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Street foods consumption and the nutritional status of the elderly in Obio-Akpor local government area, Rivers state, Nigeria

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Abstract

The study examined street foods consumption and the nutritional status of the elderly in Obio-Akpor Local Government Area, Rivers State Nigeria. The study adopted the descriptive survey design. A multistage selected sample of 160 elderly (men and women) persons across four (4) strata classification (via: Obio, Akpor, Apará, and Evo) participated in the study. The two (2) experts validated 6 item instrument titled "Consumption of Street Foods and the Nutritional Status of the Elderly Questionnaire" (CSFNSEQ) with a reliability coefficient of 0.769 (determined using Cronbach Alpha method) was used for the collection of data analyzed using mean to answer research questions 1 and 2 (with a criterion mean cutoff), while regression analysis was used to answer research questions 3 and 4 at 0.05 level of significance. The study revealed that: the consumption of pastries statistically (approximately 59 percent) contributed and significantly ($P < 0.05$) influenced the nutritional status of the elderly, while the intake of roasted bole statistically (approximately 54 percent) contributed and significantly ($P < 0.05$) influenced the nutritional status of the elderly in Obio-Akpor Local Government Area, Rivers State. The study recommended amongst others that: nutritionists and dieticians advocate against using high cholesterol oil for producing snacks or pastries that will reduce the functioning of the heart when consumed. Alongside, producers of roasted plantain ensuring that their bole is properly cooked to avoid indigestion which can destabilize and retard the agility of the elderly.

Keywords: Street foods consumption, nutritional status, elderly, Obio-Akpor

Introduction

In recent times, the different activities, work schedules, lifestyles, cultural interactions, and businesses engaged by people especially the elderly limits or reduce the time they spend in their homes. The resultant more time spent outside the home induces changes in the eating habit of these elderly who eventually resort to consuming street food (rather than home cooked foods) to meet their nutritional status and fast living life. Street foods are ready-to-eat foods and beverages prepared and/or sold by mobile (in pushcarts, baskets, balance pole, etc.) and stationed (in stalls, shops, etc.) hawkers and vendors respectively, on the streets, schools, train stations, bus terminals, entertainment, festival areas, and road junctions to cater for the dietary needs of the elderly. These foods and drinks can be consumed in the run without requiring any processing or preparation afterwards (Von Holy & Makhoane, 2006; Muzaffar *et al.*, 2009; Steyn *et al.*, 2011) [8, 9, 10].

Street foods also include commercially produced snacks or pastries that are retailed by vendors or hawkers (either in open or closed space) for the sustenance of the transiting and busy elderly who consumes such snacks outside their home. Similarly, the high preference of street foods due to their tastes, easy availability, low cost, cultural and social heritage connection, and nourishment makes them an integral part of the country's cuisine for both sellers and consumers (Buscemi *et al.*, 2011; Kok & Balkaran, 2014) [12, 13]. In view of this, street foods have become an indispensable component of food distribution systems contributing to the daily dietary intake of consumers (like the elderly) in the busy cities or urban centres (like Obio-Akpor Local Government Area) in developing countries (Rheinlander *et al.*, 2008) [14]. Despite the preference for street foods, Olumakaiye, Ogbimi, Ogunba and Soyebó (2010) [5] emphasized the arbitrary consumption of these drinks, meals and snacks (otherwise foods

whose level of fat, cholesterol, preservatives, spices, etc. are not specified) at intervals, during leisure, in-between meals (breakfast and lunch), or before the next meal could constitute dicey eating habit which account for varying nutritional compositions, where its adequacy or inadequacy is predictive of the health status of the elderly. Amosu, Degun, Atulomah and Olanrewju (2011)^[1] stated that the nutritional status of a person relates to his/her health as dictated by the quality of nutrients or diets consumed, and the body's ability to utilize them for its metabolic needs. Nutritional status also entails the uptake of food, liberation of energy, elimination of wastes and the biochemical synthesis that are essential for maintenance of normal growth and development. In other words, nutritional status can also be inferred as 'good' when an individual consumes food that enhances their health, vitality, and body functioning without being malnourished.

