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Anthropometric Indices, Nutritional Status and Feeding Habits of Pensioners In Mbaise, Imo State

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ABSTRACT

This study aimed at investigating the anthropometric indices, nutritional status and feeding habits of pensioners in Mbaise, Imo State. The study employed a cross sectional survey design. The total population comprised of 5,850 pensioners (retirees) from the three (3) local government areas in Mbaise. The sample size of 220 subjects was determined using Yaro Yamane sampling method. A structured and validated questionnaire was used to collect information on socio-economic data, anthropometric characteristics, nutritional assessment and dietary diversity of the respondents. Weight, height, hip and waist circumference measurements were assessed using standard methods. Data was expressed as frequency and percentages and was analyzed using the Statistical Package for Social Science (SPSS) version 20.0. Chi-square was used in determining significant associations. Significant difference was set at P <0.05. The findings of the data collected revealed that women were higher in number, 8.2% were single 69.5% were married, 14,5% were widows while 72.3% were divorced. Clinical and health characteristics of subjects showed that 52.3% have been diagnosed with diabetes, 54.1% had no concomitant illness, 35.9% were hypertensive as 47.7% had not been diagnosed of any ailment. The anthropometric indices of respondents with their respective BMI showed that 73.3% were underweight, 45.9%were normal, 25.9% were overweight, 20.9% were obese. The correlational analysis of BMI indicated that there was a significant difference in the weight and height of the respondents at ($p<0.05$). Based on the findings of this study, it is recommended amongst others that there should be sufficient attention to health education by health care practitioners and motivation for health education services; by passing the right information to the public concerning the implications of poor feeding at old age.

Keywords: Anthropometric indices, Feeding habit, Health, Nutritional status, Pensioners, Nigeria

1. Introduction

Ageing in humans refers to a multi-dimensional process of physical, psychological and social change (Kunzmann et al., 2010). Ageing is an important part of all human societies reflecting then biological changes that occur but also reflecting cultural and societal convention. Roughly 100,000 people die each day to age related causes (Ponnappan and Pannappan, 2011). People do not become old or elderly at any specific age. Traditionally, age 65 has been designated as the beginning of old age. But the reason was based in history not biology (Acharaya, 2008). Many years ago, age 65 was chosen as the age for retirement in Nigeria, the first notion to establish a retirement age for most people in development societies, although this tradition is changing (Morley, 2010). The nature of the ageing process has been the subject of considerable speculation. Accumulating evidence now indicates that the sum of the deleterious free radial reactions going on continuously throughout the cells and tissues constitutes the ageing process or is a

major contributor to it. (Kinght et al., 2010). Rather, there is usually anemia or scurry disease (Kinght et al., 2010). Although malnutrition has been largely eliminated from most sections of our population, it is occasionally found amongst the pensioners.

Pensioners are individuals who have stopped work completely or decides to leave the labour force after attaining a certain age range usually 60 years and above or one who has worked for certain number of years stipulated by the government for retirement. It has been identified to have a significant negative impact on the socioeconomic status of most and old individuals in Nigeria. Previously life expectancy was how and the absence or delay of benefit meant that most workers continued to work until they were no longer able or until death (Obioma 2010). In Nigeria are faced with many thought provoking and emotional disturbance which may be due to delay or denial of their retirement benefits after an active services in public and private sector. It is not known what effects sedentary lifestyle coupled with stress of retirement verification exercise has on pensioners (Obioma, 2010).

Anthropometry is the measurement of physical attributes of human beings, such as head width, length of little finger, length of torso, etc. Anthropometry includes measurements of body weight (estimated dry weight for dialysis patients), height, triceps skin fold, abdominal circumference, calf circumference, mid-arm muscle circumference, elbow breadth, and sub-scapular skin fold. These values provide information about the distribution of body fat and skeletal muscle mass, and over time, identify nutritional deficiencies or excesses in calorie and protein reserves compared with standardized percentiles (Jeffery, 2001). One approach of studying nutrition is to assess nutritional status on the basis of anthropometric indices; these are based on physical body measurement such as height or weight (related the age and gender of individual), from anthropometric perspective. Food habits refers 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. Individual, social, cultural, religious, economic, environmental, and political factors all influence people's eating habits. Food habits among most of old people are unwell balanced due to environmental .and financial challenges (Okeke, 2012).

Nutritional status of the pensioners is paramount to the society, as people get older their functional abilities are reduced and those affect the need of proper food intake in the elderly increasing the risk of malnutrition. Therefore, neglecting nutritional care among the elderly can affect their health, living conditions and quality of life, hence to ensure successful aging and reduce the affect of disease as well as disabilities in the elderly, good nutritional practices need to be implemented by health care professional for instance dietary recommendations, culturally sensitive foods, nutrition services, physical activities and supportive care need to be carried out (Obineke, 2012).

