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Food habits and the prevalence of obesity and hypertension among the students of federal college of agriculture, Ebonyi State, Nigeria.

Los hábitos alimentarios y la prevalencia de la obesidad y la hipertensión entre los estudiantes de la universidad federal de agricultura, Estado de Ebonyi, Nigeria.

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ABSTRACT

Objectives: The specific objectives of this study are to describe the socioeconomics of the respondents, access the respondents' frequency of food consumption, determine the respondents'rate of foods consumed weekly, determine effect of respondents' food habit on obesity and hypertension prevalence and identify the factors influencing respondents' food habits in the study area.

Methodology: A sample of 238 participants (males and females) were randomly selected from 7 Departments in a descriptive cross-sectional survey. A semi-structured, validated and pre-tested self-administered questionnaire was used to generate data on socio demographic, food dietary, food frequency and anthropometric characteristics (Body Mass Index (BMI) and blood pressure).

Results: The study showed that 35.30% of the respondents were resident in the hostel, 35.7% were ≥28 years of age, 41.2% of their parents had secondary education, while 31.9% of them earned pocket money of N30001 -N40000 on monthly basis. About 37.4% ate three times daily, 41.2% ate depending on where they were 2.4% preferred eating their foods boiled, where 26.2% preferred fried foods. The respondents (34.9%) ate their lunch with friends. It was generally seen that a low percentage of them consumed alcohol beverages, beer was leading (29%) among all the listed alcoholic drinks. Noodles and bread were consumed more (50.0% and 43.2%), bambara groundnuts (*okpa*) (43.70%) and beans (30.25%) consumption. Yam and *garri/fufu* had 42.44% and 33.61% consumption respectively. Beef and frozen fish (52.52% and 48.32%) and water leaf and onions (53.78% and 51.68%) respectively. Over half of the consumers in fruits had other fruits not listed (66.81%) while Plums had 51.68% consumption. Groundnuts was 46.64%, whilst tigernuts, 39.08%. Stimulating drinks and alcoholic drinks were 39.92% and 32.77% respectively. Honey and sugar had low 26.89% and 20.19% respectively consumption among

sweeteners. Biscuits and tapioca among snacks were 51.26% and 42.89% respectively. Fried yam and chin-chin were 39.08% and 33.19% respectively. Over half of the percentage had normal BMI (66.8%) (18.5-25.5 kg/m2), while about half (54.8%) of the respondents had normal blood pressure (<120/<80 mmHg) followed by prehypertension (41.4%) (120-139.9/80-90mmHg). Moreover, the determinant to food habit on obesity and hypertension predisposition by the respondents were educational status and income. Also, the factors influencing respondents' food habits were availability of food, income of the person, food cost and educational status

Conclusion: There was no high negative impact of food consumption on the BMI and blood pressure of the students. Therefore, it could be deduced that the students feeding habits did not affect both their BMI and blood pressure.

Keywords: Non-communicable Diseases, Obesity, Food habits, Prevalence, Hypertension, Students.

RESUMEN

Objetivos: Los objetivos específicos de este estudio son describir la socioeconomía de los encuestados, acceder a la frecuencia de consumo de alimentos de los encuestados, determinar la tasa de alimentos consumidos semanalmente por los encuestados, determinar el efecto del hábito alimentario de los encuestados sobre la prevalencia de obesidad e hipertensión e identificar los factores que influyen en los hábitos alimentarios de los encuestados en el área de estudio.

Metodología: Se seleccionó aleatoriamente una muestra de 238 participantes (hombres y mujeres) de 7 Departamentos en una encuesta descriptiva transversal. Se utilizó un cuestionario autoadministrado semiestructurado, validado y preprobado para generar datos sobre características sociodemográficas, dietéticas alimentarias, frecuencia alimentaria y antropométricas (Índice de Masa Corporal (IMC) y presión arterial).