Instructively, feeding pattern predicts the nutritional status of any person. Consequently, the ensuing street food eating habit can pre-dispose the elderly to the prevalence of obesity, increase of type 2 diabetes, and other nutritional-induced diseases like cancer which severely impedes and impairs the articulation, mentality, agility, immunity, and functioning of the elderly (Roess, Jacquier, Catellier, Carvalho, Lutes, Anater & Dietz, 2018)^[6]. The elderly are men and women above the age of 60 years who are gemstones of any society (Olayiwola *et al.*, 2006; Seong *et al.*, 2012)^[4, 23]. Their care and wellbeing especially in rural communities depend largely on their children, relatives and sometimes government resources (Govender, 2011)^[17]. Hence, the high dependence of these elderly especially in Africa for their feeding makes them to become a huge financial burden on their caregivers or benefactors who on this premise sometimes ignore or relegate their provisions or foods to the background.

Furthermore, the likelihood that the elderly could be associated with very low income, inadequate food intakes, and poor food patterns leading to under-nutrition or over-nutrition increases their vulnerability to health related predicaments or chronic illness and nutritional diseases like diabetes, malnutrition, etc. which is ravaging them especially in developing countries (Govender, 2011; WHO, 2009; Oldewage-Theron *et al.*, 2005)^[17, 24, 22]. Studies by Adepoju *et al.*, (2012) showed that street foods like roasted plantain (otherwise bole), and snacks or pastries like meat pie, scotch egg, doughnut, cakes, etc. (which are not organic) has very low nutritional composition and retention value which might be contributory to the low: bone mineral density and immunity that increases disease prevalence, rapid deterioration processes, reduced vitality, etc. of the elderly. Corroborating this view, Afolabi *et al.* (2012) assert that the inadequate nutrient intake of the elderly in Nigeria is often associated with their poor health, reoccurring illness, etc. This worrisome trend is the crux of this study, necessitating instilling the consciousness that proper nutrition (conceptualized as food with the right proportion of vitamins, minerals, fluids, carbohydrate, protein and fat) is an effective therapy against ailments.

Statement of the problem

The elderly as mostly those relying on others (children, family, friends, caregivers, government or society) for their nutritional and health needs are faced with inadequate income and nutritional ignorance which culminate to poor dietary choice and patterns that eventually affects their nutritional status. Also, the likely poor care in terms of non-clinical observations and exercise amidst the food insecurity from the consumption of the low nutrient quality street foods (prepared with high

cholesterol oil, preservatives, spices, etc.) accentuates low quality diets that accentuates or triggers nutritional-induced diseases like diabetes, obesity, cancer, etc. which increases the vulnerability of the elderly.

Furthermore, the vulnerability of the elderly or aged being far greater than that of the younger population shows the need for continuous monitoring of the aged with a view to identifying the extent of malnutrition among them in Nigeria. Also, inadequate and inappropriate dieting evidently induces poor nutritional status which affects the articulation, reasoning, activeness, immunity level, and other conditions that incapacitates or bedridden the elderly. This scenario of uncertain health, wellness, and ailments depletes the resources and strains their children, family or caregivers who at this point are mainly concerned with providing drugs for healing of the ailments suffered by the elderly rather than using nutrition as proper therapy.

Previous studies (Sanya *et al.*, 2013; Olayiwola and Ketiku, 2012; Fadupin, 2012)^[16, 4, 19] have documented poor nutritional status among the elderly. Similarly, previous studies (Govender, 2011)^[17] have documented that the energy and nutrient intakes of the elderly were low compared to recommended dietary allowances. Older people are at nutritional risk due to their impaired digestion and utilization of low nutrient diets associated with chronic disease that affects them physiologically and socioeconomically. It is based on the foregoing that this study investigates street foods consumption and the nutritional status of the elderly in Obio-Akpor Local Government Area, Rivers State, Nigeria.