Healthy nutrition is essential in promoting health aging in the elderly. It has been found that nutrition plays a important role in the prevention and treatment of disease in all aging for instance among the older people living in services homes, hospitals or the ones living independently. However, the changes in aging can influence the habit if eating healthy. As people get older their functional abilities are reduced and these affect the need of proper food intake in the pensioners increase the risk of malnutrition. Therefore, neglecting nutritional care among the pensioners can affect their health, living condition and their life span (Nwanu, 2013).

Malnutrition has been widespread among pensioners in Nigeria. It has resulted to increase in early loss of life and has negatively affected the human and mental development in Nigeria. There has been a report of cases of malnutrition among the elderly (pensioners) as a result of their food habit and it has been attributed to many reasons which include high rate of poverty, environmental factors and negligence of the government towards their retired workers. In a study that used longitudinal data on 608 healthy, non-obese Chinese (aged 50–70 years) from the 2003 and 2007 China Health and Nutrition Surveys, the subjects were described in terms of the changes in the mid-arm muscle area and body fat (waist circumference). Patterns of change involving gains in arm muscle and loss of fat were associated with

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increased protein intake, urban residence, and moderate or heavy levels of physical activity at baseline. Variation in protein intake, physical activity, and urban residence were also differentiated between the groups that gained fat and those that gained muscle mass. They also found that taller subjects appeared more likely to lose muscle, and this may be accounted for by the fact that any given level of energy or protein intake is more likely to fall short of requirements among larger individuals than among smaller individuals. In conclusion, the patterns of age-related change in body composition appear to be associated with modifi able variables, including income, urban residence, activity level and protein, and energy intake (Stookey et al. 2011). By contrast, in a cross-sectional study, Roberts et al. (2005) found that healthy older adults (61 years) with low BMI (<22 kg/m 2) consumed a lower variety of energy-dense foods compared with older adults with higher BMIs ($p < 0.05$). Another result of this study was that the percentages of the participants who consumed the recommended dietary allowances for protein and the estimated average requirements for micronutrients were particularly low among older persons who had a low BMI and low micronutrient-dense variety: only 65.4% for protein (compared with 97.6% for older adults who consumed a wide variety of micronutrient-dense foods and had a BMI <22 kg/m 2) and 0.0% for the estimated average requirements for all 14 micronutrients (compared with 9.2% for older adults who consumed a wide variety of micronutrient-dense foods and had a BMI <22 kg/m 2). These results may help to explain both unintentional weight loss and the maintenance of undesirably low body weight in old age. Taken together, these findings suggest that consuming a wide variety of micronutrientrich foods tended to counterbalance the reduced micronutrient intakes associated with old age, with positive associations of micronutrient-dense variety with the intake of vitamins A, E, C, folate, B12, magnesium, and zinc. Anyanwu (2011) sought the prevalence of malnutrition among elderly people from 60-85 years related morbidity and mortality in Abia State University Teaching Hospital using secondary data sourced. The descriptive research design was adopted for carrying out the research. 450 participants of elderly were sampled, a self designed validated questionnaire was used to collect data. Five (5) research questions were generated while data was analyzed through descriptive statistics. The result shows that the short blindness among sixty four (64) cases were the direct diagnosis linked to malnutrition while malaria has 379 cases which is the most frequent morbidity. It was recommended that continuous training of health workers to understand nutrition for effective orientation to the elderly people. Adeyemi (2016) reported on the impact of nutrition among older people associated with functional ability and quality of life at college health Ibadan. Five hypothesis were raised and tested and a cross-sectional study included institutionalized (n=374) and home dwelling older people with varied cognitive and morbidity (n=256) were combined and it was revealed that slack in nutrient intake among the older people affected their health status. Nakpodia (2006) examined the risk of poor nutrient and feeding pattern among elderly women in Ethiopia. The research adopted a descriptive survey design. Three research questions were posed for the study. The population of the study comprised 150 pariticipants of women with a random sample of 60 women who volunteered to be used for the study. The validity of the instrument was based on face content values. The data collected from the participants was analyzed using ANOVA statistical tool, hence, the study revealed that women with low nutrient intake are prone to sicknesses like poor vision, arteritis, high blood pressure, etc. it is recommended amongst other things that free health care and centers should be established most especially in rural communities.