Resultados: El estudio mostró que el 35,30% de los encuestados residían en el albergue, el 35,7% tenían ≥28 años de edad, el 41,2% de sus padres tenían educación secundaria, mientras que el 31,9% de ellos ganaba dinero de bolsillo de N30001 -N40000 mensualmente . Alrededor del 37,4% comía tres veces al día, el 41,2% comía según el lugar donde se encontraba, el 2,4% prefería comer sus alimentos hervidos, donde el 26,2% prefería los alimentos fritos. Los encuestados (34,9%) almorzaron con amigos. En general, se observó que un bajo porcentaje de ellos consumía bebidas alcohólicas, la cerveza estaba a la cabeza (29%) entre todas las bebidas alcohólicas enumeradas. Fideos y pan fueron los más consumidos (50,0% y 43,2%), maní bambara (okpa) (43,70%) y frijoles (30,25%). Yam y garri/fufu tuvieron 42,44% y 33,61% de consumo respectivamente. Carne de vacuno y pescado congelado (52,52% y 48,32%) y hoja de agua y cebolla (53,78% y 51,68%) respectivamente. Más de la mitad de los consumidores de frutas tenían otras frutas no listadas (66,81%) mientras que las ciruelas tenían un consumo del 51,68%. El cacahuete fue el 46,64%, mientras que la chufa, el 39,08%. Las bebidas estimulantes y las bebidas alcohólicas fueron 39,92% y 32,77% respectivamente. La miel y el azúcar tuvieron un bajo consumo de 26,89% y 20,19% respectivamente entre los edulcorantes. Las galletas y la tapioca entre los snacks fueron 51,26% y 42,89% respectivamente. El ñame frito y el chin-chin fueron 39,08% y 33,19% respectivamente. Más de la mitad del porcentaje tenía un IMC normal (66,8 %)

(18,5-25,5 kg/m2), mientras que aproximadamente la mitad (54,8 %) de los encuestados tenía una presión arterial normal (<120/<80 mmHg) seguida de prehipertensión (41,4 %). (120-139,9/80-90 mmHg). Además, el factor determinante del hábito alimentario en la predisposición a la obesidad y la hipertensión de los encuestados fue el nivel educativo y los ingresos. Además, los factores que influyeron en los hábitos alimentarios de los encuestados fueron la disponibilidad de alimentos, los ingresos de la persona, el costo de los alimentos y el nivel educativo.

Conclusión: No hubo impacto negativo alto del consumo de alimentos en el IMC y la presión arterial de los estudiantes. Por lo tanto, se podría deducir que los hábitos alimentarios de los estudiantes no afectaron tanto su IMC como su presión arterial.

Palabras clave: Enfermedades No Transmisibles, Obesidad, Hábitos alimentarios, Prevalencia, Hipertensión Arterial, Estudiantes.

INTRODUCTION

Food habits refer to why and how people eat, which foods they eat, and with whom they eat, as well as the ways people obtain, store use and discard food (1). Individuals', social, cultural, religious, economic, environmental and political factors all influence people's eating habits (1,2). Non-communicable Diseases (NCDs) which include hypertension and obesity alongside their complications accounted for 27% of all deaths in Nigeria, in 2008 (3). Obesity increases the likelihood of various diseases, particularly heart disease, type 2 diabetes, obstructive sleep apnea, certain types of cancer, and osteoarthritis (4). A few cases are caused primarily by genes, endocrine disorders, medications, or mental illness (5). Percentage of the prevalence of obesity/hypertension among young adults in Ebonyi State was taken to be 14% and 31% respectively (6). It is important to appreciate factors associated with the disease so that a holistic approach can be taken in tackling the rising burden (7). Overweight and obesity is exceeding 50% in almost all the regions of the world (8). Nigeria is currently witnessing both demographic and epidemiologic transitions which could be some of the possible reasons why the prevalence of non-communicable diseases is increasing.

