducted among selected hypertensive patients attending Entebbe Regional Referral Hospital in the Wakiso district. It is located in the central region of Uganda in the central business district of Entebbe town, Wakiso district, 35 km southwest of Mulago National Referral Hospital and Kampala city along the shores of Lake Victoria, latitude of 0.0726°N, 32.4842°E, and approximately 44km by road. It is a public hospital funded by the Ministry of Health but originally built by the British colonialists in the 20th century with a 200-bed capacity and 181 staff members. The hospital offers services in pediatrics, radiology, laboratory, outpatient department, maternity, immunization, general surgery, internal medicine, orthopedics, obstetrics and gynecology, HIV/AIDS counseling and treatment, and psychiatric, among others.

Study population.

The study population consisted of hypertensive patients above 18 years old attending Entebbe Regional Referral Hospital in the Wakiso district.

Sample size determination

The sample size was 36 and was determined using the Yamane formula by Taro Yamane 1967 as follows;

$n = N / (1 + Ne^2)$ Where n = sample size

N = population size (40) patients in two days e = Desired level of precision (0.05)

$n = 40 / (1 + 40 * 0.05^2)$ $n = 40 / 1.1$

$n = 36$

Therefore, the study employed 36 participants.

Sampling procedure

In selecting the participants, the researcher used purposive sampling where the sample represented others based on the grounds of having been diagnosed with hypertension.

Inclusion criteria

All willing hypertensive patients above 18 years who attended Entebbe Regional Referral Hospital in the Wakiso district. Patients who consented.

Independent variables

Knowledge, attitude, and practices of hypertensive patients. Knowledge: The act of knowing something with familiarity gained through experience or association.

Attitude: A predisposition or tendency to respond positively or negatively towards certain ideas.

Dependent variable

Dietary management measures. Dietary management measures: The term related to diet and the rules of diet. Hypertensive: a patient suffering from hypertension as a disease. Patient: A person who is receiving medical care or who is cared for by a particular person.

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Research instruments.

A well-structured, researcher-administered questionnaire consisting of open questions was used as a tool for gathering information. The questionnaire was divided into four sections: demographic information, knowledge, attitude, and practices. The questionnaire was pretested at Kajjansi Health Center IV to check its validity.

Data collection procedure.

An introductory letter from the school was received and approved by the Hospital administration. The researcher visited the hospital and presented the letter to the hypertensive clinic in charge, who, in turn, introduced herself to the participants. Those who agreed to participate were briefed and asked to provide written consent by signing or fingerprinting the consent form. After obtaining written consent, the researcher filled in the questionnaire's serial number and the date of the interview. The participants were requested to listen and answer the questions from the first up to the last as the researcher filled the questionnaire. The data collection process proceeded until 36 participants were covered. Upon completion, the questionnaires were checked for completeness before leaving the study site and were kept by the researcher.

Data management.

The questionnaires were kept under lock and key, and only the researcher had access to them.

Data analysis.

Classification of age of patients.

Age group (years)	No. of patients	Percentage (%)
18-28	2	5.6
29-39	7	19.4
40-50	10	27.8
Above 50	17	47.2

Table 1: shows that, out of 36 participants who were enrolled in the study, 2 (5.6%) were of age group 18-28 years, 7(19.4%) were of age group 29-39 years, 10 (27.8%) were of age group 40-50 years and 17 (47.2%) were of above 50 years.

The collected data was summarized on paper using a pen, tallied, analyzed using the Microsoft Excel program, and then presented in the form of tables, pie charts, and graphs.

Limitations of the study.

The study was conducted during working hours; therefore, this limited the time of interaction with patients.

Being a student, the researcher had limited resources to support the study, so a budget was drawn to guide the expenditure and work within the budget and in the stated period.

Ethical approval.

Permission was sought from the school administration, which provided an introductory letter upon submission and approval of the research proposal. The letter was then presented to the Entebbe Regional Referral Hospital administration, which provided an approval letter allowing research data collection within the hospital premises. The researcher then introduced herself and sought consent from the participants, informing them of their rights during the process, including confidentiality and withdrawal from the exercise at any time.

Informed consent.