Specifically, the purposes of the study were to:

1. Determine the extent the consumption of pastries influence the health of the elderly in the study area.
2. Determine the extent the consumption of roasted plantain or bole influence the vitality of the elderly in the study area.
3. Determine the contributions of the consumption of pastries to the nutritional status of the elderly in the study area.
4. Determine the contributions of the consumption of roasted plantain or bole to the nutritional status of the elderly in the study area.

The following research questions guided the study

1. To what extent does the consumption of pastries influence the health of the elderly in the study area?
2. To what extent does the consumption of roasted plantain or bole influence the vitality of the elderly in the study area?
3. What is the contribution of the consumption of pastries to the nutritional status of the elderly in the study area?
4. What is the contribution of the consumption of roasted plantain or bole to the nutritional status of the elderly in the study area?

Scope of the study

This study centred on street foods consumption and the nutritional status of the elderly. In terms of geographic scope, the study would focus on or be conducted in Obio-Akpor Local Government Area, Rivers State, Nigeria. While in the terms of content scope, the study would be centred on the elderly (men and women) who are consuming these street foods that could influence their nutritional status. Furthermore, the independent variable is street food (dimensioned as pastries and roasted plantain or bole), and while the dependent variable is nutritional status (dimensioned via health and vitality).

Methodology

Research Design: The study was a cross-sectional study that adopted the descriptive survey design.

Study Area: The study was conducted in Obio-Akpor Local Government Area (LGA), Rivers State, Nigeria. Obio-Akpor is a local government area in the metropolis of Port Harcourt, one of the major centres of economic activities in Nigeria, and one of the major cities of the Niger Delta, located in Rivers State. Obio-Akpor as one of the twenty-three (23) local government areas of Rivers State covering about 260 km² and at the 2006 Census held a population of 464,789. Its postal code or ZIP code is 500102. Obio-Akpor has its headquarters at Rumuodomaya.

Furthermore, the original indigenous occupants of the area are the Ikwerre people, who are engaged in traditional occupations like farming, fishing, and hunting. But the highly urbanizing and metropolitan status of Obio-Akpor LGA, has led to the transition from the traditional to modern occupations like civil service, public service, business, trading, administration, oil exploration, and other services. This is heightened the influx of population, residential estates or suburbs, banks, industries, institutions (primary, secondary and tertiary), health facilities or institutions (like primary, secondary or tertiary), manufacturing, and commercial centres in this area.

Population for the Study: The population for the study consists of all the apparently healthy, free-living and non-institutionalized elderly (men and women) who can read and write, and residing in the local government.

Sample and Sampling Technique: A sample of 160 elderly persons participated in the study. The multistage sample technique was in two folds or phases. In the first phase, stratified sampling technique was used in delimiting Obio-Akpor LGA into four (4) strata classification via: Obio, Akpor, Aparara, and Evo. Secondly and finally, random sampling technique was used to select forty (40) respondents or elderly persons (who could read and write) from each of the 4 strata classification of Obio-Akpor. This constituted of a sample of 40 respondents per strata (i.e. Obio, Akpor, Aparara, and Evo), totaling 160 that was used for the study.

Instrumentation: The instrument for data collection was titled "Consumption of Street Foods and the Nutritional Status of the Elderly Questionnaire" (CSFNSEQ). The 16 item self-structured CSFNSEQ instrument was patterned after a four point rating scale of Very High Extent (VHE, 4 Points), High Extent (HE, 3 Points), Low Extent (LE, 2 Points) and Very Low Extent (VLE, 1 Point). Furthermore, the CSFNSEQ instrument comprised of two sections, Section A contained the

demographic information of the respondents or the elderly while Section B consisted of the item variables of the study.

