

Nutrition Knowledge, Attitude, and Practices among Hypertensive Patients Attending Medical Outpatient Clinic at Chuka County Referral Hospital, Tharaka Nithi County, Kenya

James Mukundi Ngai¹, Nyanchoka Abednego Moriasi¹, Isaac Nthiga²,
Wanjiru Mburu¹, Samuel Mpungu³

¹Department of Nutrition and Dietetics, Kenya Medical Training College, Thika Campus P.O Box 729 - 01000, Thika, Kenya

²Department of Nutrition & Dietetics, Kabarak University, Kenya.

³Department of Nursing, Wangige Level 5 Hospital, Kenya

Corresponding Author: James Mukundi Ngai

ABSTRACT

Background: Hypertension has become a serious public health challenge in many developing countries. It is estimated that 80 million adults have hypertension in sub-Saharan Africa, with Kenya having a prevalence of 23.8%. Tharaka Nithi County is one the counties in Kenya with higher rates of hypertension.

Objective: To explore nutrition knowledge, attitude and practices of hypertensive patients.

Design: A cross sectional descriptive study was conducted. A sample of 87 were randomly selected

Setting: Medical outpatieint clinic at Chuka County Referral Hospital.

Subjects: Hypertensive patients.

Results: Most of the subjects (55.2%) were female and 44.8% were males, a mean age of 48.46 ± 8.823 , and 67.8% living in rural areas. The average scores for nutrition knowledge, attitude and practices was 54.71%, 75.3% and 57.17% respectively. The study found a significant relationship ($r=0.002$) between knowledge of any health condition related to high intake of salt and if good nutrition attitude is important in management of hypertension, knowledge of any health condition related to high intake of salt and adding extra salt to food on the table ($r=0.005$) as well as eating less salt help in management of hypertension and smoking cigarette($r<0.001$) and between thinking if physical exercise helps to reduce high blood pressure and smoking cigarette($r=0.042$).

Conclusion: Average nutrition knowledge, positive nutrition attitude and good nutrition practices were observed among the study participants. The fact that significant relationship was found between nutrition KAP, interventions aimed at improving nutrition KAP among hypertensive patients should be enforced focusing on management of hypertension.

Key Words: Hypertension, nutrition knowledge, nutrition attitude, nutrition practices, Kenya

INTRODUCTION

Hypertension has become a serious public health problem in many developing countries experiencing epidemiological transition from communicable to non-communicable diseases. This transition has been attributed to population aging, urbanization, and behavioral risk factors such as unhealthy diets, sedentary lifestyles,

smoking, excessive alcohol consumption and chronic stress. ^[1] Chronic condition or non-communicable diseases places long-term demands on health care systems because these conditions require on-going management over many years. ^[2]

Globally, an estimated 26% of all adults have hypertension. ^[3] The World health organization estimates approximately

80 million adults in sub-Saharan Africa had hypertension in the year 2000, later epidemiological projections suggest that the figure will rise to 150 million by 2025. [4] In Kenya, prevalence of hypertension for both adult male and female was 37% in the year 2012. [1] The 2016 Kenya Stepwise survey report indicated that prevalence of hypertension was 23.8% with every 8 people out of 100 people having severe hypertension. [5]

Hypertension is the leading non-communicable disease diagnosed during outpatient visits and accounts for more than 50% of total hospital admissions and more than 55% of hospital death. [6] Close to 100,000 persons die every year in Kenya from hypertension and its related complications. [7] According to Kenya Ministry of Health, [7] Tharaka Nithi, Murang'a, Embu, Lamu and Makueni counties recorded the higher rate of new case of hypertension. It poses a great economic burden on already stretched health systems by communicable diseases such as HIV/AIDS, tuberculosis, malaria and under nutrition besides being not well equipped and staffed. [8]

For this reason, lifestyle modification such as good nutrition is the key in management of hypertension. Therefore, cost-effective non-pharmacological strategies like good nutrition knowledge, attitude and practices in management of hypertension is particularly needed in these counties because resources are limited and generally must be shared with the concurrent burden of persistent communicable diseases.

METHODS

Study Design, Setting and participants

The study was conducted at Chuka County referral hospital, Tharaka Nithi County, Kenya. The hospital is county referral hospital receiving referral cases from other level 4, 3 and 2 hospitals in the county as well as offering other specialized services including in-patients and outpatient medical services.

A cross-sectional descriptive study was conducted in which factual information about nutrition knowledge; attitude and practices among hypertensive patients were explored. Chuka county referral hospital was purposively sampled as a study location because it is the county referral hospital where most cases of chronic diseases are referred to from other county health facilities. Systematic sampling method was adopted in choosing the study sample size.