Consent was obtained from the respondents. Respondents' contact identities were kept anonymous throughout the study to ensure that the researcher used codes to identify the respondents but not their names. Furthermore, no one else except the researcher had access to the completed research instruments for confidentiality.

Results

Socio-demographic characteristics of the study population

Figure 1: Distribution of respondents according to level of education (n=36)

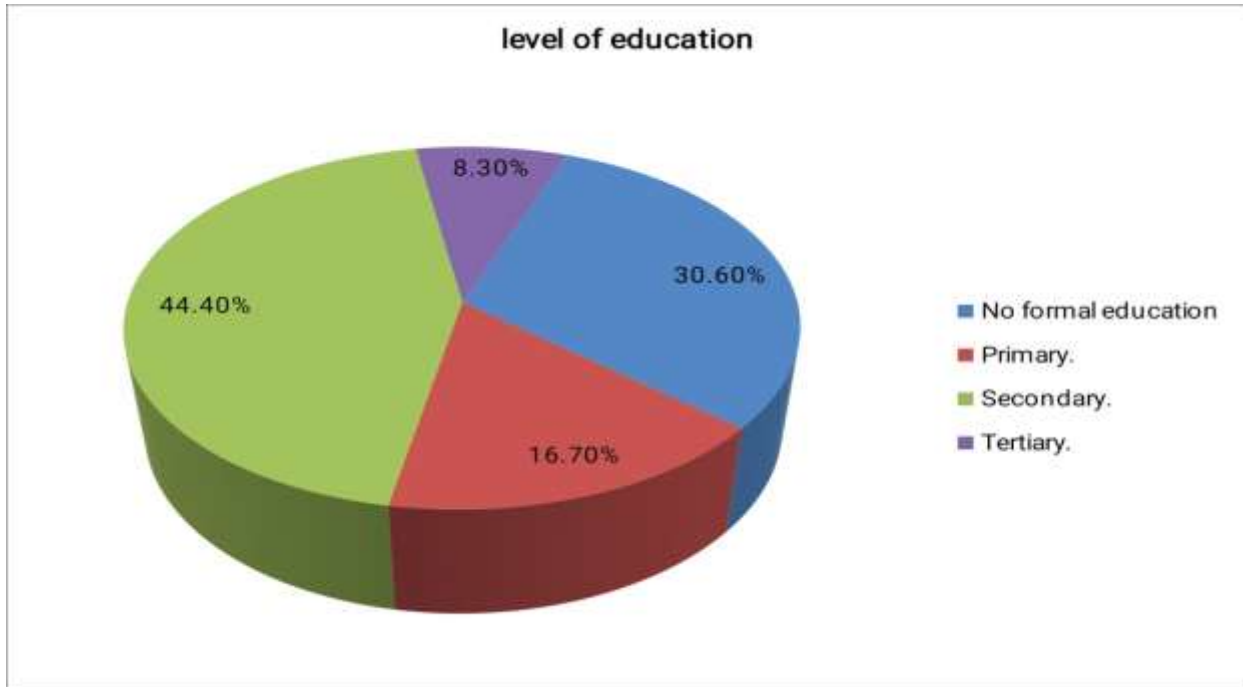


Figure 1: shows that, out of 36 participants, 11 (30.6%) had never attained any formal education, 6 (16.7%) had attained primary education, 16 (44.4%) had achieved a secondary level of education, and 3 (8.3%) had done tertiary education

Figure 2: Distribution of respondents according to marital status (n=36)



Figure 2 shows that, out of 36 respondents, 28 (77.8%) were married, 4 (11.1%) were widowed, 3 (8.3%) were divorced, and 1 (2.8%) was single.

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Figure 3: Distribution of respondents according to whether they knew that dietary modifications are recommended (n=36).

