

## Knowledge of Hypertension, Risk Factors and Awareness Among Students in Federal University of Agriculture Abeokuta, Ogun State

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### Abstract

Hypertension is a major global health challenge, with increasing prevalence among young adults in developing countries like Nigeria. University students are particularly at risk due to lifestyle transitions involving poor diet, physical inactivity, stress, and limited awareness. The aim of the study was to assess hypertension knowledge, risk factors, and awareness among students at the Federal University of Agriculture, Abeokuta, Ogun State. This is a quantitative research study using a cross-sectional design, selecting 425 undergraduate students from Federal University of Agriculture Abeokuta through a multi-stage sampling technique. Data collection involved structured questionnaires, with analysis carried out using SPSS version 23. Results revealed that a majority of participants (46.6%) were aged 21-23, with more than half being female (57.2%). Most students (97.4%) did not have hypertension. However, approximately half of the students (50.6%) exhibited low knowledge about hypertension, and 29.2% were at high risk of developing the condition. A significant portion (28.2%) relied on internet websites for information about hypertension, and an overwhelming majority (92.9%) believed there was a need for increased public awareness and education regarding hypertension management and prevention within the university. In conclusion, the study underscores a substantial knowledge gap, identifies significant risk factors, and stresses the importance of proactive healthcare interventions to raise awareness and mitigate hypertension risks among FUNAAB students.

**Keywords:** Hypertension, knowledge, awareness, risk factors, Funaab.

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## Introduction

### Background to the Study

Hypertension is a significant global public health challenge, and understanding its prevalence, risk factors, and awareness among young adults, particularly students, is crucial for early intervention and prevention<sup>1</sup>. This is especially important in Nigeria, where the prevalence of hypertension and related cardiovascular diseases is increasing<sup>2</sup>. Hypertension, characterized by persistently elevated blood pressure, is a major modifiable risk factor for cardiovascular diseases, stroke, kidney failure, and premature death<sup>3</sup>. Globally, hypertension accounts for a significant number of deaths each day. The increasing prevalence of hypertension in sub-Saharan Africa, including Nigeria, is driven by factors such as urbanization, lifestyle changes, and dietary habits<sup>4</sup>. Understanding hypertension among university students is particularly relevant because this population often undergoes significant lifestyle transitions that may increase their risk<sup>5</sup>. These transitions include changes in dietary patterns, physical activity levels, stress, and alcohol consumption<sup>5</sup>. Assessing their knowledge and awareness is the first step toward promoting preventive behaviors and reducing future cardiovascular risks. Several modifiable and non-modifiable risk factors contribute to the development of hypertension. Modifiable risk factors include:

- **Dietary habits:** Consuming a high-sodium diet, not eating enough fruits and vegetables, and following generally unhealthy eating patterns have been linked to increased risk<sup>5,6</sup>.
- **Lifestyle choices:** A sedentary lifestyle, obesity, excessive alcohol intake, and smoking are key contributors to hypertension
- **Psychosocial influences:** High levels of stress and mental health challenges also play a significant role<sup>5,7</sup>.

Non-modifiable risk factors, on the other hand, are factors that individuals cannot change. These include:

- **Age:** The risk of hypertension increases with advancing age

- **Family history:** Having close relatives with hypertension raises an individual's likelihood of developing the condition.
- **Genetics:** Genetic predisposition is a key determinant in the development of hypertension.

Awareness of hypertension and its risk factors is crucial for prevention and early management. Studies have shown that awareness levels vary across different populations and regions. For instance, a study in North West Tanzania aimed at determining the prevalence, awareness, and risk factors associated with hypertension and showed that few people are aware of it and even fewer access effective treatment<sup>4</sup>. Enhancing self-awareness among undergraduate students regarding the risk factors for hypertension through targeted health education has been identified as an effective strategy<sup>5</sup>. Well-designed health education programs can significantly improve awareness of key risk factors such as high sodium intake and stress encouraging students to adopt healthier behaviors and make informed lifestyle choices<sup>5</sup>. Several studies have investigated hypertension and its risk factors in Ogun State, Nigeria. These studies provide baseline knowledge into the local realities and unique challenges associated with managing hypertension in the region. Such research is vital for planning and prioritizing effective intervention programs targeted at local groups<sup>2</sup>. A study focusing on hypertensive out-patients in Abeokuta metropolis, Ogun State, examined factors affecting adherence to the Dietary Approach to Hypertension (DASH) treatment<sup>8</sup>. Socio-economic characteristics, attitudes towards dietary adherence, and other factors were assessed to understand the barriers to effective management of hypertension<sup>8</sup>. Another research in Ogun State assessed risk factors for diabetes mellitus and hypertension among artisans, highlighted the increasing prevalence and morbidity of these conditions, emphasizing the need for data driven intervention programs targeting specific risk factors among local groups<sup>2</sup>

### Broad Objectives of the Study

To assess the knowledge, risk factors and awareness of hypertension among students in Federal University of Agriculture Abeokuta, Ogun State.