Studies have shown that over time, malnutrition in old age affects the heart, blood vessels, eyes, kidneys, and nerves. Adults with diabetes have a two- to three-fold increased risk of heart attacks and strokes (Sarwar et al., 2010). Combined with reduced blood flow, poor nutrition increases the chance of stomach ulcers, infection and eventual need for diabetic complication supplments. Simple lifestyle measures have been shown to be effective in preventing or delaying the onset of old age sickness. More activity is required for weight control; eat a healthy diet, avoiding sugar and saturated

fats intake; and avoid tobacco use – smoking increases the risk of diabetes and cardiovascular diseases.

These problems of malnutrition in our society and with reference to Mbaise people cannot be overemphasized as it may sometimes prove to cause a severe health problem or deformity. The elderly (pensioners) here are prone to malnutrition cases as a result of poor food habit. It was observed that most pensioners who have retired from service can barely feed on three square meals talk more of getting a balanced diet which may be due to delay or denial of his retirement benefits after active service years which results in thought-provoking emotional disturbances which they face. On this note the researcher found it worthy to examine the anthropometric indices, food habits and nutritional status among pensioners in Mbaise, Imo State.

The general aim of this study is to examine the anthropometric indices, nutritional status and feeding habits of pensioners in Mbaise, Imo State. The specific objectives of the study are to; (1) ascertain the Nutritional habit of pensioners in Mbaise, in Imo State, (2) identify the level of Energy and Nutrient intake among pensioners in Mbaise and (3) make nutritional recommendations for the pensioners in Mbaise, Imo State. The study is limited to retirees (aged people) in Mbaise, Imo State. This comprises of three local governments, they include Aboh mbaise, Ahiazu mbaise, Ezinihitte mbaise.

The significance of this study data generated will help to enlighten individuals and the old retirees on the way to improve health status. This sector emerges as the main or prime beneficiary of the research work, the government and private health workers like the Pediatrics doctors, will found this work useful on the ways to checkmate the health status of pensioners by government and private health wards. Further, serving as a yardstick in statistics in stating population to center handling cases of the pensioners.

2. Research methodology

2.1 Area of the Study

The study was carried out at Mbaise in Imo State. It comprised of three local government areas which include Ezinihitte Ahiazu and Aboh Mbaise Local Government Area. Mbaise is a regional area located in Owerri Zonal Area of Imo State, Southern Nigeria. Set in the heart if Igboland, it includes several towns and cities. The name "Mbaise" was derived from five clans; Agbaja, Ahiara, Ekwereazu, Ezinihitte and Oke Uvuru. Mbaise is an amalgamation of indigenous, autonomous clans, connected by intermarriage and situated in approximate area of the heartland of Igboland. It occupies an area of 404 square kilometers, the population of Mbaise as at 2006 was estimated to be 702,117 (NPC, 2018). The main source of income in Mbaise as at 2019 was estimated to village group as they were the highest in the level of sociopolitical organization with "Amaala". Mbaise culture is rich in music and dance appropriate for social occasion. The people are Igbo and about 90% orthodox religion, while protestants and traditional religion comprise the remaining population. There are also numerous sociopolitical titles which feature prominently in Mbaise just like in other parts of Igboland. The titles include; Eze (king), Nze, Okenze, Ozo, Duru, Durunze, Ezeji (Yam lord) and more.

2.2 Research Design

The study employed a descriptive survey design to examine the anthropometric indices, feeding habits and nutritional status of Pensioners in Mbaise, Imo State. Descriptive design is used in preliminary and exploratory studies to allow researchers to gather information, summarize, present and interpret for the purpose of clarification. Descriptive study design of Nworgu (2017) was employed.

2.3 Population of the Study

The population of the study comprises of 5,850 pensioners (retirees) from the three (3) local governments in Mbaise which were gotten from churches, hospitals, ministries and homes (Imo State Pensions Board, 2018).

2.4 Sample Size Determination

The population size for this study is large, therefore the researcher will determine the sample size through the simple random sampling technique.

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The sample size for the study is 220. The samples represent 10% of the entire population. (See appendix for sample table)

Local Govt	Homes	Hospitals	Govt. Ministries	Total
Aboh Mbaise	24	16	30	70
Ahiazu Mbaise	23	17	33	73
Ezinihite Mbaise	22	20	35	77
Total	69	53	98	220

Source: (Field Survey, 2019)

2.5 Instrument for Data Collection

2.5.1 Questionnaire

A well-structured and validated questionnaire was used in collecting data from the respondents. The questionnaire was designed to elicit information on personal data, anthropometric indices, dietary patterns and environmental challenges of the pensioner. The questionnaire was given to the subjects to fill and guidance was offered on how to fill it (FAO, 2009).

2.5.2 Anthropometry

1. Height Measurement: A calibrated vertical metre rule was used. The subjects were asked to remove their foot-wears and standing on a flat platform. The calibrated vertical metre rule was placed at their back with their feet parallel and their buttocks and back of the head touching the instrument. The hands were made to hang freely at the side, and the readings taken twice to the nearest 1cm and the mean recorded.

