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Blood pressure profile and dietary intake of adults in rural community in rivers state, Nigeria

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Abstract
This study assessment the dietary pattern and prevalence of hypertension among adults in Obeama-Asa in (rural community) in Oyigbo Local Government Area of Rivers State. Two hundred adult from Obeama–Asa within the age range of 20 to 61 years were randomly selected for the study within the Christian church in the community. Information on the socio-economic characteristics food preference and consumption patterns were obtained from the questionnaire. Anthropometric measurements of height and weight were taken according to standard procedure. Blood pressure were determined using standard methods. Data collected were analyzed with the use of statistical package for social sciences version is using frequency, percentage distribution means of standard deviation. The results showed that sixty-five percent were hypertensive. Anthropometric assessment showed that only 22.0% were of normal body mass index (BMI) the rest was overweight (44.0%) and obese (33.0%). In conclusion, high blood pressure and overweight were prevalent in the rural community.

Keywords: hypertension obese overweight, nutritional status, diabetes mellitus

Introduction
The concept of prevalence of hypertension is a serious threat and an important public health issue. Hypertension is one of the most non-communicable disease affecting a large percentage of adult in rural areas (Oraziouo, 2005). More, recently studies have revealed that hypertension is on the increase with estimated prevalence rates ranging 20% and 40% in Nigeria depending on the studied state and communicate (Atakite, *et al*; 2015). The prevalence of hypertension could be linked with lifestyle factors such as dietary, smoking, harmful use of alcohol low physical activity, high cholesterol, etc. (Akinlua *et al*, 2015).
According to Chobanian, *et al*, (2003), hypertension is a transitory or sustained elevation of systematic arterial blood pressure to include cardiovascular demand or other adverse consequences. Hypertension is a heading risk factor and primary, contributor to cardiovascular disease cardiovascular disease is not a single disease but a complex of disease of varied causes (Wokome, and Obse Alasio 2011) some of the recognized causes of defect and effect associated with infections disease.
The upsurge in hypertension have been attributed to poverty globalization and the adoption of western dietary patterns which was facilitated by advertising for consumption of unhealthy foods and lack of physical activity, even in the rural areas (Joiner, 2006) World Health Organization (WHO) (Thiam, *et al*, 2006) [7] had attributed to change in dietary pattern and subsequent increase in non-communicate cardiovascular disease in West Africa to be the result of abandonment of traditional foods due to urbanization and changes in lifestyle as a result of economic development.
The present stay was undertaken to investigate the dietary pattern and prevalence pretension in a rural setting in Rivers State, Nigeria.

Materials and Methods
Study Area: The cross sectional study was conducted in Obeama-Asa Christian community in Oyigbo Local Government Area are Rivers State, Nigeria.

Subjects: A total of 200 adult were used for the study who have lived in the community for at least five years.

Data collection: A semi-structured validated questionnaire was used to collect information on demographic and socio-economic characteristics food preferences and consumption patterns.

Anthropometric Measurements: Anthropometric measurements of height and weights were taken on all subjects according to the standard procedure (Jelliffs). Weight was measured to the nearest 0.1kg on a portable multipurpose beam balance. The measurement was done without shoes. Height was measured to the nearest 0.1cm with a portable height gauge without shoes. The body mass index was calculated from the weight and height measurement and classified according to WHO, 2005.

Blood pressure Measurement: Blood pressure were measured on all subjects using mercury sphygmomanometer.

Data Analysis: Data collected were analyzed using statistical package for social sciences, simple percentages, means and standard deviations were analyzed.

Results
Table 1 presents the socio-economic status of the participants only 7% of the participants were older adult (61-70yrs), while 28% were made adults 951-60years) and most of them, 65%

were young adults. The participants were Christians with various denominations as shown in the Table 1, most (76.0%) of the participants were males. While 24% of the participants were females. About 56.56% of the participants were married, while 39% were single.

Table 1: Socio-demographic characteristics of the participants

Variable	Frequency	Percentage
Age in year		
20 – 40	131	65.5
41 – 60	55	27.5
61 – up	14	7
Sex		
Male	152	76
Female	48	24
Marital status	78	39
Married	113	56.5
Widowed	8	4.5
Occupation		
Civil servant	20	10.0
Farmer	50	25.0
Fisshery	10	5.0
Trader/artistry	105	52.5
Religious service		
(pastors, etc)	15	7.5
Education		
No formal education	60	30
Primary education	70	35
Secondary education	45	25.5
Tertiary	25	12.5
Religon		
Christian	200	100

Table 2: Presents the source of food meal consumption and snack consumption

Variable	Frequency	Percentage (%)
Source of food		
Garden/form	110	59.0
Relatives	7	3.5
Market /form	83	41.3
Daily meal consumption		
Once	65	32.5
Twice	50	30.0
Thrice	50	25.0
More than thrice	25	12.5
Snack consumption	8	4.5
None	45	22.5
Fruits	10	5.0
Vegetable	9	4.5
Beverage (coke/sprit etc)	82	41.0
Jouice	8	4.0
Calle/chin-chin/biscuit	54	27.0