The populations targeted for the study were hypertensive patients attending Medical Outpatient Medical Clinic at Chuka County Referral Hospital. Hypertensive patients who declined to consent to participate in the study due to health or personal reasons and critically ill patients were excluded from the study.

Data Collection

Data was collected using structured questionnaires. Assessment of nutritional knowledge, attitude and practices were done where participants were asked specific questions to elicit information on nutritional knowledge, attitude and practices.

Nutrition Knowledge, Attitude and Practices Test

Participants were asked eight questions on nutrition knowledge. Average percentage of the correct answer was calculated and their level of nutrition knowledge was categorized as poor (less than 50%), average (50%-75%) and good (above 75%). Nutrition attitude test was done by asking participants four questions related to nutrition attitude. Average percentage was calculated and their level of attitude categorized as negative (less than 50%) and positive (more than 50%). Nutrition practices test was done by asking participants four questions and averaging percentage of the correct answer then categorising their practices as poor (less than 50%) and good (more than 50%).

Statistical Analysis

Data analyses were conducted using SPSS version 21.0 (IBM SPSS Inc, IL, USA) software. Descriptive statistics, including frequencies distribution,

percentage mean and standard deviation were generated to describe the characteristics of the study participants. Chi square was used to determine the relationship between nutrition knowledge versus nutrition attitude, nutrition knowledge versus nutrition practice and nutrition attitude versus nutrition practice and a P-Value of < 0.05 was considered significant at 95% confidence level.

Ethical Considerations

The research proposal was approved by Ethical Review Committee of Kenya Medical Training College, Department of Nutrition and Dietetics, Thika Campus. Research permit and authorization was obtained from the National Commission of Science and Technology. Research authorization was obtained from County Director of Education and County Director of Health Services in Tharaka Nithi County. Permission to conduct the study was obtained from the Medical Superintendent of the Chuka County Referral Hospital. Written informed consent was obtained from each participant before enrolment. All measures to safeguard the participants' ethical rights were adhered to.

RESULTS

Participants Demographic Data

Among the 87 hypertensive patients enrolled in the study, 55.2% of the participants were female and 44.8% were males, mean age was 48.46 ± 8.823 , with 40.2% aged 46 years and above and 4.6% being less than 25 years, 13.8% of the participants were never married, 60.9%

were married, 14.9% had divorce and 10.3% were widows, 67.8% living in rural area and 32.2 % lived in urban centres.

Table 1: Demographic Data of the Respondents

Variables	Frequency (N=87)	Percentage (%)
Gender		
Male	39	44.8
Female	48	55.2
Age in years		
Less than 25 years	4	4.6
25-30 years	10	11.5
31-35 years	7	8.0
36-40 years	7	8.0
41-45 years	24	27.6
46 years and above	35	40.2
Marital status		
Never married	12	13.8
Married	53	60.9
Divorced	13	14.9
Widowed	9	10.3
Area of residence		
Rural area	59	67.8
Urban center	28	32.2
Total	87	100

Nutritional Knowledge Related to Hypertension

Most (63%) of participants reported that hypertension is related to high intake of salt while 32% of participants said no, 85.1% of the participants reported that eating more fruits and vegetables helps in management of hypertension while 14.9% reported that more fruits and vegetables intake cannot help to manage hypertension. 60.9% of the participants said that eating less animal fats helps in management of hypertension while 39.1% said no, 71.3% said avoiding alcohol intake and cigarette smoking helps to manage hypertension while 28.7% said no and 15% said that smoking can reduce the amount of salt in the diet while 85% said it cannot.

Table 2: Participants' (n=87) nutrition knowledge of hypertension

Knowledge questions	Response	
	Yes n (%)	No n (%)
Hypertension is related to high intake of salt	55 (63)	32 (37)
Eating more fruits and vegetables helps in management of hypertension	74 (85.1)	13 (14.9)
Eating less animal fat helps to manage hypertension	53 (60.9)	34 (39.1)
Avoiding alcohol intake and cigarette smoking helps to manage hypertension	62 (71.3)	25 (28.7)
Which food could be the best choice if you want to reduce amount of salt intake		
Cooked Vegetables	41 (47.1)	
Fruits	33 (37.9)	
Smoking	13 (14.9)	

Half (50.6%) of the study participants said fresh fish is high in salt, 23% said it is false and 26.4% were unsure, 17.2% said that herbs can be used to flavor foods instead of using salts and others spices, 32.2% said false and 50.6% were unsure and 17.2% said of the participants

said that aromat and stock cubes do not contain salt, 32.2% said it was false and 50.6% were unsure.