2. Weight Measurement: This was carried out using a bathroom's scale. The subjects were weighed standing in the middle of the scale, bare footed, head upright and hands hanging freely by the sides and with minimal clothing. Measurements was taken twice to the nearest 1kg and the mean recorded.

3. Waist Circumference: A stretch-resistant tape was used. This measurement was taken at the smallest circumference of natural waist, usually just below the belly button (navel). A tape measure was placed around the stomach, just below the navel. The tape was tightened but not so tight that it compresses the skin. The subjects were made to stand with arms at the sides and feet positioned close together. The readings were taken twice to the nearest 1cm and the mean recorded.

4. Hip Circumference: A stretch-resistant tape was used. This measurement was taken around the widest region of the buttocks. The subjects were made to stand with arms by the sides and feet close together. The tape was tightened around the widest region but not so tight that it is constricting (WHO, 2008b). The readings were taken twice to the nearest 1cm and the mean recorded.

2.5.3 Feeding Pattern Assessment

The feeding habit of the pensioners was assessed using the 24 hours' dietary recall and the food frequency table. The food frequency questionnaire showed the frequency of consumption of meals by the pensioners while the 24 hours dietary recall showed their daily meal consumption for a period of a day or two and their in-between meals if any as described by Johaness (2013).

2.6 Reliability of Instrument

In order to ascertain the reliability of the research instrument, a test retest reliability method was used. This was established by administering the instruments on two different occasions to twenty (20) adults who were not involved in the sample. The reliability index was established, using the Pearson (∞) product moment correlation co-efficient. The co-efficient was found to be of 0.75 which indicated that the instrument was highly reliable.

2.7 Method of Data Analysis

The data collected was presented in tables and analyzed using Statistical Packages for Social Science (SPSS) V.20. Chi square was also used to examine the significant relationships on different variables.

3. Results

Table 2 shows the personal data of the respondents, the result indicates that the women are higher in number (53.2%), 8.2% were single, 69.5% were married 14.5% were widow,5% were widower,2.7% were divorced.72.3% were monogamy. The study showed that majority of the pensioners were Igbo (88.6%) and most attended secondary education (50.5%) while few had tertiary education (40.4%). Majority of the respondents were Christians (90.9) as few where Muslims (4.5%) and traditional worshippers.

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Table 2: SECTION A: PERSONAL INFORMATION

Parameters	Frequency	Percent
GENDER		
Male	103	46.8
Female	117	53.2
Total	220	100.0
50-60 years	34	15.5
61-65	63	28.6
66-70	67	30.5
71and above	56	25.4
Total	220	100.0
MARITAL STATUS		
Single	18	8.2
Married	153	69.5
Widow	32	14.5
Widower	11	5.0
Divorced	6	2.7
Total	220	100.0
RELIGION		
Christian	200	90.9
Muslim	10	4.5
Traditional	5	2.3
Others	5	2.3
Total	220	100.0
ETHNICITY		
Igbo	195	88.6
Hausa	10	4.5
Yoruba	11	5.0
Others	4	1.8
Total	220	100.0
EDUCATION		
Primary	20	9.1
Secondary	111	50.5
Tertiary	89	40.4
Total	220	100.0
ARE YOU A PENSIONER		
Yes	220	100.0
Total	220	100.0
FAMILY STRUCTURE		
Monogamy	159	72.3
Polygamy	61	27.7
Total	220	100.0

Table 3 shows the clinical and health characteristics, 52.3% have been diagnosed with diabeties,47.7% have not been diagnosed of diabeties. 54.1% had no concomitant illness, 35.9% had hypertensive,5% osteoarthritis, 0.9% postrate enlargement,4.1% blind vision.48.6% are not on medication,45.9% are on oral medication,5.5% are on insulin medication.

TABLE 3: SECTION B: CLINICAL AND HEALTH CHARACTERISTICS

Have you been diagnosed with diabetes?		
Yes	105	47.7
No	115	52.3
Total	220	100.0
IF YES HOW LONG		
None	112	50.9
Less than one year	45	20.5
One to two years	11	5.0
Two to five years	30	13.6
Five to ten years	22	10.0
Total	220	100.0
CONCOMITANT ILLNESS		
None	119	54.1
Hypertensive	79	35.9
Osteoartheritis	11	5.0
Prostate enlargement	2	0.9
Blind vision	9	4.1
MEDICATION		
None	107	48.6
Oral	101	45.9
Insulin	12	5.5
Total	220	100.0