In a cross-sectional study by Ojofeitimi (9,10), in South Western Nigeria, found that 21.2% of their respondents were obese while others (11,12) found obesity in 21% and 28% of males and females respectively in a study of 146 middle –aged Nigerians. In Ghana and Republic of Benin, obesity was found among adults in 13.6% and 18% respectively (13,14). Hypertension is a "silent killer", since most people who have hypertension are not aware of the problem because it may have no warning signs or symptoms (2). The prevalence of hypertension varies across the WHO regions and country income groups. For instance, the WHO African Region has the highest prevalence of hypertension (27%) while the WHO Region of the Americas has the lowest prevalence of hypertension (18%) (15). A review of current trends shows that the number of adults with hypertension increased from 594 million in 1975 to 1.13 billion in 2015, with the increase seen largely in low- and middle-income countries(12). The causes and prevalence of obesity and hypertension vary from population to population based on individual life style, diet, cultural background, genetic make-up as well as the type of instrument used in their assessment (16). Obesity,

overweight and hypertension are major risk factors for a number of chronic diseases, including diabetes, cardiovascular diseases and cancer. Once considered a problem only in high-income countries, overweighed and obesity are now dramatically on the rise in low and middle – income countries (17).

Data has been collected from some high institutions in Nigeria in obesity and hypertension rates but none has been collected in Federal College of Agriculture, Ishiagu. The need to carry out research in this institution lies the fact availability of enabling environment for research, including sufficient Infrastructure, quality faculties, quality students in higher education, support of government to education and adequate and adequate funding for research that is necessary for innovation-driven society . The rising burden of obesity and hypertension related co-morbidities in developing countries including Nigeria, formed the basis for this study which sought the data of food habits (eating habit), prevalence of obesity and hypertension among the students of Federal College of Agriculture, Ishiagu, Ebonyi State, Nigeria.

Specifically, the objectives of this study are to

(i) describe the socioeconomics of the respondents,
(ii) access the respondents' frequency of food consumption,
(iii) determine the respondents'rate of foods consumed weekly,
(iv) determine effect of respondents;food habit on obesity and hypertension prevalence and
(v) identify the factors influencing respondents' food habits in the study area.

MATERIALS AND METHODS

Study area: Federal College of Agriculture, Ishiagu, Ebonyi State. The college is located between located at atitude $5^{0}55^{1}$ and $6^{0}57^{1}$N and Longitude $7^{0}37^{1}$ and $7^{0}8^{1}$E. It covers an area of 86sqkm2. The rainfall ranges from 1500-2500mm, Temperature of 28^{oc} – 38^{oc} and average relative humidity of 68%. The College of Agriculture Ishiagu is awarding National Diplomas(ND)and Higher National Diplomas(HND) in various agricultural progrmmesas. The college has a total enrollment of 2,500 during 2000 and 2021.

Research Design:The descriptive cross-sectional survey aimed at assessing the food habit and prevalence of obesity and hypertension among 238 students (males and females). The Departments involved were visited and the researcher assured the heads and students on privacy of information giving by them. The institution clinic was equally visited for medical personnel's approval and assistance.

Data collection: A validated and pretested self -administered semi-structured questionnaire information on demographic characteristics as well as socio-economic characteristics of the students' food habit and prevalence of

obesity and hypertension by the ethical council of the college.. Anthropometric measurements of height and weight of the respondents were obtained to the nearest 0.1kg using a portable bathroom scale (Hanson Emperors model H89). Height was measured to the nearest 0.1cm using a wooden heightometer Body Mass Index (BMI) was calculated by dividing the weight measurement with the square of the height in meters. Omron digital automated blood pressure monitor (OADBPM) (model: M2/ HEM- 7121-E) was used to measure the blood pressure.

Data Analysis: Descriptive statistics such as frequencies, percentages and mean was used to objectives I,, ii, iii and iv, while multiple regression was used to address objective iv.

Model Specification Multiple Regression

Four functional forms of the multiple regressions were employed in order to select the one that has provided the best fit. The functional forms tried were:

Linear function

$Y = b_0 + b_1 x_1 b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + ei$ ……. (1)

Double log function:-

$\ln(y) = \ln b_0 + b_1 \ln x_1 + b_2 \ln x_2 + b_3 \ln x_3 + b_4 \ln x_4 + b_5 \ln x_5 + ei$ …… (2)

Semi log

$Y = \ln b_0 + b_1 \ln x_1 + b_2 \ln x_2 + b_3 \ln x_3 + b_4 \ln x_4 + b_5 \ln x_5 + ei$ …… (3)

Exponential function

$\ln Y = b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + ei$…… (4)

The choice of the best functional form was based on the magnitude of the R^2 value, the high number of significance, size and signs of the regression coefficients as they conform to *apriori expectation*.