### Specific Objectives of the Study

- i. To determine the level of knowledge of hypertension among Federal University of Agriculture Abeokuta, Ogun State students in Nigeria.
- ii. To assess the socio demographic characteristics associated with knowledge, risk factors and awareness of hypertension among students in FUNAAB.
- iii. To determine the level of risk factors associated with the development of hypertension among FUNAAB students in Nigeria.
- iv. To assess the factors associated with awareness of hypertension among FUNAAB students.
- v. To offer recommendations and interventions to improve knowledge and promote healthy behaviour among FUNAAB students.

### Research Questions

- i. What is the level of knowledge of hypertension among the students of FUNAAB?
- ii. What are the socio demographic characteristics associated with knowledge, risk factors and awareness of hypertension among students in FUNAAB?
- iii. What are the risk factors associated with the development of hypertension among FUNAAB students?
- iv. What are the factors associated with awareness of hypertension among FUNAAB students.
- v. What recommendations and interventions can be suggested to improve knowledge awareness and promote healthy behaviours among FUNAAB students?

### Research Hypothesis

- i. There is no significant association between the socio demographics characteristics and the level of knowledge of hypertension among students in FUNAAB.

- ii. There is no significant relationship between the level of knowledge and level of risk factors of hypertension among FUNAAB students.

### Scope of the Study

This study will be carried out at Federal University of Agriculture, Abeokuta, Ogun State. It will comprise students only. The population for the study will comprise students of both genders from various departments within Federal University of Agriculture Abeokuta Ogun State.

## Methodology

### Design

A cross-sectional study design was employed for this study.

### Target Population

The study population comprised only of Undergraduate students in Federal University of Agriculture, Abeokuta (FUNAAB).

### Sampling and Sampling Technique

This research is a cross-sectional study conducted from September to October, 2023 among Federal University of Agriculture, Abeokuta (FUNAAB) students in Nigeria. A multi-stage sampling technique will be used to select participants.

**Stage 1:** Faculties to be used would be selected using a purposive sampling technique.

**Stage 2:** Simple random sampling will be used to select the department to be used.

**Stage 3:** Simple random sampling technique will then be used in distributing questionnaires to eligible and consenting participants.

The samples will be taken from 4 colleges; College of Biological sciences, College of Engineering, College of Management sciences and College of Plant science and crop production. Two department each was selected from each college using simple random technique.

- The sample size for this study was determined using Yamane's sample size formula<sup>9</sup>
- The estimated population size is 11328 students

Using Yamane's formula,

- $n = N \div (1 + N(e)^2)$  (Yamane, 1967)
- where n is the sample size
- N= the total population size
- e= level of precision (5% =0.05)
- $n = [11328 \div (1 + 11328(0.5)^2)]$
- $n = (11328 \div (1 + 28.32))$
- $(11328 \div (29.32))$
- $n = 386.33$
- $n \approx 386$
- Adding 10% attrition rate will give  $[(10/100) \times 386.33] = 38.63$
- Total =  $386 + 38.63 = 424.96$
- Approximately 425 students.

A total of **425** participants

#### **Inclusion Criteria**

- Participant must be currently enrolled as a student in Federal University of Agriculture, Abeokuta (FUNAAB).
- Participants must be at least 15years old.
- Participants must be able to provide informed consent to participate in the study
- Participant must be willing to complete the survey.

#### **Exclusion Criteria**

- Participants who are unable to understand or communicate in the language used in the study.
- Participants who have a cognitive or mental impairment that may affect their ability to understand the questions or provide accurate responses.

#### **Instrument for Data Collection**

Data was collected using a well-developed, structured questionnaire. The interviewer-administered questionnaire will consist of 30 questions, including closed-ended, open ended

questions and 5-point scale response options. The questionnaire is divided into 5 sections. Section A consists of 10 questions assessing participants' socio-demographic information; Section B consists of 6 questions exploring Knowledge of hypertension among students, among the students. Section C consists of an array of 5 questions to evaluate the possible risk factors of hypertension among students Section D consists of 4 questions exploring awareness and utilization of preventive measures and health care services for hypertension. Section E consists of 5 questions exploring recommendations and intervention

#### **Validity of Instrument**

Content validity was done to assess the instruments content validity by evaluating if it accurately covers the key aspects of knowledge, awareness and risk factors of hypertension among students of Federal University of Agriculture Abeokuta. Face validity was also done to consider if the instrument measures what it intends to measure at face level. The questionnaire was also assessed by my supervisor and other experts in nursing research.

#### **Reliability of Instrument**

Pre-test was carried out on the instrument for data collection among Chrisland University students to evaluate the validity of the questions before actual data collection. Reliability of the test was done using Cronbach's  $\alpha$ . A Cronbach's  $\alpha$ . value of 0.86 was gotten.