Table 4 shows the feeding practices.40.5% eats food prepared from their wifes,3.6% from their husband,30% prepared food by themselves, 11.4% from their children,11.8 from care givers,2.7% gets food from relatives.25.5% do not exercise their body, 37.3% do exercise often,9.5% very often,27.7% rarely do exercise. Also, surprisingly most subjects eat thrice daily (39.1%) 77% eat twice in a day while 51% eat once daily. It also indicated that most subjects skip meals (58.6%) with most reasons for too busy (23.2%). Pensioners in the study take alcohol 55% once in a while 84%. Smoking habits were found to be low 84.1%. Most consume fruits 35.9% and veggies 64.1% once daily. Snacks which include Meat pie, doughnut and sausage rolls were mostly taken by subjects (54%,59%,12%) with consequent nutritional supplements (54.5%) Multivitamins (56.4%) as prescribed by nutritionists and health staff. 60% agreed they exercised their bodies while 88% do not. 26.8% of the respondents indicated they were on special diet while 73.8% had none, 37.3% exercise their bodies often, 9.5% rarely, 27% very often while 25.5% had no exercise.

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TABLE 4. SECTION C : FEEDING PRACTICES

WHO PREPARE YOUR MEAL		
Wife	89	40.5
Husband	8	3.6
Self	66	30.0
Children	25	11.4
Caregivers	26	11.8
Relations	6	2.7
Total	220	
DO YOU FORBID/AVOID EATING A PARTICULAR FOOD		
Yes	55	25.0
No	165	75.0
Total	220	100.0
IF YES WHAT FOOD		
None	176	80.0
Garri	18	8.2
Rice	12	5.5
Pap	3	1.4
Fish	2	0.9
Plantain	2	0.9
Fufu	3	1.4
Una	4	1.8
Total	220	100.0
HOW MANY TIMES DO YOU EAT PER DAY?		
Once	11	5.0
Twice	88	40.0
Thrice	95	43.2
Four times	23	10.5
Others	3	1.4
Total	220	100.0
HOW MANY TIMES DO YOU EAT AT HOME DAILY ?		
Once	51	23.2
Twice	77	35.0
Thrice	86	39.1
Four time	6	2.7
Total	220	100.0
DO YOU SKIP MEALS?		
Yes	129	58.6
No	91	41.4
Total	220	100.0
IF YES WHAT MEAL		
None	72	32.7
Breakfast	52	23.6
Lunch	70	31.8
Dinner	26	11.9
Total	220	100.0
WHAT ARE YOUR REASONS		
None	70	31.8
Weight reduction	22	10.0
No money	46	20.9
No appetite	28	12.7
Too busy	51	23.2
Sickness	3	1.4
Total	220	100.0

DO YOU TAKE ALCOHOL		
Yes	122	55.5
No	98	44.6
Total	220	100.0
IF YES HOW LONG		
None	66	30.0
Once a while	84	38.2
Daily	38	17.3
Weekly	26	11.8
Every time	6	2.7
Total	220	100.0
DO YOU SMOKE		
Yes	35	15.9
No	185	84.1
Total	220	100.0
HOW MANY TIMES		
None	155	70.5
Once	25	11.4
Twice	36	16.4
Four	3	1.4
Others	1	0.5
Total	220	100.0
HOW OFTEN DO YOU CONSUME FRUIT?		
None	9	4.1
Once a day	79	35.9
Twice a day	64	29.1
Thrice a day	4	1.8
Others	64	29.1
Total	220	100.0
HOW OFTEN DO YOU CONSUME VEGETABLE?		
Once a day	141	64.1
Twice a day	34	15.5
Thrice a day	9	4.1
Others	36	16.4
Total	220	100.0
DO YOU TAKE SNACKS?		
Yes	165	75
No	55	25
Total	220	100.0
WHICH OF SNACKS		
None	43	19.5
Doughnut	54	24.5
Meat-pie	59	26.8
Sausage-roll	12	5.5
Others	52	23.7
Total	220	100.0

Jogging	78	35.4
Total	220	100.0
HOW OFTEN DO YOU EXERCISE		
None	56	25.5
Often	82	37.3
Very often	21	9.5
Rarely	61	27.7
Total	220	100.0

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Table 5 shows the dietary pattern of subjects in diversity. 30% eats large quantities of food everyday, 38% mid morning snacks with butter, floor, milk, sugar and water, 18% took a place rice and beans as lunch, 17.2% took garri and soup, respectively while none (70.5%) took mid-day foods. Also, surprisingly most subjects eat biscuits and malt (20.9%), while 19.1% eat garri and soup as their dinner. It also indicated that most subjects took bread and tea (77%) as bedtime snacks. Pensioners in the study take alcohol 55% once in a while 84%. Smoking habits were found to be low 84.1%. Majority do not consume midmorning snacks while (21.5%) took pounded yam and soup, (12.5%) pap and akara as their midmorning snacks.