Majority (55.0%) of the participants obtain their food items from the garden and form, white about 83.0% procured their goods items from market/farm. The snacking pattern shows that 41.0% consumed beverages while 77.0% consumed cable/ biscuits. A total of 25.0% of the respondents ate three meals Daily while 12.5% claimed to eat more than three times daily.
Table 3 shows the meal consumption pattern of the participants. The table shows that 25.8% skipped breakfast 25.0% skipped lunch and 50.0% skipped dinner. It also shows that 35.0% fish while 17.55 ate meat fish (35.0%)

Table 3: Consumption patterns of the subjects

Variable	Frequency	Percentage
Meal skipping		
Breakfast	50	25.0
Lunch	50	25.0
Dinner	150	50.00
Favorite foods		
Fish	70	35.0
Meat	35	17.5
Fruit/vegetable	25	12.5
Fatty foods	10	5.0
Sugary foods	5	2.5
Starch foods	30	15.0
Others	25	12.5
Consumption of salt of table?		
yes	150	75.0
No	50	25.0

and meat (17.5% were among the most favourite foods. Salt was consumed at table by 75% of the participants.
Over half of the subject (60.0%) consumption alcoholic beverages as shown in table 4. Majority of them (85.0%) did not smoke at the table 4 most of them (65.0%) were engaged in active activity.

Table 4: Lifesyle profile of the subjects

Alcohole Consumption	Frequency	Percentage
Yes	120	60.0
No	80	40.0
Smoking status		
Yes	30	15.0
No	170	85.0
Physical activity		
Yes	70	35.0
No	130	65.0

In table 5, the anthropometric parameters shows that 22.0% of the participants had normal blood pressure, while 44.0% were overweight and 33.0% were obese. The participants blood pressure readings showed that 35.0% were of normal blood pressure. On the other hand, more than 34.0% had abnormal reading, that is had high blood pressure reading.

Table 5: Body mass index and blood pressure

Variables	Frequency	Percentage (%)
Body mass index (BMI)		
Normal (18.5 – 24.99kg/m^2)	44	22.0
Overweight (25-29.9kg/m^2	88	55.0
Obese (>30kg/m^2)	66	37.0
Blood pressure		
Normal (120/80	70	35.0
High normal (139/89)	68	34.0
High blood pressure 140/90	45	22.5
High Blood pressure (stage 2) 180/110	17	8.5

Discussion

The result of this study showed that most of the participants were males 976.0%. Only 7.0% of the participants were aged 61 and above. All the participants in these study were Christians. This is attributed to the location of the study area which is a community in the South-south Nigeria, which are mainly Christians Majority of the participants (56.5%) were marred. This is expected in a rural setting as Oyegbo local government. And with heavy forming occupation in an African setting, families help each other in farming as a means of livelihood. A good parentage (52.5%) of them were engaged in trading to complement the farming income. Education, their standard were low based on the percentage of those that never attended school (30.0%) and those that attended primary school education (35.0%).

The daily frequency of meal showed that most (25.0% could afford three square meals. This suggest the constrain in affordability of foods, which could affect their nutritional status. A good percentage of the (35.0%) consums fish and meat (17.5%). The participant's consumption of fishes and meats was encouraging as nutrients could be obtained in reasonable quantities. The percentage (50.0%) that skipped dinner could be due to their job and religious activities as they were all Christian with numerous religious activities.

The subjects' consumption of alcoholic beverage (60.0) showed that an appreciable proportion indulge in alcohol consumption. This is not good because alcohol interferes with metabolism and impairs health and nutrition (Wlutney and Rolfes, 2008). It is encouraging that very few of the subjects include in cigarette smoking. This is because cigarette smoking has been documented to be harmful/to health, causing thousands of people suffer from concern and diseases of the lings and reparatory systems (whitney and Bolfes, 2008). The respondents participated in active work life (65.0%) due to their as active formers and traders. The nature of the business of the subjects is time demanding and might not give then enough time to go for routine medical checkups. In addition the rural setting did not provide opportunity for phypicans office.

The high prevalence of overweight and obesity among the study population could trigger diabetes in future since overweight and obesity are risk factors to diabetes mellitus. As the degree of overweight and obesity increase, the blood pressure also rises as shown in this study, this rise in blood pressure if not controlled lead to hypertension. This agrees with the findings of Ofuya. The high prevalence of high blood reading observed in this study could be attributed to low level of eduation of the respondents, who were farmers and petty traders. The high occurrence of overweight which itself could have led to high prevalence of hypertension may be due to life style (poor diet and drinking) lack of proper dietary advice diet with high calorie food and lack of knowledge about the possible etiology of essential hypertension and its consequences to human health.

Conclusion

The study has revealed that there is an increasing prevalence of high blood pressure and overweight among the respondents. The high prevalence of high blood pressure seen in the rural setting in Rivers State Nigeria, encourages regular screening with adequate health campaign and adequate management in order to reduce the incidence of hypertension and encourage healthy eating/habit.

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