Validation of Instrument: The face and content validity of the CSFNSEQ instrument was determined by two (2) experts (i.e. 1 Nutritionist and 1 Dietician) from Rivers State University. These validates were provided with the topic, objectives and research questions of the study for their comments, suggestions and observations which was incorporated in the final construction of the instrument.

Reliability of the Instrument: The reliability or internal consistency of the CSFNSEQ instrument was ascertained using Cronbach Alpha (r_a) method. In doing this, 40 copies of the CSFNSEQ instrument was administered to an equitable sample of Nutritionists and Dieticians from the Department of Home Economics and Hotel Management Ignatius Ajuru University of Education (which was not used for the study). Then 40 copies of the CSFNSEQ instrument were distributed to these respondents or elderly and upon completion, the CSFNSEQ instrument was retrieved, coded and analyzed using the Cronbach Alpha (r_a) method to obtain a reliability coefficient of 0.769, which necessitated the use of the CSFNSEQ instrument for administration.

Ethical Clearance: Ethical clearance was obtained from the families of the elderly prior to the commencement of the administration process to some of these elderly persons who may be living a private life or whose views are subject to the control of their children, family or caregivers.

Method of Data Collection: The researchers aided by three research assistants adopted the face-to-face direct delivery technique as the method of data collection to all the 160 respondents (i.e. elderly persons). This method of data collection enabled the researcher and her research assistants to offer some explanations to the concerns of that could be raised by the respondents. At the end of the administration exercise, out of the 160 copies of the CSFNSEQ instrument administered to the elderly persons or respondents, only 136 copies (representing 5% return rate) were validly retrieved and used for the analysis.

Method of Data Analysis: Collected data was tabulated, scored, coded, and analyzed using mean and standard deviation to answer research questions 1 and 2 (with a criterion mean cut off of 2.5), while multiple linear regression analysis was used to answer the research questions at 0.05 level of significance. All statistical computations were done using the Statistical Package for Social Science (SPSS) 22.0.

Results

Table 1: Mean Response on the extent consuming pastries influence the health of the elderly in the study area

S/N	The extent consuming pastries influence the health of the elderly include:	N = 136 \bar{X}	Remarks
1	Frying of most pastries reduces the phytochemicals that can boost the immunity level of elderly	2.74	HE
2	The absence of vegetables in most pastries reduces the energy that will sustain the busy life of some elderly	2.93	HE
3	The egg yoke added to some pastries reduces vital phytochemicals that helps to protect health of the elderly	2.93	HE
4	The high cholesterol in the oil used for producing some pastries reduces the heart functioning of the elderly	3.06	HE
5	Consuming wheat-based snacks reduces the intake of dietary protein and micronutrient	3.17	HE
6	The lack of vegetables in some pastries reduces the essential vitamins, minerals and fiber that can help reduce heart disease, high blood pressure and Type II diabetes	3.15	HE
7	The high cholesterol content of oil used for pastries exposes the elderly to cancer prevalence and body weight gain	2.93	HE
8	Pastries contain less sodium and phosphorous which decrease fluid balance and nerve impulse transmission	2.82	HE
Grand Mean		2.97	HE

HE (High Extent) = ≥ 2.50 while LE (Low Extent) = < 2.50 .

Table 1 reveals that the mean response on the extent consuming pastries influence the health of the elderly in the study area include: consuming wheat-based snacks reduces the intake of dietary protein and micronutrient ($\bar{X} = 3.17$) in item 5, the lack of vegetables in some pastries reduces the essential vitamins, minerals and fiber that can help reduce heart disease, high blood pressure and Type II diabetes ($\bar{X} = 3.15$) in item 6, the high cholesterol in the oil used for producing some pastries reduces the heart functioning of the elderly ($\bar{X} = 3.06$) in item 4, the absence of vegetables in most pastries reduces the energy that will sustain the busy life of some elderly in item 2, the egg yoke added to some pastries reduces vital phytochemicals that helps to protect health of the elderly in