Table 5: SECTION D: DIETARY DIVERSITY QUESTIONAIRE USING 24 HOURS DIETARY RECALL

BREAKFAST YESTERDAY		
Rice and plantain	10	4.5
Rice and beans	29	3.2
Garri and soup	15	6.8
Yam	22	10.0
Tea and bread	76	34.5
Rice and stew	30	13.6
Fish and meat	2	0.9
Pap and akara	7	3.2
Moimoi	3	1.4
Unripe plantain	7	3.2
Indomie and egg	19	8.6
Total	220	100.0
QUANTITY		
One plate	76	34.5
Two plate	66	30.0
One piece	37	16.8
One glassfruit	41	18.6
Total	220	100.0
DESCRIPTION		
Butter,floor,milk,sugar,water	16	7.3
Carrot,beef,floor,butter,milk	25	11.4
Tomato,oil,pepper,salt	46	20.9
Milk,sugar,ice	91	41.4
Salt,water	30	13.6
Water	12	5.5
Total	220	100.0
MID-MORNING SNACKS		
None	104	47.3
Rice and plantain	4	1.8
Garri and soup	5	2.3
Yam	2	0.9
Biscuit with malt	5	2.3
Tea and bread	15	6.8
Fish and meat	8	3.6
Pounded yam and soup	47	21.4
Pap and akara	27	12.3
Fruit	3	1.4
Total	220	100.0
QUANTITY		
One plate	85	38.6
Two plate	11	5.0
One piece	17	7.7
One glassfruit	3	1.4
Nothing	104	47.3
Total	220	100.0
DESCRIPTION		
Butter,floor,milk,sugar,water	55	25.0
Carrot,beef,floor,butter,milk	41	18.6
Tomato,oil,pepper,salt	39	17.7
Salt,water	48	21.8
Water	37	16.8
Total	220	100.0
LUNCH		
None	27	12.3
Rice and plantain	6	2.7
Rice and beans	40	18.2
Garri and soup	38	17.3
YAM	16	7.3
Biscuit with malt	17	7.7
Rice and stew	29	13.2
Fish and meat	4	1.8
Pounded yam and soup	23	10.5
Pap and akara	4	1.8
Moimoi	4	1.8
Indomie and egg	12	5.5
Total	220	100.0
QUANTITY		
One plate	127	57.7
Two plate	30	13.6
One piece	37	16.8
Nothing	26	11.8
Total	220	100.0
DESCRIPTION		
Butter,floor,milk,sugar,water	60	27.3
Carrot,beef,floor,butter,milk	50	22.7
Tomato,oil,pepper,salt	35	15.3
Salt,water	60	27.3
Water	15	6.8
Total	220	100.0
MID-AFTERNOON		
None	155	70.5
Rice and plantain	7	3.2
Rice and beans	6	2.7
Garri and soup	11	5.0
Biscuit with malt	3	1.4
Fish and meat	22	10.0
Fruit	15	6.8
Indomie and egg	1	0.5
Total	220	100.0
QUANTITY		
One plate	25	11.4
Two plate	1	0.5
One piece	24	10.9
One glass fruit	15	6.8
Nothing	155	70.5
Total	220	100.0
DESCRIPTION		
Butter,floor,milk,sugar,water	11	5.0

Carrot,beef,floor,butter,milk	9	4.1
Tomato,oil,pepper,salt	10	4.5
Salt,water	15	6.8
Water	4	1.8
Total	171	77.7
	220	100.0
DINNER		
Rice and plantain	32	15.0
Rice and beans	16	7.3
Garri and soup	42	19.1
Yam	4	1.8
Biscuit with malt	46	20.9
Tea and bread	11	5.0
Rice and stew	17	7.7
Fish and malt	1	0.5
Pounded yam and soup	46	20.9
Pap and akara	1	0.5
Fruit	3	1.4
Total	220	100.0

QUANTITY		
One plate	144	65.5
Two plate	29	13.2
One piece	46	20.9
Nothing	1	0.5
Total	220	100.0
Total		
DESCRIPTION		
Butter,floor,milk,sugar,water	58	26.4
Carrot,beef,floor,butter,milk	58	26.4
Tomato,oil,pepper,salt	23	10.5
Salt,water	37	16.8
Water	44	20.0
Total	220	100.0
QUANTITY		
None	171	77.7
Rice and beans	5	2.3
Garri and soup	13	5.9
Yam	4	1.8
Biscuit with malt	2	0.9
Tea and bread	25	11.4
Total	220	100.0
QUANTITY		
One plate	23	10.5
Two plates	11	5.0
One piece	19	8.6
Nothing	167	75.9
Total	220	100.0