#### **Method of Data Collection**

In this survey, a self-administered questionnaire was employed to collect data from a selected number of randomly selected samples spread across the four faculties and two randomly selected departments within the five faculties of the university from September to October, 2023. The questionnaire was distributed to the various departmental offices, students was approached and given the questionnaire by the researcher. A link for Google forms containing the questionnaires was also made available for students interested in filling the form

online. The questionnaire instrument was aimed at discovering student's knowledge, awareness and risk of hypertension. All participants completed a 5-section questionnaire containing standardized questions surrounding respondents' demographic variables, knowledge, risk factors, awareness and utilization of preventive measures and health care services for hypertension, recommendations and intervention of hypertension. An estimated number of 425 students were covered. Confidentiality of the findings was strictly maintained on all collected data

### Method of Data Analysis

Data was analyzed with the use of both descriptive and inferential statistics. Hypothesis was tested using inferential statistics. Data analysis was done using SPSS software version 23. Data was analyzed using descriptive statistics such as frequencies and percentage. Chi-square test was used to determine the association between the independent variables and hypertension. To determine the Level of Knowledge, out of the 6 knowledge questions, 4 and above indicated good level of knowledge, 3-5 indicated average, and less than 2 indicated low level of Knowledge.

### Ethical Consideration

Informed consent was sought from all the participants of the study and confidentiality of the information provided by all participants of the study

was maintained. Ethical clearance was obtained from Ogun State ministry of Health, Nigeria with the reference number: OGHREC/467/62 and date 29/08/2023

## Results

### Introduction

#### The Socio-Demographic Characteristics of the Participants

Table 4.1.1 shows the socio-demographic characteristics of a total of 425 students from FUNAAB. A total of 425 FUNAAB students participated in this study, most of the participants, (46.6%) were within the age range of (21-23) years of age with a median age of 22 years. Females accounted for 243 (57.2%), more than half of the population giving to a female to male ratio of 4:3. More than three-quarter 317(74.6%) were Christians. More than one-quarter of the responses 120 (28.2%) were from the College of Biological Sciences. Students from the department of Microbiology had (14.4%) and the highest response, (44.9%) of the responses were from 400 level students. Two-thirds of the students (73.4%) reported no history of hypertension in the family and 2.6% of the students reporting with history of hypertension. Above one-quarter of the participants of the respondents (28.9%) recently checked their blood pressure among which 67.5% of the students could not remember their blood pressure reading.

**Table 4.1.1. The socio-demographic characteristics of the participants**

Socio demographic data	Frequency	Percentage
<b>Gender</b>		
Female	243	57.2
Male	182	42.8
<b>Age</b>		
15-17	22	5.2
18-20	106	24.9
21-23	198	46.6
24-26	91	21.4
27-29	8	1.9

Continue....

<b>Religion</b>		
Christianity	317	74.6
Islam	103	24.2
Traditional	5	1.2
<b>College of Study</b>		
College of Agricultural Management and Rural Development	79	18.6
	120	28.2
College of Biological Sciences	96	22.6
College of Engineering	89	20.9
College of Food Science and Human Ecology	41	9.6
College of Plant Science and Crop Production		
<b>Department of study</b>		
Agricultural Economics and Farm Management	46	10.8
Agricultural Extension and Rural Development	32	7.5
Biochemistry	36	8.5
Electrical Engineering	51	12.0
Food Science and Technology	37	8.7
Mechanical Engineering	45	10.6
Microbiology	60	14.1
Nutrition and Dietetics	54	12.5
Plant Physiology and Crop production	39	9.2
Soil Science and land Management	25	5.9
<b>Level of study</b>		
100 level	53	12.5
200 level	74	17.4
300 level	107	25.2
400 level	191	44.9
<b>Any history of hypertension in the family</b>		
No	312	73.4
Not sure	52	12.2
Yes	61	14.4

Continue....

<b>Have you ever been diagnosed with hypertension?</b>		
No	414	97.4
Yes	11	2.6
<b>When last did you get check your blood pressure</b>		
2020	3	.7
2021	18	4.2
2022	49	11.5
Can't remember	118	27.8
It's been a long time	51	12.0
Never checked	63	14.8
Recently	123	28.9
<b>What was your last blood pressure readings</b>		
Never checked	48	11.3
Can't remember	287	67.5
High blood pressure	23	5.4
Normal blood pressure	67	15.8