The equation can be explicitiy represented as

$Y = b_0 + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + e$ …… (5)

Where:

Y = value of cocoyam output (~~N~~), x_1 = gender (Dummy), x_2 = Age (years),

x_3 = Income (N), x_4 = Health Condition(Dummy), x_5 = Experience (Years) and x_6 = Management practices(Dummy)

$x_1 – x_5$ = coefficient of the parameters to be estimated, while e_1 was the error term and b_0 was the coefficient.

RESULTS

In table 1, 35.30% of the respondents lived in the hostel and 30.60% lived off campus with friends.

Table 1: Demographic characteristics of the respondents

Variables	Frequency	Percentage
Place of Residence		
At home	48	20.20
Hostel	84	35.30
Off campus with friends	73	30.60
Off campus alone	33	13.90
Age Range		
16 – 19	78	32.80
20 – 23	21	8.80
24 – 27	54	22.70
≥28	85	35.70
Marital Status		
Single	176	73.90
Married	62	26.10
Average monthly income		
<5000	18	7.60
5001 – 10000	20	8.40
10001 – 20000	30	12.60
20001 – 30000	69	29
30001 – 40000	76	31.90
40001 – 50000	25	10.50
Total	238	100

Source; Field Survey, 2021

The 35.70% of the respondents were in the 28+ years age range while 32.80% were in 16-19 years age range. Majority of the respondents were single (73.9%) while 26.1% were married (26.1%). Those who earned 30,000 – 40,000 had 31.90%, 20,001 – 30,000 had 29% while a minute value earned less.

Also, 41.60% of the respondents ate at school and 35.30% ate before going to school. In this study, a high percentage (85.70%) of the students had breakfast first thing in the morning. A percentage (40.80%) of the total sample size admitted to skipping meals at one time or the other in the day. More than half (59.20%) of the respondents did not skip any meal while (41.20%) said their preference 'depends on where they are'. Lunch was the most (34.90%) consumed meal among the variables and were eaten with friends where a low percentage (28.20%) took their breakfast. Half of the respondents (50.40%) preferred their foods boiled/steamed, 26.10% preferred their fried foods with 14.30% who preferred roasted foods. It was generally seen that a low percentage of them consumed alcohol beverages, beer was leading (29%) among all the listed alcoholic drinks.

Table 3 presents the frequency/rate of foods consumed weekly thus, Noodles and bread were consumed more (50.0% and 43.2%), bambara groundnuts (*okpa*) (43.70%) and beans (30.25%) consumption. Table 2 revealed

that 37.40% of the respondents ate 3 times (thrice) in a day while the others had small fractions.

Table 2. Frequency of food consumption

Variables	Frequency	Percentage (%)
How many times do you eat in a day		
Once	37	15.50
Twice	41	17.20
Thrice	89	37.40
Four Times	47	19.70
Others	24	10.10
When do you normally eat breakfast?		
1st Thing in the morning	21	8.80
Before Going to school	84	35.30
At School	99	41.60
Not Eat Breakfast	13	5.50
Others	21	8.80
What meals do you normally skip in a day?		
Breakfast	124	52.10
Lunch	48	20.20
Dinner	18	7.60
Breakfast /Lunch	16	6.70
None	32	13.40
Why do you skip this meal? 4.13		
I have no time/woke up late	41	17.20
No appetite	42	17.70
No money	14	5.90
None	141	59.20
How do you prefer eating your food prepared?		
Alone	54	22.70
With Friends	24	10.10
My Family	20	8.40
Depends on where I am	98	41.20
Others	42	17.60
How Do You Prefer Your Food Prepared?		
Boiled/ Steamed	120	50.40
Fried	62	26.10
Roasted	34	14.30
Baked	12	5
Others	10	4.20