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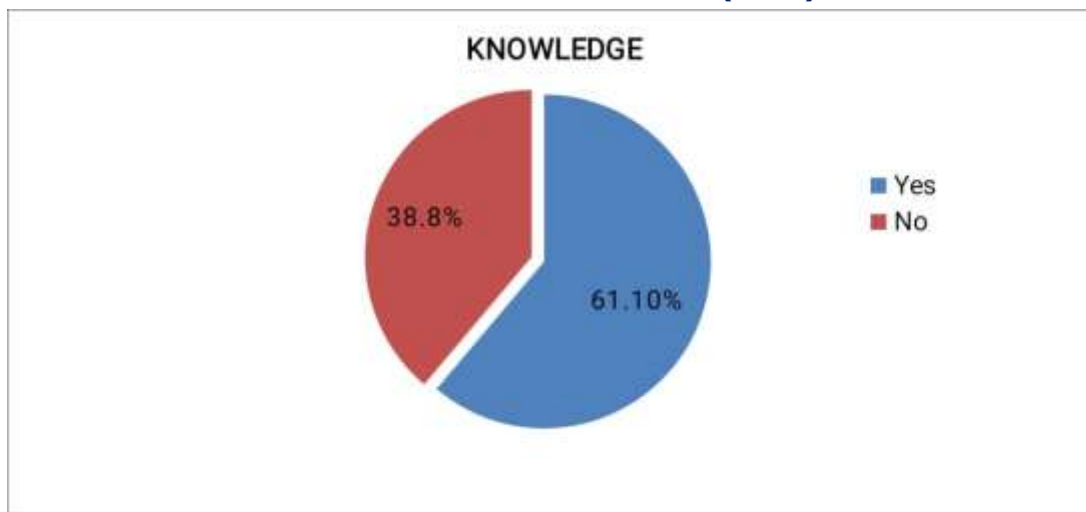
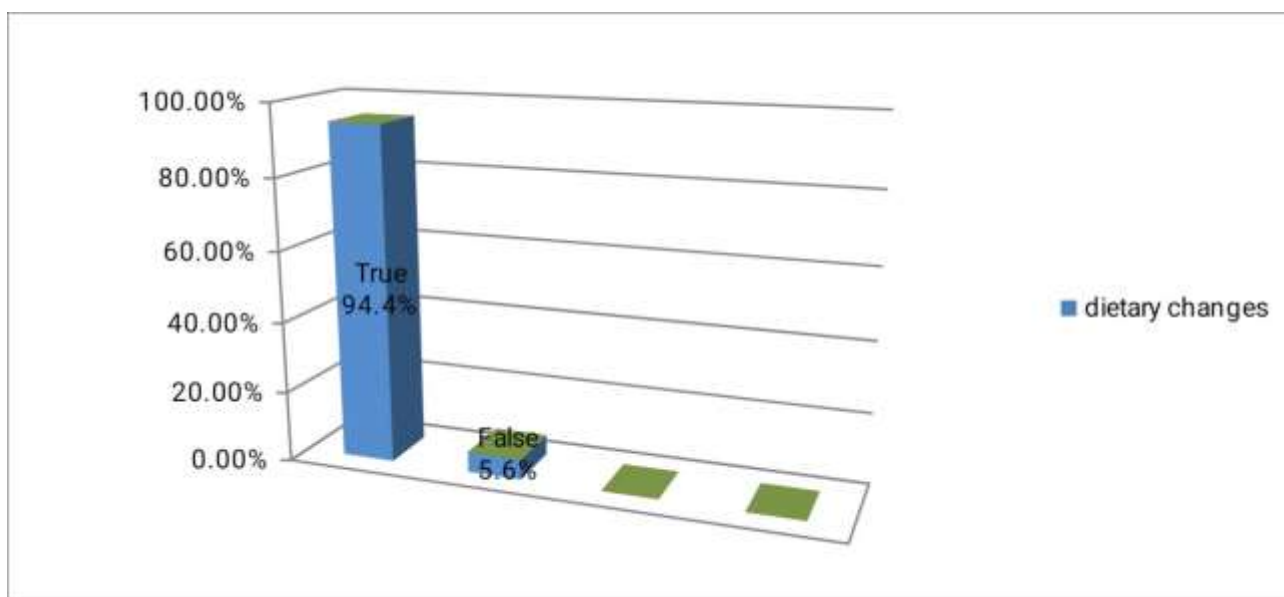


Figure 3: Revealed that 22(61.1%) respondents knew that dietary modifications are recommended even when taking blood pressure-lowering medications and 14(38.9%) did not know that dietary modifications are recommended even when taking blood pressure-lowering medications

Figure 4: Distribution of respondents according to whether dietary changes can positively impact blood pressure (n=36)



impact blood pressure (n=36)

Figure 4: shows that, out of 36 participants, 34 (94.4%) responded true whereas 2 (5.6%) replied false that consuming a diet rich in fruits, vegetables, whole grains, and proteins (dietary changes) can positively impact blood pressure.