Table 6 shows the food consumption pattern of subjects. 70.4% eats cereals and grains, 79% took roots and tubers, 74.1 took vitamins and vegetables while 25% do not take,43.2% consume vitamin A rich fruits, 45% organ meat, 65.5% do not consume flesh meat while 34.5% consume fleshy meats, 65.5% do not consume eggs while 34.5% consume eggs, Also, surprisingly most subjects eat legumous foods (60%) milk and milk products 65.5% eat twice in a day while 59% take oil and fats. It also indicated that most subjects take sweets and sugar (62%) with most spcies and condiments (65%). Pensioners in the study take sweet and sugars 55%.

Table 6 SECTION E: Food Consumption Pattern

CEREAL AND GRAIN		
Yes	155	70.4
No	65	29.6
Total	220	100.0
ROOT AND TUBERS		
Yes	175	79.5
No	45	20.5
Total	220	100.0
VITAMIN A AND VEGETABLE		
Yes	163	74.1
No	57	25.9
Total	220	100.0
DARK GREEN LEAFY VEGETABLE		
Yes	115	52.3
No	105	47.7
Total	220	100.0
OTHER VEGETABLE	164	74.5
Yes	56	25.5
No	220	100.0
Total		
VITAMIN A RICH FRUITS		
Yes	95	43.2
No	125	56.8
Total	220	100.0
ORGAN MEAT		
Yes	99	45.0
No	121	55.0
Total	220	100.0
FLESH MEAT		
Yes	76	34.5
No	144	65.5
Total	220	100.0
EGGS		
Yes	144	65.5
No	76	34.5
Total	220	100.0
FISH		
Yes	120	54.5
No	100	45.5
Total	220	100.0
LEGUMES NUT AND SEEDS		
Yes	134	60.9
No	86	39.1
Total	220	100.0
Table 4.5 SECTION E: Food Consumption Pattern **MILK AND MILK PRODUCT**		
Yes	144	65.5
No	76	34.5
Total	220	100.0

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OIL AND FATS		
Yes	131	59.5
No	89	40.5
Total	220	100.0
SUGAR OR SWEETS		
Yes	138	62.7
No	82	37.3
Total	220	100.0
SPICES CONDIMENT AND BEVERAGES		
Yes	143	65.0
No	77	35.0
Total	220	100.0

Tabkle 7 is showed the anthropometric indices. 73.3% were underweight, 45.9%were normal,25.9% were overweight,20.9% were obsessed.

Table 7. SECTION F: ANTHROPOMETRIC INDICES

BODY MASS INDEX

Underweight	16	7.3
Normal	101	45.9
Overweight	57	25.9
Obesity	46	20.9
Total	220	100.0

Z-SCORE RESULT

WEIGHT	MEAN	SD	P-VALUE	T-VALUE	DF
Male	63.64	12.64	0.338	-4.97	218
Female	72.21	13.11			
HEIGHT					
Male	1.65	0.09	0.483	1.313	218
female	1.64	0.09			

Mean with ± standard deviation within the row with the same superscript shows that there is no significant difference ($p>0.05$) while means with different superscript within the row differs significantly ($p<0.05$) respectively. There was a significant difference in the weight and height of the respondents at ($p<0.05$).

4. Discussions

This study assessed anthropometric indices, nutritional status and feeding habits of pensioners in Mbaise, Imo State. The information on socio economic characteristics of the respondents showed that the women are most dominant in the pension population. They attended subject were 61-65 and 66-70 years of age while majority 69.5% were married. The religion practiced by most people here is Christianity (90.9%). The secondary education was the most attained educational level (50.5%) as few obtained tertiary education levels. The age group most affected by nutritional related diseases was the respondents from 50-59 years and also 60 years above; this is In agreement with previous findings of Erasmus et al. (2014) in Nigeria who observed that the prevalence of disease caused my poor nutrition or unhealthy feeding habits rises with age. There was a higher prevalence in females than in males. This is in keeping with the finding of Adebisi et al., (2015) in their study on the prevalence of diabetic patients at risk of developing complications in females.

Almost all the respondents were Christians, this could be due to the fact that Christianity was the presiding religion in the locality Gledhill et al., (2016). Most of the subjects were igbo's. This could be ascribed to the fact that this study was carried out at the south-east geopolitical zone of Nigeria where the major ethnical groups are igbo's and the major religion practiced is Christianity. Majority of the subjects were married this could be due the fact that the subjects were elderly who were meant to be married. Thirty seven percent of the subjects had secondary school education. Trading was the main occupation of the subjects. This could be attributed to the fact that this study was carried out in the rural area or as most of them have retired from service they may like to venture into trading and also their poor level of education.