Source; Field Survey, 2021

Table 3: Percentge of foods consumed weekly

	Variables	Rate of consumption			Total
		1-2	3-5	6-7	
Cereals	Rice	49(20.59%)	122(51.26%)	67(28.15%)	238
	Maize	128(58.78%)	65(27.31%)	45(18.91%)	238
	Bread	40(16.81%)	95(39.92%)	103(43.28%)	238
	Pap	111(46.64%)	68(28.57%)	59(24.79%)	238
	Noodles	48 (20.17%)	71 (29.83%)	119(50.0%)	238
Legumes	Beans	42(17.65%)	124(52.10%)	72(30.25%)	238
	Bambara groundnut	82(34.45%)	52(21.85%)	104(43.70%)	238
	Oil beans	155(65.13%)	34(14.29%)	49(20.59%)	238
	Moin moin	65(27.31%)	123(51.68%)	50(21.01%)	238
	Soy bean	137(57.56%)	67(28.15%)	34(14.29%)	238
	Others	102(42.86%)	58(24.40%)	50(21.01%)	238
Roots & tubers	Garri/Fufu	55 (23.11%)	103 (43.28%)	80 (33.61%)	238
	Yam	46 (19.33%)	91(38.24%)	101(42.44%)	238
	Sweet potatoes	54 (22.69%)	34 (14.29%)	10 (4.20%)	98
	Coco yam	19(7.98%)	21(8.82%)	0(0.0%)	40
	Three leave yams	0(0.0%)	16(6.72%)	0(0.0%)	16
Meat /Meat products	Beef	33(13.87%)	80(33.61%)	125(52.52%)	238
	Goat meat	14(5.88%)	10(4.20%)	4(1.68%)	28
	Bush meat	51(21.43%)	14(5.88%)	21(8.82%)	86
	Pork	10(4.20%)	0(0.0%)	0(0.0%)	10
	Hides & skin	76(31.93%)	67(28.15%)	95(39.92%)	238
	Offals	54(22.70%)	78(32.77%)	23(9.66%)	155
	Chicken	3(1.26%)	5(2.10%)	0(0.0%)	8
	Snail	5(2.10%)	0(0.0%)	0(0.0%)	5
	Dry fish	57(23.95%)	86(36.13%)	95(39.92%)	238
	Fresh fish	8(3.36%)	16(6.72%)	0(0.0%)	24
	Frozen fish	78(32.77%)	45(18.91%)	115(48.32%)	238
	Termite	6(2.52%)	0(0.0%)	0(0.0%)	6
	Cray fish	73(30.67%)	79(33.19%)	86 (36.13%)	238
	Egg	57(23.94%)	45(18.91%)	57(23.94%)	159
	Others	0(0.0%)	32(13.45%)	12(5.04%)	44
Milk/Milk products	Evaporated milk	58(24.37%)	93(39.08%)	87(36.55%)	238
	Condensed milk	4(1.68%)	1(0.42%)	0	5
	Powdered milk	58(24.37%)	91(38.24%)	89(37.39%)	238
	Ice cream	45(18.91%)	10(4.20%)	22(9.24%)	77
	Yoghurt	23(9.66%)	12(5.04%)	13(5.46%)	48
	Others	13(5.46%)	11(4.62%)	0(0.0%)	24

Source; Field Survey, 2021

Yam and *garri/fufu* had 42.44% and 33.61% consumption respectively. Beef and frozen fish (52.52% and 48.32%).

Water leaf and onions had 53.78% and 51.68% respectively. Over half of the consumers in fruits had other fruits not listed (66.81%) while Plums had 51.68% consumption. Groundnuts and tigernuts had 46.64% and 39.08% respectively. Stimulating drinks and alcoholic drinks (39.92% and 32.77% respectively). Honey and sugar had low (26.89% and 20.19%) consumption among sweeteners. Biscuits and tapioca among snacks (51.26% and 42.89% respectively). Fried yam and chin-chin ((39.08% and 33.19% respectively) as shown in Table 3. Majority of the respondents were normal weight (66.8%) (Table 4).