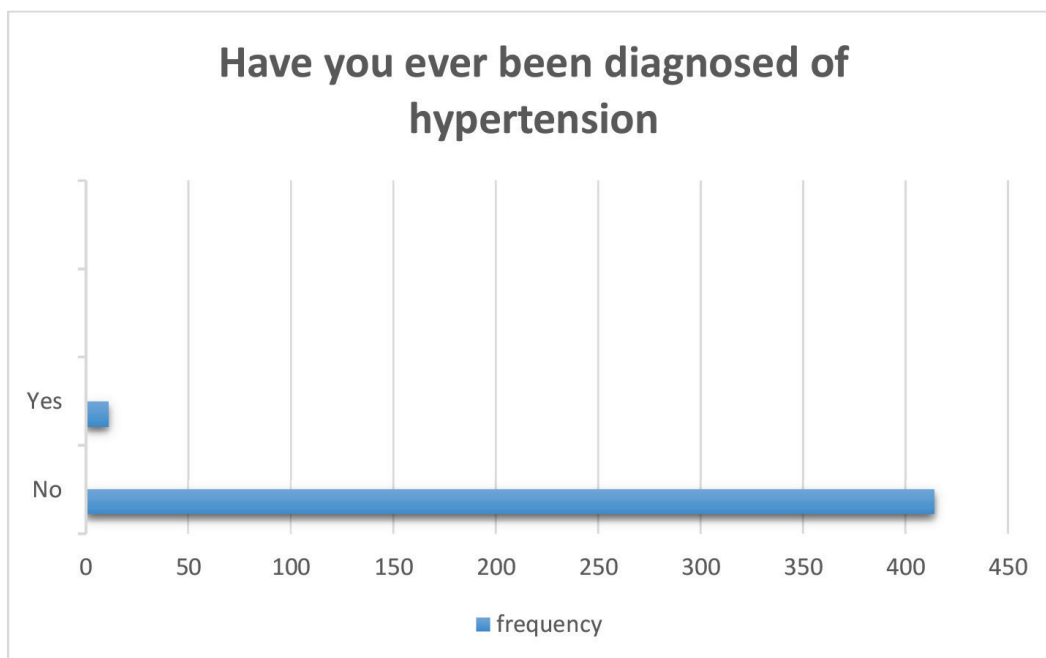
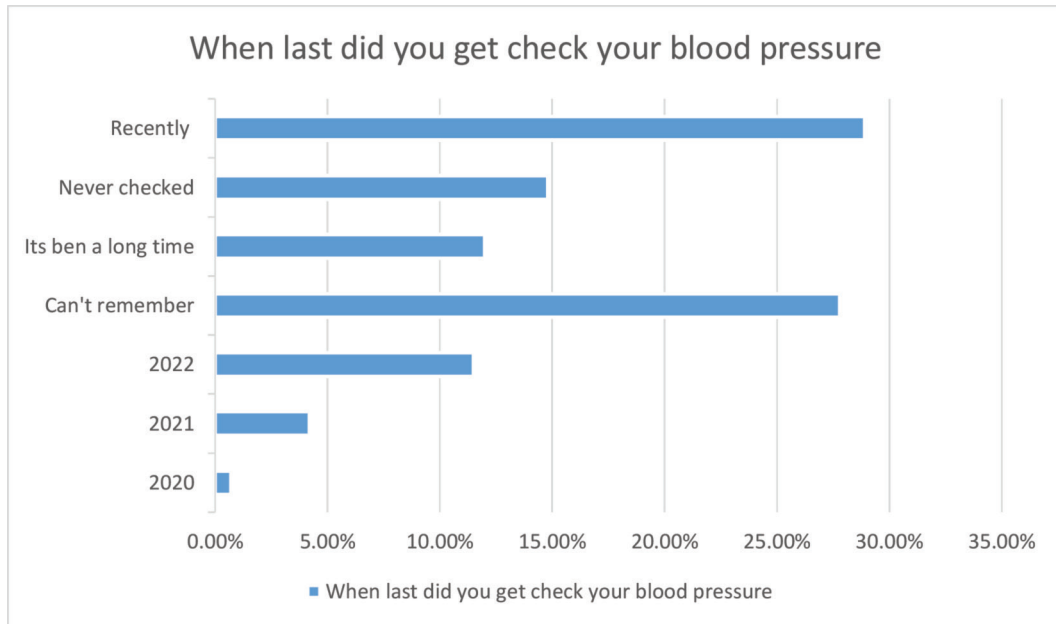


Figure 4.1.2: A Bar chart showing if they have ever been diagnosed with hypertension.



**Figure 4.1.3: A bar chart showing when last the students checked their blood pressure**

### The Knowledge of Hypertension Among FUNAAB Students

Table 4.2.1 shows the knowledge of hypertension among FUNAAB students. Almost two third of the students (65.9%) consider themselves knowledgeable on hypertension and its management. More than one third of the students (75.8%) agreed that hypertension is a silent killer. More than half of the students (59.8%) know the normal blood pressure range for adults. Almost one third of the students (60.2%) are familiar with the symptoms that may indicate hypertension. More than two third of the students (72.9% of the students) believe hypertension affects the youth not the elderly. About half of the student (50.6%) believes it's possible to have hypertension and not manifest any symptoms. About

half of the students (50.6%) had low knowledge of hypertension, with almost one third 31.1% of the students having high knowledge of hypertension. Students within the age group 27-29 years had the highest level of knowledge of 37.5%, students within the age range 18-20 years having an average knowledge of hypertension of hypertension 23.6% and students within the age range of 15-17 years had a low knowledge of hypertension of about 81.8%. In terms of gender, the male respondent had a higher knowledge of hypertension of 33.5%, with the female gender having a low knowledge of hypertension of 51.9%. In terms of level, the 400 level students had a high knowledge of hypertension of 43.4% 100 level students had an average knowledge of hypertension of 35.2% and 200 level students had a low level of knowledge of about 75.3%.

**Table 4.2.1. The Knowledge of hypertension among FUNAAB students**

Knowledge questions on hypertension		Frequency	Percentage
Do you consider yourself knowledgeable on hypertension and its management	No	280	65.9%
	Yes	145	34.1%
Do you agree that hypertension is a silent killer	No	103	24.2%
	Yes	322	75.8%

Continue....