item 3, and the high cholesterol content of oil used for pastries exposes the elderly to cancer prevalence and body weight gain in item 7 (each with $\bar{X} = 2.93$), pastries contain less sodium and phosphorous which decrease fluid balance and nerve impulse transmission ($\bar{X} = 2.82$) in item 8, and frying of most pastries reduces the phytochemicals that can boost the immunity level of elderly ($\bar{X} = 2.74$) in item 1. Furthermore, the grand mean score of 2.97 therefore, indicates that consuming pastries influence the health of the elderly in Obio-Akpor Local Government Area.

Table 2: Mean Response on the extent consuming roasted plantain or bole influence the health of the elderly in the study area

S/N	The extent consuming roasted plantain or bole influence the health of the elderly include:	N = 136 \bar{X}	Remarks
9	Roasted plantain has very low nutritional value and energy needed for physical activity	3.02	HE
10	Roasted bole lacks the micronutrients that increases the bone mineral density that can prevent fractures in the elderly	2.97	HE
11	The insufficient nutrient in roasted bole makes the elderly consuming it to be under nourished	2.95	HE
12	The mode of displaying the roasted plantain leads to their contamination with pathogenic bacteria that weakens the elderly	3.14	HE
13	The improper cooking of the bole can cause indigestion which destabilizes the elderly	2.97	HE
14	Roasted plantain has little nutrient retention level that affects the strength of the elderly	2.77	HE
15	The low nutrient composition in roasted bole affects the function of the elderly immune system	3.23	HE
16	The elderly are weakened by eating bole without the essential nutrients	3.04	HE
Grand Mean		3.01	HE

HE (High Extent) = ≥ 2.50 while LE (Low Extent) = < 2.50 .

Table 2 reveals that the mean response on the extent consuming roasted plantain or bole influence the health of the elderly in the study area include: the low nutrient composition in roasted bole affects the function of the elderly immune system ($\bar{X} = 3.23$) in item 15, the mode of displaying the roasted plantain leads to their contamination with pathogenic bacteria that weakens the elderly ($\bar{X} = 3.14$) in item 12, the elderly are weakened by eating bole without the essential nutrients ($\bar{X} = 3.04$) in item 16, roasted plantain has very low nutritional value and energy needed for physical activity ($\bar{X} = 3.02$) in item 9, roasted bole lacks the micronutrients that increases the

bone mineral density that can prevent fractures in the elderly in item 10, and the improper cooking of the bole can cause indigestion which destabilizes the elderly in item 13 (each with $\bar{X} = 2.97$), the insufficient nutrient in roasted bole makes the elderly consuming it to be under nourished ($\bar{X} = 2.95$) in item 11, and roasted plantain has little nutrient retention level that affects the strength of the elderly ($\bar{X} = 2.77$) in item 14. Furthermore, the grand mean score of 3.01 therefore, indicates that consuming roasted plantain or bole influence the health of the elderly in Obio-Akpor Local Government Area.

Table 3: Summary of Multiple Linear Regression Analysis on the contribution of the consumption of pastries to the nutritional status of the elderly in the study area

Source	Sum of Squares (SS)	Df	Mean Square	F. Ratio	P-value	Remark
Regression	2100.506	1	2100.506	190.292	.000 ^b	S
Residual	1479.133	134	11.038			
Total	3579.640	135				
Multiple R (r_p) = .766 ^a						
R. Square (r^2) = .587						
Adjusted R ² = .584						
Standard Error of Estimate = 3.32240						

a. Dependent Nutritional Status
 b. Predictors: (Constant), Pastries

Table 3 shows that the use of the consumption of pastries to predict the nutritional status of the elderly in Obio-Akpor Local Government Area, Rivers State Nigeria yielded a coefficient of multiple regression R (r_p) of 0.766 and multiple regression square (R^2) of 0.587 This also shows that F is 190.292 which is significant at $P < 0.05$ because the value of P is less than 0.05. This shows that the consumption of pastries accounted for

approximately 59 percent of the variance in the nutritional status of the elderly in Obio-Akpor Local Government Area, Rivers State Nigeria. In other words, 59% of the variance in the change in the nutritional status of the elderly in Obio-Akpor Local Government Area, Rivers State Nigeria can be explained by pulling the different variables of consuming pastries together.