Table 4: Obesity and hypertension indicators

Variables	Range (kg/m^2)	Frequency	Percentage
BMI classification			
Underweight	< 18.5	10	4.2
Normal	18.5 – 24.5	159	66.8
Overweight	25 – 29.9	48	20.2
Obesity class I	30.0 – 34.9	16	6.7
Obesity class II	35.0 – 39.9	3	1.3
Obesity class III	> 40.0	2	0.8
Blood pressure rates			
	(mmHg)		
Normal	< 120	130	54.80%
Prehypertension	120 – 129.9	98	40.49%
Stage I hypertension	130 – 139.9	8	3.40%
Stage II hypertension	>140	2	0.40%

Source; Field Survey, 2021

In contrast 4.2% were underweight, 20.2% were overweight, 6.7% were class I obesity, 1.3% had class II obesity while 0.8% had class III obesity. The results revealed that Body Mass Index had the high percentage as normal (66.8%) (18.5-25.5 kg/m^2). More than half (55.60%) of the respondents' blood pressure was normal and pre-hypertension was 40.49%

Table 5 reveals that Linear log analysis was chosen as lead equation based on highest significant variables, more variables in line with apriori expectation and highest coefficient of determination. The coefficient of multiple determination was 0.8056, suggesting that 80.6% in the variation of dependent variable was accounted for by the included independent variable, while the remaining 19.4 were due to error term. The value of F-value was 0.686, indicating the goodness of fit of the model. Also, the coefficient of educational status and income of the person were significant at 1% and 1% probability level respectively, while the coefficient of age was significant at 1% and for coefficients of health condition, management practices and religion were10% level respectively.

Table 5. Results of Estimated Multiple Regression Function

Variable	+Linear	Exponential	Double Log (CobbDouglas)	Semi Log
Constant	9.664 (4.766)***	6.646 (3.229)***	6.074 (3.741)***	3.181 (3.177)***
Gender	1.404 (2.007)	0.061 (2.022)*	0.165 (1.201)*	0.732 (1.007)*
Age	0.610 (-3.787)***	0.667 (0.571)	0.958 (2.021)**	1.061 (0.441)
Education	0.413 (3.266)***	0.087 (2.177)**	0.076 (3.661)***	2.104 (2.314)**
Income	0.922 (3.024)***	0.488 (0.056)	0.677 (1.272)*	-0.475 (2.303)**
Health Condi.	0.611(-1.015)*	0.532 (3.033)***	0.437 (0.002)	-0.321 (0.317)
Magt Practice	0.145 (-1.721)***	0.140 (0.223)	0.702 (1.399)*	-0.355 (1.319)*
Experience	0.872 (0.621)	0.502 (4.115)***	0.600 (0.375)	-0.401 (0.713)
Religion	0.145 (-1.721)***	0.145 (-3.721)***	0.145 (-3.721)***	0.145 (0.721)
F Ration	0.453	0.409	0.356	0.389
R^2	0.8056	0.5432	0.5900	0.4487

Source: Field Survey, 2021

***, **, * significant at 1.0%, 5.0% and 10.0% levels of probability respectively

The figure in parenthesis is the t-ratio

The major constraints to attainment of food habit were availability of food (92.44) and ranked first, followed by income of the person (85.29%), food cost(84.03%) and educational status(83.10%) in that order.

Table 5; Factors influencing respondents' food habits

Variables	Frequency	Percentages	Ranking
Cultural factor	190	78.83	4th
Poor knowledge	135	56.72	7th
Geographic Location	172	72.27	6th
Availability of food	220	92.44	1st
Technology	182	76.47	5th
Educational status	198	83.10	3th
Income	203	85.29	2nd

*Multiple Responses

Source Field Survey; 2021.