Do you know the normal blood pressure range for adults	No	254	59.8%
	Yes	171	40.2%
Are you familiar with the symptoms that may indicate hypertension?	No	256	60.2%
	Yes	169	39.8%
Hypertension only affects the elderly not the youth	No	310	72.9%
	Yes	115	27.1%
Is it possible to have hypertension and not manifest any symptoms	No	210	49.4%
	Yes	215	50.6%
<b>Level of Knowledge</b>	Low Knowledge	215	50.6%
	Moderate Knowledge	78	18.4%
	High knowledge	132	31.1%
<b>Knowledge of hypertension in terms of Age</b>	<b>Age</b>		
Low knowledge	15-17	18	81.8%
	18-20	53	50.0%
	21-23	96	48.5%
	24-26	43	47.3%
	27-29	5	62.5%
Average knowledge	15-17	4	18.2%
	18-20	25	23.6%
	21-23	34	17.2%
	24-26	15	16.5
	27-29	0	0%
Higher knowledge	15-17	0	0%
	18-20	28	26.4%
	21-23	68	34.3%
	24-26	33	36.3%
	27-29	3	37.5%
<b>Knowledge of hypertension in terms of gender</b>	<b>Gender</b>	Frequency	Percentage
Low knowledge	Male	89	48.9%
	Female	126	51.9%
average knowledge	Male	32	17.6%
	Female	46	18.9%

Continue....

Higher knowledge	Male	61	33.5%
	Female	71	29.2%
<b>Knowledge of hypertension in terms of Level of study</b>	Frequency	Frequency	Percentage
Low knowledge	100 level	31	57.4%
	200 level	55	75.3%
	300 level	54	50.5%
	400 level	75	39.3%
Average knowledge	100 level	19	35.2%
	200 level	0	0.0%
	300 level	24	22.4%
	400 level	35	18.3%
High knowledge	100 level	4	7.4%
	200 level	18	24.7%
	300 level	29	27.1%
	400 level	81	42.4%

### Risk Factors of Hypertension among FUNAAB Students

Table 4.3.1 shows the risk of hypertension among FUNAAB students. About one third of the student (33.6%) often engaged in physical exercise, with 1.2% of the student that never engage in physical activity. Close to half of the students (47.8%) sometimes sleep for at least 8 hours on a day, with 1.4% of the students never sleep for at least 8 hours a day. One-third of the students (34.1%) never consume alcoholic beverages, with 1.6% of the students who

always consume alcoholic beverages. Over one-third of the students (37.6%) sometimes consume canned foods and salty foods, 5.2% of the students always consume canned and salty foods and 5.2% of the students never consume salty food or canned food. More than one-third of the students (35.3%) reported that they always feel stressed with 2.6% of the students reporting that they rarely feel stressed. Over one-third of the students (36.%) are at low risk of developing hypertension, 34.4% are at middle risk of developing hypertension and 29.2% of the student are at high risk of developing hypertension.

**Table 4.3.1. Risk Factors of Hypertension**

Risk Factors of Hypertension	Frequency	Percentage
<b>How often do you engage in physical activity?</b>		
Always	75	17.%
Never	5	1.2%
Often	143	33.6%
Rarely	90	21.2%
Sometimes	112	26.4%

Continue....

<b>How often do you sleep for at least 8 hours on a day</b>		
Always	22	5.2%
Never	6	1.4%
Often	74	17.4%
Rarely	120	28.2%
Sometimes	203	47.8%
<b>How often do you consume alcoholic beverages</b>		
Always	7	1.6%
Never	145	34.1%
Often	66	15.5%
Rarely	129	30.4%
Sometimes	78	18.4%
<b>How often do you consume canned foods and salty foods</b>		
Always	22	5.2%
Never	22	5.2%
Often	104	24.5%
Rarely	117	27.5%
Sometimes	160	37.6%
<b>How often do you feel stressed</b>		
Always	150	35.3%
Often	116	27.3%
Rarely	11	2.6%
Sometimes	148	34.8%
<b>Level of risk of hypertension</b>		
Low risk	156	36.5%
Average risk	146	34.4%
High risk	124	29.2%

### **The factors associated with awareness of hypertension among FUNAAB students.**

Table 4.4.1 displays the awareness and utilization of preventive measures and health care services for hypertension among FUNAAB student. Almost two-thirds of the students (63.8%) reported that the school never organise any health campaigns or educational campaigns or educational campaigns

on hypertension. More than half of the students (55.5%) reported that they never receive information or education about hypertension at their university. Almost half of the students (46.4%) rarely checked their blood pressure with only 1.9% of them that regularly monitor their blood pressure. More than one-quarter of the students (28.2%) rely on the internet website sources to learn on hypertension, 16% of the

students rely solely on health care providers to learn about hypertension, 12.2% of the student get their information on hypertension solely from friends and family, 12.2% of the students rely on all the listed sources of information; Health care providers

(doctors, nurses etc.), Internet websites, Books or magazines, Family or friends for information on hypertension, while others relied on a mixture of the sources of information on hypertension.