Knowledge questions	True	False	Unsure
Fresh fish is high in salt	44 (50.6)	20 (23.0)	23 (26.4)
Herbs can be used to flavour foods instead of using salts and other spices	21 (17.2)	31 (32.2)	35 (50.6)
Aromat and stock cubes do not contain salt	15 (17.2)	28 (32.2)	44 (50.6)

Attitude Related to Management of Hypertension

Majority (82.8%) of the participants agreed that good nutrition is important in management of hypertension while 17.2% disagreed, 72.4% agreed that smoking cigarette causes high blood pressure while 27.6% disagreed, 67.8% of participants agreed alcohol intake causes high blood pressure while 32.1% disagreed and 78.2% of participants agreed that physical exercise helps to lower blood pressure while 21.8% disagreed.

Table 3: Participants' (n= 87) attitude related to management of hypertension

Attitude questions	Response Agree n (%)	Disagree n (%)
Is good nutrition important in management of hypertension?	72 (82.8)	15 (17.2)
Does smoking cigarette causes high blood pressure?	63 (72.4)	24 (27.6)
Does alcohol intake cause high blood pressure?	59 (67.8)	28 (32.1)
Does physical exercise help to lower blood pressure?	68 (78.2)	19 (21.8)

Practices Related to Management of Hypertension

Only 60.9% of the participants were not adding extra salt to food on the table while 39.1% were adding extra salt to food on the table, 63.2% of the participants were not consuming alcohol while 36.8% were consuming alcohol, 71.3% of the participants were not smoking cigarette while 28.7% were smoking cigarette, 66.7% were not participating in physical exercise while 33.3% were participating physical exercise.

Table 4: Participants' (n=87) practices related to management of hypertension

Practice questions	Response	
	Yes n (%)	No n (%)
Do you add extra salt to food on the table?	34 (39.1)	53 (60.9)
Do you consume alcohol?	32 (36.8)	55 (63.2)
Do you smoke cigarette?	25 (28.7)	62 (71.3)
Do you participate in physical exercise?	29 (33.3)	58 (66.7)

From the study, the average scores for nutrition knowledge, attitude and practices among the study participants was 54.71%, 75.3% and 57.17% respectively.

Association Between Nutrition Knowledge, Nutrition Attitude and Nutrition Practice

Table 5: Chi square test for nutrition knowledge Vs nutrition attitude

Nutrition knowledge VS nutrition attitude	X ²	d.f	P. Value
Knowledge of any health condition related to high intake of salt Vs good nutritional attitude is important in management of hypertension	9.649	1	0.002
Knowledge of low salt foods Vs smoking can cause high blood pressure	0.981	4	0.759
Eating more fruits and vegetables help in management of hypertension Vs physical exercise can help to reduce high blood pressure	0.714	1	0.398
Eating less salt help in management of hypertension Vs alcohol intake can cause high blood pressure	4.106	2	0.128

There was a significance relationship between nutrition knowledge and nutrition attitude of the study participants. The study found a significant relationship ($r=0.002$) between knowledge of any health condition related to high intake of salt and if good nutrition attitude is important in management of hypertension (Table 5). A positive, but insignificant relationship was observed ($r=0.759$, $r=0.398$, $r=0.128$) between the knowledge of low salt foods vs smoking, eating more fruits and vegetables vs physical exercise and eating less salt vs alcohol intake.

Table 6: Chi square test for nutrition knowledge Vs nutrition practices

Nutrition knowledge Vs nutrition practices	χ^2	d.f	P. Value
Knowledge of any health condition related to high intake of salt Vs adding extra salt to food on the table	10.608	2	0.005
Eating more fruits and vegetables help in management of hypertension Vs taking alcohol	10.608	2	0.366
Eating less salt help in management of hypertension Vs smoking cigarette	14.857	1	<0.001

There was a significant relationship between nutrition knowledge and nutrition practices of the study participants. The study found a significant relationship ($r=0.005$, $r<0.001$) between knowledge of any health condition related to high intake of salt and adding extra salt to food on the table as well as eating less salt help in management of hypertension and smoking cigarette (Table 6). A positive, but insignificant relationship was observed ($r=0.366$) between eating more fruits and vegetables to help in management of hypertension and taking alcohol.

Table 7: Chi square test for nutrition attitude vs nutrition practices

Nutrition attitude Vs nutrition practices	χ^2	d.f	P. Value
Think good nutrition attitude is important in management of hypertension Vs adding extra salt to food on table	1.601	2	0.74
Think physical exercise help to reduce high blood pressure Vs smoke cigarette	4.121	1	0.042
Think smoking causes high blood pressure Vs doing physical exercise	1.036	1	0.309

There was a significant relationship between nutrition attitude and nutrition practices of the study participants. A significant relationship was noted ($r=0.042$) between thinking if physical exercise helps to reduce high blood pressure and smoking cigarette (Table 7). A positive, but insignificant relationship was observed ($r=0.74$, $r=0.309$) between thinking that good nutrition attitude is important in management of hypertension and adding extra salt to food on the table as well as attitude that smoking cigarette causes high blood pressure and doing physical exercise (Table 7).