DISCUSSION

Many of the respondents stayed the school hostel inside campus making it more difficult for them to cook freely even if they wished (18,19). A greater number of respondents were in 28+ age range. This makes it easier to access their food patterns, BMI and blood pressure rate because they are now young adults. The finding of Arnette (20,21) concurred to above assertion. He reported that age of emerging adulthood corresponds to probably the first-time young adults will have to take responsibilities of their own welfare including their feeding habit Also, the majority students were financially comfortable and taken care of their regular meal pattern (Table 2) The finding of (23, 24, 26) crossponded to above statement. They argued that regular breakfast consumption among students is important for sufficient energy intake to overcome fatigue due to busy (daily) learning schedule. As well, a good

population ate in school. The half of the respondents who skipped breakfast were attributed to lack of time to prepare breakfast. Meal skipping is an unhealthy practice which deprive the body of necessary nutrients and energy needed for optimal performance (27,28,29). Skipping of meals was a common eating habit among urban Nigerian adolescent schoolgirls (30). This is not surprising, as studies from several other developing countries have reported similar findings (31) where there is a strong indication that breakfast was the most frequently skipped. The study confirmed that breakfast is an important indicator of a healthy lifestyle but a cumulative percentage (52.10%) of the students skipped it at one time or the other within the week (28,32). This is not a positive attitude (33) because the brain makes use of the blood sugar (glucose) stored up overnight and if breakfast is skipped, by mid-day, the sugar gets used up and people grow tired and irritable, also students who skip meals are lazy, lose weight, often wake late and miss lectures. Skipping breakfast create a state of hunger, which can diminish the ability to learn and concentrate in class (34,35). Although it was noticed that the primary reason why undergraduates skipped breakfast was lack of time. Breakfast is important in the overall health of the undergraduates and can improve performance and participation during studies. This finding of those who had breakfast daily in this study was higher in comparism to a previous study (23). The result indicates that a good number feed at least three times a day and may also be attributed to sufficient finance. More the average preferred eating boiled or steamed foods which is healthy (24,36). Table shows that a good number of the respondents consumed these cereals most frequently (bread, noodles, pap, and rice), legumes (beans, bambara beans, others legumes), roots and tubers (garri and yam), meat and meat products (beef, hides and skin, dry and frozen fish, cray fish and eggs), milk and milk products (evaporated and powdered milk), vegetables (*okro*, onions, eggplant, carrot, bitter leaf, *ugu*, water leaf, spinach/green, cucumber and cabbage), fruits (cashew, mango, orange, banana, sour sop, plum, apple, lime, grape, African star apple, avocado pear, *icheku,* local pear, others), nuts and seeds (groundnuts, tiger nuts), beverages (water, carbonated beverages, malt group, alcoholic drinks and stimulating drinks), sweeteners (sugar and honey), snacks (meat pie, biscuits, cakes and tapioca) and fried foods (egg roll, buns, chin chin, *akara* and fried yam). The low percentage consumption fried foods could be attributed to their low BMI and more normal blood pressures (37).

The normal weight agrees with findings (23,24) that majority of the students were of normal weight. The high normal weight of the respondents could be as a result of their acceptable feeding patterns and consumption). However, the overweight value suggests that in the future, these overweight students could become obese if appropriate measures and precautions are not taken (38,40). The highest rate of normal blood pressure could be a result of their physical activities in an agricultural institution or exercises (40), although the percentage of overweight respondents is still appreciable. This is similar to the finding of Saeed *et al*. (2013) that, among students 10.6% were overweight (BMI of 24.9 to 29.9) and 2.2% were obese (BMI of >30) while the rest had a normal BMI (18.5-25.5 kg/m^2). However, their feeding pattern was not below average as indicated by the results. The results also revealed that blood pressures rates had normal of more than average among respondents (<120/<80 mmHg). A variety of studies have been implemented to explain the correlations between dietary patterns and hypertension, cardiovascular diseases, stroke and cancer (41,42). These studies have found that dietary patterns characterized by

high intake of vegetables, fruits and fish were inversely associated with diseases, whereas dietary patterns characterized by high intake of red meat, processed meat, refined grains and fried foods were associated with increased risk. However, the result of the table suggested that there is a positive relationship between BMI and Blood pressure as revealed by the value of BMI. Therefore, obesity and hypertension are not prevalent among the students of Federal College of Agriculture, Ishiagu Ebonyi State.