**Table 4.4.1. Awareness and utilization of preventive measures and health care services for hypertension.**

Awareness and utilization of preventive measures and health care services for hypertension.	Frequency	Percentage
<b>How often does your school organize any health campaigns or educational campaigns on about hypertension</b>		
Never	271	63.8%
Rarely	136	32.0%
Regularly	3	.7%
Sometimes	15	3.5%
<b>How often do you receive any information or education about hypertension at your university</b>		
Frequently	3	.7%
Never	236	55.5%
Rarely	129	30.4%
Sometimes	57	13.4%
<b>How often do you check your blood pressure</b>		
Frequently	14	3.3%
Never	123	28.9%
Rarely	197	46.4%
Regularly	8	1.9%
Sometimes	83	19.5%
<b>What sources of information do you rely on to learn about hypertension</b>		
Books or magazines, Family or friends	4	.9%
Family or friends	52	12.2%
Health care providers (doctors, nurses etc.)	68	16.0%
Health care providers (doctors, nurses etc.), Books or magazines	5	1.2%
Health care providers (doctors, nurses etc.), Books or magazines, Family or friends	2	.5%
Health care providers (doctors, nurses etc.), Family or friends	17	4.0%
Health care providers (doctors, nurses etc.), Internet websites	28	6.6%

Continue....

Health care providers (doctors, nurses etc.), Internet websites, Books or magazines	8	1.9%
Health care providers (doctors, nurses etc.), Internet websites, Books or magazines, Family or friends	52	12.2%
Health care providers (doctors, nurses etc.), Internet websites, Family or friends	32	7.5%
Internet websites	120	28.2%
Internet websites, Family or friends	37	8.7%

### **The Recommendations and Interventions to Improve Knowledge, Promote Healthy Behaviour and Prevent Hypertension by The Students.**

Almost half of the participants, 43.4% of the students agreed to the availability of healthy food options in school cafeteria to promote healthy eating, while 36.7% of the students strongly agreed. About 42.4% of the students strongly agreed on encouraging stress management to reduce the risk of hypertension. About half of the population (50.8%) strongly agreed to participate in health

promotion campaigns within the school to improve health awareness. About 46.9% of the students strongly agreed to regular blood pressure monitoring in monitoring health centers or clinics for early detection of hypertension. Majority of the students, 92.9% believe there is need for more public awareness and education about hypertension management and prevention in the school, while 2.4% of the student do not believe there is need for more public awareness and education about hypertension management and prevention in the school.

**Table 4.5.1. Recommendations and interventions to improve knowledge, promote healthy behaviours and prevent hypertension**

<b>Recommendations and interventions to improve knowledge, promote healthy behaviours and prevent hypertension</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Availability of healthy food options in school cafeteria to promote healthy eating</b>		
Agree	184	43.4%
Disagree	5	1.2%
Neutral	61	14.4%
Strongly Agree	156	36.7%
Strongly disagree	19	4.5%
<b>Encouraging stress management to reduce the risk of hypertension</b>		
Agree	171	40.2%
Disagree	3	.7%
Neutral	48	11.3%
Strongly Agree	180	42.4%
Strongly disagree	23	5.4%

Continue....

Participating in health promotion campaigns within the school to improve health awareness		
Agree	153	36.0%
Disagree	5	1.2%
Neutral	41	9.6%
Strongly Agree	216	50.8%
Strongly disagree	10	2.4%
<b>Regular blood pressure monitoring in monitoring health centers or clinics for early detection of hypertension</b>		
Agree	172	40.5%
Disagree	10	2.4%
Neutral	26	6.1%
Strongly Agree	212	46.9%
Strongly disagree	5	1.2%
<b>Do you believe there is need for more public awareness and education about hypertension management and prevention in your school</b>		
Maybe	20	4.7%
No	10	2.4%
Yes	395	92.9%

### Analysis Of the Hypothesis

#### Hypothesis 1:

$H_0$ : There is no significant association between the socio demographics characteristics and the knowledge of hypertension among students in FUNAAB.

Chi-square test was conducted to test the significant relationship between the socio demographics characteristics (Gender, Age, and Level of study) and

the knowledge of hypertension among 425 students in FUNAAB. In this study, there was no significant association between Age, religion, college of study, department of study, level of study, family history of hypertension, personal history of hypertension and the last time they checked their blood pressure and level of knowledge of hypertension. But there was a significant association between gender and level of knowledge of hypertension.

**Table 4.6.1. Relationship between Sociodemographic variables and the knowledge of FUNAAB students**

Variables		Low Knowledge	Average Knowledge	High Knowledge	p-value
Gender	Male	89	32	61	.637
	Female	126	46	71	

Continue....

Age	15-17	18	4	0	.026
	18-20	53	25	28	
	21-23	96	34	68	
	24-26	43	15	33	
	27-29	5	0	3	
Religion	Christianity	172	71	74	.000
	islam	43	7	53	
College	College of Engineering	47	17	32	.004
	College of biological sciences	49	29	42	
	College of food sciences	40	22	27	
	College of Agricultural management and rural development	50	9	20	
	College of plant science and crop production	29	1	11	
Department of study	Nutrition and dietetics	22	14	18	.000
	Microbiology	31	13	16	
	Biochemistry	5	16	15	
	Agricultural economics and farm management	32	5	9	
	Agricultural extension and rural development	17	4	11	
	Soil sciences and land management	13	1	11	
	Mechanical engineering	18	8	14	
	Electrical engineering	29	8	9	
	Food science and technology	20	0	11	
	Plant physiology and crop production	28			
Level of study	100 level	31	19	4	.000
	200 level	55	0	18	
	300 level	54	24	29	
	400 level	75	35	81	

Continue....