DISCUSSIONS

This was a predominantly female study. This is in consistent with a study by Aghoja et al and Chotisiri which reported that more females visit health care facilities than males. [8,9] Similar results were reported in Kenya demographic and health survey report that more females have been told by a health worker that they have high blood pressure as compared to their male counterparts. [10] In this current study, majority of the participants were 46 years and above. These findings concur with those of Kenya demographic and health survey report that hypertension diagnoses increase with age. [10] In the current study majority of participants were married. This is consistent with a study by Prof. Lindiwe in Botswana and a study by Aghoja et al, in Delta State which showed that most of the participants

involved in the study were married. [9,11] In this current study large numbers of participants were living in rural areas, contrary to a report by Kenya demographic and health survey that most hypertensive patients are found in urban areas. [10]

Average nutrition knowledge on hypertension among the study participants was demonstrated as more than a quarter of participants did not know that good nutritional knowledge is important in management of hypertension. Similar results were showed in a study done in Botswana by Prof. Lindiwe which indicated that overall nutrition knowledge of hypertension among the hypertensive patients was average and participants lacked knowledge relating to general knowledge of hypertension, signs and symptoms of hypertension and some recommended lifestyle practices. [11] In the current study more than a quarter of the participants reported that hypertension was the not related to high intake of salt. These findings disagree with those of a study by Aghoja et al, in Delta State among hypertensive patients which showed that most of respondents in the study reported hypertension to be the most common health condition related to high intake of salt. [9] In the current study, less than a quarter of participants reported that intake of more fruits and vegetables do not help in management of hypertension. This does not concur with Fung et al, report that high

intake of fruits and vegetables significantly reduces blood pressure among both normotensive and hypertensive patients. [12]

Almost a quarter of study participants reported that good nutritional attitude was not important in management of hypertension and more than a quarter of the participants said some lifestyle practices such as taking alcohol, smoking cigarette and doing some physical exercise are not important in management of hypertension. This concurs well with report by Stepwise survey where 6.5% of Kenyans with non-communicable diseases are insufficiently physically active. [5] Similar results were showed by Kearney et al in Ireland that almost half (45%) of the hypertensive patients had poor lifestyles and were not willing to change their lifestyles. [3]

In this current study, more than a quarter of the participants were doing some practices such as adding extra salt to food on the table, taking alcohol, smoking cigarette and not doing physical exercise. Similar findings were reported in the Stepwise survey in Kenya which revealed that 13% of Kenyans use some form of tobacco product and 19.3% of adults' drink alcohol, with 12.7% being heavy episodic drinkers. [5] However, such reported undesirable practices by participants could be attributed to the fact that these were self-reported responses and some participants might not have disclosed their true lifestyle practices to the researcher.

A significant relationship ($r=0.002$) between knowledge of any health condition related to high intake of salt and if good nutrition attitude is important in management of hypertension was noted in the study. Participants who had knowledge of any health condition related to high intake of salt and a positive nutrition attitude. These results are not similar to those of a study done in Thailand by Chotisiri L et al which reported that participants with high mean score of nutrition knowledge on hypertension had neutral nutrition attitude towards management of hypertension. [8]

The current study found a significant relationship ($r=0.005$) between knowledge of any health condition related to high intake of salt and adding extra salt to food on the table. Participants who knew health conditions related to high intake of salt were not adding extra salt to food on the table. These results do not concur with those of Kearney PM et al in Ireland which showed that hypertensive patients who had high nutrition knowledge score were not adhering to DASH diet recommendations. [3]

In Thailand, a study by Chotisiri L. et al reported that hypertensive patients had moderate level of nutrition practices particularly physical exercise. [8] This does not concur with current study findings where a significant relationship ($r=0.042$) between physical exercise helps to reduce high blood pressure and smoking cigarette was noted. Participants who had positive attitude that physical exercise helps to reduce high blood pressure were not smoking cigarette.

Limitations

We acknowledge the following limitations; its cross-section design and small sample size. Health assessments such as BMI, and Blood pressure were not assessed during data collection. Other co-morbidities were not assessed or included. Hypertension is a strongly associated with a number of co-morbidities that could have also impacted on the nutrition knowledge, attitude and practices of these patients.

CONCLUSIONS

Average nutrition knowledge, positive nutrition attitude and good nutrition practices were observed among the study participants. The fact that significant relationship was found between nutrition KAP, interventions aimed at improving nutrition KAP among patients should be enforced focusing on management of hypertension.

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