Table 4 shows that the coefficient of age was negative and statistically significant at 1% probability level This implies that there is declining in consumption of certain food such as red meat with old age. The finding of (23), who reported that nutrition or diet choice is indispensible in contributing to the health of older adults and the probability of active and healthy aging. However, (32) finding was in contrary. They opined that young people body can easily to accept and digest certain foods without causing damage. Furthermore, at an early age, taste and familiarity influence behaviour towards food. Also, the household income coefficient was negative and statistically significant at 1 % probability level. This implies that, that lower-income group of people tend to make cheaper food choices, which is often meager and monotonous, while rich ones often affords very expensive foods. Result confirms findings of (21) affirmed that meat consumption for instance is comparable between affluent and poor households in terms of quantity, but lower-income families tend to choose cheaper and fattier cuts. Besides, the education level coefficient was positive and statistically significant at 1 % alpha level. Several studies (13, 19, 37) concurred to the assertion. Education influences food choice by facilitating or constraining the ability to understand the information communicated in nutrition education messages or on food labels (31). As well, (37) provides you with the relevant skills needed to prepare your food well.

As well, religious and ancestral beliefs had a negative and significant influence on diet habit at the 10% level. Some spiritual and ancestral practices prohibit the consumption of certain food products, for instance pig meat is prohibited in Islam and Jewish, some Christian domination such as Methodists and Anglicans forbids drinking of alcoholic drinks but not among Catholics etc. The finding of (28, 34) synchronizes with above statement. Additional, health of household head coefficient had positive and significant impact at the 10% level. This finding suggested that for instance, according to (19) choosing a diet that excludes reducing meat consumption may benefit the body. In addition, the excessive consumption of animal products leads to a nutritional imbalance in the diet. Therefore, it can contribute to overweight and diseases such as hypertension, cardiovascular diseases, and type 2 diabetes if it is chronic(26)

Table 5 shows that 92.44% of the respondents reported on problem of availability of food affected food habit and ranked first. Most often foods can grow only in certain types of geographic locations and this determines the foods available in such locations. Even though food may be imported from other countries could form staple food for some people, especially affluent and unhealthy people (17, 28). Also, 85.29% of the sampled people reported on income as determinant of food choice and ranked third in order of importance Economic status still dictates what foods you eat and how you eat them Indeed, income strongly correlates with food preference, an

essential indicator influencing food purchasing and processing method (18). More so, educational status was reported by 83.10% sampled people. Higher educational levels and may be more health conscious and have healthier lifestyles compare to those with less educational status (25, 29). Education, as reported by (14) also gives you consumer information which would help you to buy food wisely from the market place. Education helps you to form certain food habits and change others (33).

Besides, 78.83% of the respondents complained about cultural habits.Cultural habits, however, have been shown to change, for example, when individuals move to a new country and adopt the food habits of the local culture (24).

As conclusion and Recommendation, this work evaluated food habits and the prevalence of obesity and hypertension among the students of Federal College of Agriculture Ishiagu. Ebonyi State. The student's food habits were based on the data collected from the study. Food consumption frequency revealed that few of the variables in the food groups were consumed averagely. Majority of them had normal (18.5-24.5 kg/m^2) Body Mass Index and normal (<120/ <80mmHg) Blood Pressures. However, the result so far on this work could be attributed to environment (College of Agriculture) where the students are compulsorily involved in farming activities and also have access to consuming some food products from the farm. The community and state are also known for Agriculture, hence the findings. Moreover, the determinant to food habit on obesity and hypertension prevalence by the respondents were educational status and income. Also, the factors influencing respondents' food habits were availability of food, income of the person, food costand educational status.

Among the recommendations proffered are the is need for a DASH diet that is healthy-eating plan designed to help treat or prevent high blood pressure (hypertension). The DASH diet includes foods that are rich in potassium, calcium and magnesium. These nutrients help control blood pressure. The diet limits foods that are high in sodium, saturated fat and added sugars. Additionally, there is need to expose the respondents to health education, as this will help to make informed food choices which will provide the necessary nutrients for a healthy body at a minimum cost. As well, there is need to enhance the students' pocket money by their gurdians in order to enhance their varieties of food purchases for healthy livings.

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