Figure 5: Distribution of respondents according to how familiar they were with the salt content in common foods (n=36).

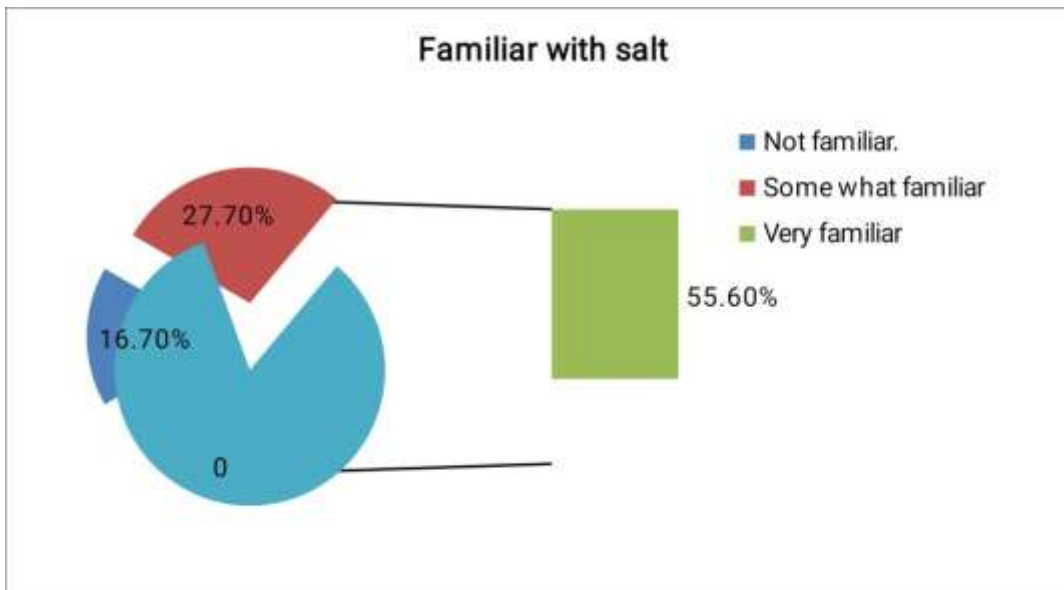


Figure 5: shows that, when respondents were asked about familiarity with the salt content in common foods, 20 (55.6%) of the respondents were not familiar with salt content in common foods, 10 (27.7%) were somewhat familiar and 6 (16.7%) were very familiar with the salt content in common foods.

Table 2: Classification of food stuffs (n=36)

Item	No. of patients	Percentage (%)
Food to be restricted in hypertension		
Salty and fatty food stuffs; Proteins and Energy food stuffs;	32	88.9
	4	11.1
Food recommended in hypertension		
Proteins and Energy food stuffs	14	38.9
Fruits and vegetables	22	61.1

Table 2 shows that most respondents 32 (88.9%), knew the food stuffs restricted in hypertension while the least, 4 (11.1%) didn't know the food stuffs restricted in hypertension. The majority, 22 (61.1%) of the participants, knew the food stuffs recommended in hypertension, while 14(38.9%) didn't know the food stuffs recommended in hypertension.

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Table 3: Attitudes of hypertensive patients towards dietary management. (n=36)

Items	Frequency n=36	Percentage (%)
Positive Attitude towards adding fruits and vegetables on daily diet	30	83.3
Negative Attitude towards adding fruits and vegetables on daily diet	6	16.7
Positive attitude towards extra salt on blood pressure.	29	80.6
Negative attitude towards extra salt on blood pressure.	7	19.4
Positive attitude towards high fatty dairy products and over fried foods on blood pressure levels.	32	88.9
Negative attitude towards high fatty dairy products and over-fried foods on blood pressure levels.	4	11.1
Positive attitude towards the importance of dietary management in controlling hypertension.	19	52.8
negative attitude towards	17	47.2
Importance of dietary management in controlling hypertension.		
Positive attitude towards physical exercises on blood pressure.	21	58.3
Negative attitude towards physical exercises on blood pressure.	15	41.7