Any history of hypertension in the family	No	174	57	81	.000
	Yes	15	11	35	
	Not sure	26	10	16	
Have you ever been diagnosed with hypertension	No	213	78	123	.001
	Yes	2	0	9	
when last did you check your blood pressure	Recently	37	29	57	.000
	Its been a long time	25	9	17	
	Can't remember	101	7	10	
	Never checked	31	20	12	
	2020	0	0	3	
	2021	5	0	13	
	2022	16	13	20	
What was your last blood pressure reading	Never checked	25	14	9	.000
	Can't remember	167	40	80	
	High blood pressure	8	4	11	
	Normal blood pressure	15	20	32	

For Age, the Chi-square test revealed there is a significant relationship between age and the knowledge of hypertension among students in FUNAAB ( $p < 0.05$ ). We reject that Age as a socio demographics variable that it has an association with the knowledge of hypertension among university FUNAAB students (Table 4.6.1).

For level of study, the Chi-square test revealed there is a significant association between level of study and the knowledge of hypertension among student in FUNAAB student with a p-value of ( $\chi^2 = 56.031$ ,  $df = 6$ ,  $p < 0.05$ ). We fail to reject that level of study has a socio demographics variable that it has an association with the knowledge of hypertension among university FUNAAB students (Table 4.6.1)

## Hypothesis 2

$H_0$ : There is no significant relationship between knowledge and risk factors of hypertension among FUNAAB students.

Chi-square test was conducted to test the significant relationship between knowledge and risk factors of hypertension among FUNAAB students. The chi-square test revealed there is a significant relationship between knowledge and the risk factor of hypertension among FUNAAB students ( $\chi^2 = 55.579$ ,  $df = 4$ ,  $p < 0.05$ ). We reject the hypothesis that there is no significant relationship between Knowledge and risk factor of hypertension among FUNAAB student (Table 4.6.2).

**Table 4.6.2. Relationship between knowledge of hypertension and risk factors of hypertension among FUNAAB students**

Variable	Risk factor of hypertension	Low risk	Moderate risk	High risk	Value	df	Asymptotic Significance (2-sided)
Knowledge of hypertension	Low knowledge	56	63	96	55.579 <sup>a</sup>	4	.000
	Middle knowledge	63	37	9			
	High knowledge	93	46	19			

### Discussion, Recommendation and Conclusion

A total of 425 students participated in this cross-sectional study. Gender distribution revealed that more than half (57.2%) of the participants were female with 42.8% males and with a female-to-male ratio of 4:3. Similarly to a cross sectional study conducted by Chijioko et al in 2018, on Hypertension and pre hypertension among adolescents attending secondary schools in an urban area of South-East, Nigeria, nine hundred and eighty-four adolescents were recruited for the study, and they comprised 470 (47.8%) males and 514 (52.2%). implying that the female population dominates in the educational institutions.

This study revealed that out of 425 respondents, about half 50.6% of the student had a low level of knowledge. In contrast to a study conducted in a university in Saudi Arabia that the majority of the students had a good knowledge of hypertension and its associated risk factors<sup>10</sup>. This indicates that a substantial portion of the student population lacks essential information about hypertension, a prevalent health condition. Also this knowledge gap can lead to potential health risks, delayed diagnosis and poor self- management of hypertension in the future. In this study, male students had 48.9% low knowledge and 33.5% of high knowledge of hypertension. Female students had 51.9% low knowledge and 29.2% of high knowledge of hypertension, indicating that the male students had higher knowledge of hypertension than females. Similarly, in a study conducted among Saudi University students in Riyadh city on knowledge and its associated risk factor, Male students had 68.2%

poor knowledge and 31.1% Good knowledge of hypertension. Females had 70% poor knowledge and 30% good knowledge of hypertension, showing that the males had a higher knowledge of hypertension than females<sup>10</sup>.

In this study, the risk factors used were physical activity, sleep, consume alcoholic beverages, consume salty food, and stress, which were also recognized in a study on prevalence and risk factors associated with hypertension among adults in a rural setting: in the case of Ombe, Cameroon. The study revealed that more than one third of the students (36.5%) are perceived to be at low risk for developing hypertension, and more than one-quarter of the students (29.2%) are perceived to be at high risk of developing hypertension<sup>11</sup>. The study also revealed that about one- third of the students (33.6%) often engaged in physical activity. Which is in alignment with a study that reported there is a moderate level of physical fitness and physical activity among university students<sup>12</sup>. There is still a need to create awareness on the benefit of physical activity on the human health, to increase the percentage of students that engage in physical activity. Also, this study revealed that about one third 34.1% of the student never consume alcoholic beverages. In contrast, a study conducted among third year student attending high school in Varazdin comprising of 1352 students revealed that just 8.7% of the students do not drink alcohol at all<sup>13</sup>. Choosing not to consume alcohol as a student has several implications, which can lead to better health, improved academic performance, enhanced safety, social and emotional wellbeing etc.