With regard to the glycemic control, this study showed that almost one third participants had uncontrolled diabetes and more than half had concomitant illnesses. Patel et al.(2011) showed that only 7% of their participants had controlled diabetes where-as almost 52% had sub-optimal control and 41% had uncontrolled diabetes. Such large proportion of patients getting treatment even from tertiary care facility points towards the need for having awareness and intervention programs targeting the measures at glycaemic control among diabetics.

More than half (73.3%) of subjects in this study were overweight as per their BMI whereas in the study by Patel et al.(2009) almost 70% were overweight. With regard to the mean BMI, this study and a study by Shekar et al.(2005), among south Indian diabetic population showed mean BMI to be more among females. (Shekar Ma et al., 2005). Almost half of the diabetic patients were hypertensive

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and another one third to be pre-hypertensive in this research, meanwhile the study by Patel et al also shows half of their patients having hypertension. Even a community based study by Basavegowda et al. (2013) from urban slums of city of Mysore showed the prevalence of hypertension among diabetics to be around 65%. weight gain, a very important risk factor for type 2 diabetes mellitus (Okafor C et al., 2018). This finding was also observed by Egwim et al. (Egwim et al., 2012), in their study on the relationship between diabetes mellitus and urbanization. The prevalence of diabetes mellitus in Africa is rapidly on the increase especially among urban communities.

This present study shows a direct association between level of education and dietary lifestyle score. This finding was consistent with other studies (Shaw et al., 2012) which found that lower education was associated with less diversified and poor diet quality. These results may be explained by the fact that certain literacy level is required to comprehend the available health information. Less-educated subjects may find it hard to make use of written materials, like newspaper articles and leaflets, to gain nutritional and health-related knowledge (Norinmouh, 2010). The reports from the research were agreement with the findings reported in a review paper by Darmon and Drewnowski (2008) that showed better-quality diets are mainly consumed by better-educated and more-affluent people and suggested that the observed socioeconomic status gradient in diet quality may be mediated by prices of food and costs of diet. Prices of food could be a very important determinant of food choices and diet quality as low-income group spend a relatively higher proportion of their income on food than higher-income group does (Blaylock et al., 2016). This can be attributed to the type of food consumed and lifestyle adopted (Okon et al., 2012), large proportion of diabetics also having hyper-tension call for commensurate preventive efforts. From the results presented in the table above, feeding pattern in both pensioners living in their homes, villages and those living within old people's home shows a positive relationship (<0.05) with a standard error of 0.338, while it has a negative/inverse relationship with BMI (>0.05).

This implies that BMI is directly related to feeding pattern but can be accelerated by other factors.

Intuitively, we can say that people who feed well will have a good and normal Body Mass Index.

5. Conclusion and recommendations

Few of the respondents had good nutrition knowledge while almost half respondents were either over weight or underweight. Also we saw a higher proportion of nutrition based illnesses among the studied old aged subjects. All these factors points towards increased efforts at educating this vulnerable lot of subjects for secondary prevention in chronic sicknesses. Findings from the study shows that higher nutrition knowledge is associated with better diet quality and better maintenance of good nutritional status, concerted effort should be made to promote healthy lifestyle among the populace to reduce the burden of hypertension and diabetes among pensioners in Nigeria.

From the findings of this study, the researcher recommends the following;

1. There should be sufficient attention to health education by health care practitioners and motivation for health education services. Therefore, I recommend that education on healthy diet should be efficiently promoted. Health workers should be educated enough to pass the right information to the public concerning the implications of poor feeding at old age.
2. Government through the federal ministry of health should set up a nutrition centre where people can obtain nutrition counseling and measure their height, weight and calculate their BMI and WHR so as to know when they are at risk of chronic diseases.
3. Government and other stake-holders should demonstrate enough political will and commitment by increased funding, capacity building and provision of necessary materials and equipment at the primary health care level, for early detection and treatment. Where complications and co-morbidities occur, integrated diabetes management approach should be adopted to prevent death and improve the quality of life of the diabetic patient.
4. Places to engage in physical activity should be made readily available, adult homes should also be encouraged so as to reduce

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stress and increase physical activity of elderly. People should be taught about the modifiable risk factors of the ailment such as obesity, sedentary lifestyle, alcoholism and smoking, and then encouraged to adopt healthy life style to prevent the onset of the disease and the development of chronic complications.

5. Finally, I recommend that pensioners should eat less fatty foods, salty foods, alcohol, drastically stop cigarette smoking and have a change of lifestyle with good dietary pattern.

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