Table 2 shows that 30(83.3%) participants had a positive attitude towards adding fruits and vegetables to their diet, while 6(16.7%) had a negative attitude towards it. Regarding adding fruits and vegetables, 29 (80.6%) had a positive attitude, while 7 (19.4%) had a negative attitude. The majority, 32 (88.9%), of the patients had a positive attitude 4(11.1%) towards the consumption of fatty dairy products and over-fried food having an impact on hypertension while 4(11.1%) had a negative attitude

towards it. 19(52.8%) patients believed dietary management is important in controlling hypertension, while 17 (47.2%) participants had a negative attitude about it. The majority of 21 (58.3%) respondents strongly agreed that physical exercises have an impact on blood pressure, while 15(41.7) respondents had a negative attitude towards physical exercises.

Discussion of results.

Knowledge of hypertensive patients toward dietary management

According to the findings of the study, hypertension was most common in the age group of 40 to 50 years and above. This was consistent with the findings of a KAP study done in the general population of Guntur, India, on silent killer diseases like hypertension and diabetes, which portrayed that the respondents of the age group 40 to 50 years and above had the highest number of hypertensive cases. (Bollu *et al.*, 2018). This relationship could be due to changes that occur while aging, like atrophy of the blood vessels, hormonal changes like a decrease in estrogen, as in menopause, lack of physical exercises, and the presence of chronic diseases. Out of the 36 participants, 44.40% reached the secondary level and, therefore, were expected to have acquired good knowledge in regards to dietary management that remarkably controls hypertension effectively. Significant knowledge and proper understanding of dietary recommendations and restrictions were empirically examined and found to greatly enhance the ability to manage hypertension effectively through awareness of the risks and nutritional needs, informed choices, adoption of effective dietary patterns, and better blood pressure control. Similarly, a KAP study done in Chitwan, Nepal, showed that 21.2 % were learned participants (Yadav *et al.*, 2017), and this was in association with the study findings. Educated people could probably possess high health literacy levels, positive attitudes towards health-seeking behavior like medical consultation, critical thinking, and analytical skills that facilitate understanding scientific evidence and research towards management of CVDs like hypertension through stress coping mechanisms, medication adherence, and reduction of alcohol consumption. Significant results concerning knowledge about the importance of dietary modifications even when taking blood pressure-lowering medication highlighted that 17 (47.2%) participants had knowledge about the salt content in common food and how reducing salt intake played a vital role in managing hypertension. 14 (38.9%) participants knew that eating more fruits and vegetables had a positive impact on hypertension control. Participants' knowledge was in one way or another derived from the experience of their condition or friends and family members with the same condition. Paramount information provided by doctors, nurses, and midwives during their hospital visits was found to be true about the DASH like a saturated fat-free diet, reduction of salt intake, consumption of more fruits and vegetables, limiting sugary beverages because their consumption having risks of CVDs like hypertension by accumulation of cholesterol /fats in the lumen of blood vessels. The finding above was about a particular study about salt intake done by Elliott in 2018, which showed that salt was directly correlated with high blood pressure levels and the prevalence of hypertension in many populations. Similarly, a KAP study on hypertension

done in Chitwan, Nepal, also revealed consistent findings about the knowledge of hypertension control using dietary modifications, where adding fruits and vegetables to the normal diet and low salt intake was recommended (Shrestha *et al.*, 2016). Unexpectedly, the data revealed that 3(8.3%) and 2(5.6%) participants did not know the dangers of sugary beverages and fatty food leverage. Surprising insights were uncovered regarding continuous luxurious consumption of risky diets regardless of whether it would affect their hypertension. The study revealed that there is still a gap in patient education about the dangers of excess sugary and fatty food consumption, including excessive weight gain, obesity, type 2 diabetes, and coronary heart disease. Although the findings showed a correlation between education level and practices of dietary modifications, the association cannot be determined from this study, and hence, room for further studies is granted.