The results of this study also revealed that the University has never organized health campaigns

or provided awareness on hypertension for her students. This lack of institutional emphasis on hypertension awareness suggests a potential gap in health education within the university setting signaling a need for the university to prioritize health education initiatives. This study also revealed when it comes to monitoring their blood pressure, only a meagre 1.9% of the student regularly monitor their blood pressure, underlining the importance of fostering a culture of regular health assessment among students. In the pursuit of knowledge of hypertension, about one-quarter of the students (28.2%) turn to internet website as their primary source of information, this underscores the digital age's role in disseminating health related knowledge. Surprisingly, 12.2% of the students exclusively rely on friends and family for information about hypertension, suggesting the impact of personal networks in knowledge transmission. Furthermore, there is a segment of students who rely on all the listed sources (Health care providers, doctors, nurses etc.), internet websites, books or magazines, family or friends) to gain a comprehensive understanding of hypertension, highlighting the multifaceted nature of knowledge acquisition in this domain. These findings underscore the diversity in approach to seeking information about hypertension among the student population.

A substantial 43.4% of the student body expressed their agreement with the presence of healthy meal options in the school cafeteria as a means to promote healthy dietary habits. Moreover, an additional 36.7% of students not only agreed but strongly agreed to this idea. This suggests that a significant portion of the student community sees the school cafeteria as a potential platform for encouraging healthier eating choices. Almost half of the respondents (42.4%) students strongly agreed on encouraging stress management practices reduce the risk of hypertension. This underscores their recognition of the link between stress and hypertension and the importance of addressing psychological well-being. Approximately half of the student population, constituting 50.8% strongly agreed to participate in health promotion campaigns conducted within the school. Their strong agreement implies a collective

enthusiasm for activities that enhance health awareness within the academic environment. 46.9% of students strongly supported the idea of regular blood pressure monitoring at health centers or clinics. This indicates a proactive approach to health management, with an emphasis on early detection of hypertension. The overwhelming consensus among students is evident in the fact that 92.9% believe that there is a clear need for more public awareness and education about hypertension management and prevention within the school, while 2.4% of students do not believe there is need for additional education and awareness regarding hypertension management and prevention in the school.<sup>1</sup>

### **Implication of Findings to Nursing and Healthcare Professionals**

The implications for nursing are substantial. Nurses can take the lead in developing and implementing educational campaigns, stress management programs, and initiatives to promote healthier lifestyles within the academic setting. Nurses have a significant role in developing and implementing educational campaigns within the university to raise awareness about hypertension, its risk factors, and prevention strategies. These campaigns can target both students and faculty to create a culture of health awareness. Also, nurses can advocate for stress management programs within the university. These programs can include stress-reduction techniques and mental health support services to help students better cope with academic and personal stressors. Nurses can organize health fairs or clinics within the university to offer free or low-cost blood pressure checks. This can help students become more vigilant about their health and detect hypertension early.

### **Limitation of the Study**

A limitation of this study is that only one institution was used and it limits its generalization. While the findings provide valuable insights into the knowledge of students at this particular institution, they may not be fully representative of the larger student population in different universities or

regions. The results may be influenced by the unique characteristics and demographics of FUNAAB, which could limit the generalization of the findings to a broader context. Also, these findings were based on self-report and it might be subject to social desirability bias, where respondents present views consistent with expectations in the society.

### Conclusion

The study presents valuable insights into the knowledge, risk factors, and attitudes of students at FUNAAB regarding hypertension. It highlights a significant knowledge gap and identifies risk factors such as stress and lifestyle choices. The majority of students express a strong desire for more health education and awareness initiatives within the university. The findings emphasize the need for proactive healthcare interventions within the academic environment to improve knowledge, promote healthy behavior, and prevent hypertension. These initiatives can be spearheaded by healthcare professionals, including nurses, who can play a pivotal role in enhancing the well-being of students.

### Recommendations

- The university should prioritize and invest in health education campaigns and awareness initiatives focusing on hypertension, stress management, and healthy lifestyles. These campaigns can include workshops, seminars, and digital resources.
- The university can also collaborate with food service providers to enhance the quality and variety of food options in the campus cafeteria. Promote the availability of nutritious and low-sodium meals to encourage healthier eating habits among students.
- The university should also ensure that the university's health services are readily accessible and well-publicized. Regular health check-ups, including blood pressure monitoring, should be readily available to students.

- The University should develop and implement policies that support a healthier campus environment, including guidelines for food vendors and the creation of stress-relief spaces on campus. These policies can significantly influence student health behaviors.
- Also, there should be a collaboration between academic departments, health professionals, and students to design and execute effective health programs.
- Students should actively engage in health education programs, workshops, and awareness campaigns provided by the university to enhance your knowledge of hypertension and overall health.
- Students should be encouraged to prioritize stress management strategies, such as regular exercise, mindfulness, and seeking support from university counseling services to reduce the negative impact of stress on your health.
- Students should also take advantage of the university's health services by scheduling regular check-ups, including blood pressure monitoring.

### Suggestions for Further Studies

A qualitative study may be conducted to explore in-depth on the knowledge, awareness and risk factors of hypertension among university students. Findings across universities should also be compared. And there is also a need for further research on this area in order to combat Hypertension in Nigeria

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