The study also revealed that most of the respondents 32 (88.9%) knew that food should be avoided or restricted blood pressure control like fatty foodstuff since they increase the risks of CVDs like hypertension. A slight upward trend in knowledge about the foodstuffs to be restricted or consumed in hypertension was observed, though it didn't meet the statistical significance that called for more studies with different research methodologies to confirm the above results. 22 (61.1%) of the respondents knew the foodstuffs that were beneficial for blood pressure regulation like fruits and vegetables. This knowledge could be attained from hospital health education and their educational levels. These findings were consistent with Yadav and Singh (2021), who revealed that individuals' knowledge about the benefits of dietary and lifestyle modification is interconnected with their healthcare-seeking behavior.

Attitudes of hypertensive patients toward dietary management

Significant findings emerged where the majority of participants 30 (83.3%) had a positive attitude about incorporating green leafy vegetables and fruits into their daily diet and believed this could control high blood pressure. This explained why most people in the community spared some days in a week to have vegetables like Nakatti, sukuma wiki, globe, and cabbages prepared as the main meal rather than a side dish. This was in line with studies conducted on the Dietary Approaches to Stop Hypertension (DASH) intervention (Appel, 2019) and the Oxford Fruit and Vegetable study (John, 2022) which both showed that a diet rich in fruits, vegetables, low-fat dairy products and low saturated fats can substantially lower both systolic and diastolic blood pressure. The study findings indicated that the majority of the respondents, 20 (55.6%), had a good attitude towards avoiding extra salt in their food. This was clear evidence that depicts the study participants' concerns about the related complications that follow adding salt to

already served food. The study results were in line with Abiy & Teketel (2019), which showed that 26.3% of participants limited salt addition or even its consumption sometimes to maintain normal blood pressure. The consistent results from both studies imply a common characteristic between the study participants that might have acquired knowledge through medical consultations and their previous medical history. Results might apply to similar contexts to establish their broader relevance as well.

The study also revealed that most of the respondents (32, 88.9%) had a positive attitude regarding restriction or no consumption of highly fatty dairy products and over-fried food even when they could afford to have them in their daily meal. Therefore, this implied that an average number of study participants were adopting preventive measures of hypertension like avoiding high-fat food and dairy products due to their risk of clogging blood vessels with fats. The results were relatively similar to those in a study carried out in South Ethiopia by Eyasu et al. (2017), where 91.2% of respondents avoided high-fat products to reduce fats in the body. Noteworthy differences in attitude were observed, with a significant number of 17 (47.2%) of the respondents having a negative attitude towards dietary management applicability as being less important in controlling hypertension. This stemmed from several factors often involving psychological, social, and practical barriers. Addressing these barriers requires tailored education, support, and strategies that consider the individual's needs and challenges, helping to foster a more positive attitude towards dietary management in controlling hypertension. The study further revealed that the rich regarded eating junk foods like pizza, chips, meat, chicken, milk, yogurt, pork, and alcohol consumption as a healthy lifestyle and continuously defended it saying they only live once and that green vegetables and fruits were meant for the poor and was related to suffering or low social status.

Conclusion.

The majority of the participants had good knowledge regarding the relevant dietary approaches needed to stop hypertension. A significant number of the respondents had a positive attitude toward the dietary modifications for proper hypertension control.

Recommendations.

The Ministry of Health and other responsible bodies should strive to increase the awareness and knowledge of hypertensive patients about the importance of consultation and seeking medical services.

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List of abbreviations.

BMI	:	Body Mass Index
BP	:	Blood Pressure
CVDs	:	Cardio Vascular Diseases
DASH	:	Dietary Approaches to Stop Hypertension
DBP	:	Diastolic Blood Pressure
MOH	:	Ministry of Health
HBP	:	High Blood Pressure
HTN	:	Hypertension
KAP	:	Knowledge, Attitude, and Practices
NCDs	:	Non-Communicable Diseases
OPD	:	Out Patients Department
SBP	:	Systolic Blood Pressure
USAID	:	United States Agency for International Development
WHO	:	World Health Organization.

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Conflict of interest.

The authors declare no conflict of interest.

Availability of data.

Data used in this study is available upon request from the corresponding author.

Authors contribution

DN designed the study, conducted data collection, cleaned and analyzed data, and drafted the manuscript; RN supervised all stages of the study from conceptualization of the topic to manuscript writing and submission, and JFN supported in study conceptualization general supervision and mentorship.

Authors biography

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