Table 4: Summary of multiple linear regression analysis on the contribution of the consumption of roasted plantain or bole to the nutritional status of the elderly in the study area

Source	Sum of Squares (SS)	Df	Mean Square	F. Ratio	P-value	Remark
Regression	1939.945	1	1939.945	158.537	.000 ^b	S
Residual	1639.694	134	12.237			
Total	3579.640	135				
Multiple R (r _p) = .736 ^a						
R. Square (r ²) = .542						
Adjusted R ² = .539						
Standard Error of Estimate = 3.49807						

a. Dependent Variable: Nutritional Status
 b. Predictors: (Constant), Roasted Plantain or Bole

Table 4 shows that the use of the consumption of roasted plantain or bole to predict the nutritional status of the elderly in Obio-Akpor Local Government Area, Rivers State Nigeria yielded a coefficient of multiple regression R (r_p) of 0.736 and multiple regression square (R²) of 0.542 This also shows that F is 158.537 which is significant at P < 0.05 because the value of P is less than 0.05. This shows that the consumption of roasted plantain or bole accounted for approximately 54 percent of the variance in the nutritional status of the elderly in Obio-Akpor Local Government Area, Rivers State Nigeria. In other words, 54% of the variance in the change in the nutritional status of the elderly in Obio-Akpor Local Government Area, Rivers State Nigeria can be explained by pulling the different variables of consuming roasted plantain or bole together.

Discussion of Findings

The result in Table 1 revealed a grand mean score of 2.97 which indicated that the extent consuming pastries influence the health of the elderly in Obio-Akpor Local Government Area include: consuming wheat-based snacks reduces the intake of dietary protein and micronutrient, the lack of vegetables in some pastries reduces the essential vitamins, minerals and fiber that can help reduce heart disease, high blood pressure and Type II diabetes, the high cholesterol in the oil used for producing some pastries reduces the heart functioning of the elderly, the absence of vegetables in most pastries reduces the energy that will sustain the busy life of some elderly, the egg yoke added to some pastries reduces vital phytochemicals that helps to protect health of the elderly, the high cholesterol content of oil used for pastries exposes the elderly to cancer prevalence and body weight gain, pastries contain less sodium and phosphorous which decrease fluid balance and nerve impulse transmission, and frying of most pastries reduces the phytochemicals that can boost the immunity level of elderly. This finding is consistent with earlier findings by Olayiwola, Folaranmi, Adebowale, Onabanjo, Sanni and Afolabi (2012) [4] that the consumption snacks or foods with insufficient vegetables and high in fiber content accentuates nutritional diseases like obesity (weight gain), diabetes, and cancer. Corroborating this view, Obasi, Uchechukwu and Eke-Obia (2012) [3] emphasized that the intake of snacks (like biscuits) with high fiber, low or reduced micronutrients and phytochemicals exposes the elderly to be vulnerable to heart diseases, high blood pressure, and unprotected health.

The result in Table 2 revealed a grand mean score of 3.01 which indicated that the extent consuming roasted plantain or bole

influence the health of the elderly in Obio-Akpor Local Government Area include: the low nutrient composition in roasted bole affects the function of the elderly immune system, the mode of displaying the roasted plantain leads to their contamination with pathogenic bacteria that weakens the elderly, the elderly are weakened by eating bole without the essential nutrients, roasted plantain has very low nutritional value and energy needed for physical activity, roasted bole lacks the micronutrients that increases the bone mineral density that can prevent fractures in the elderly, the improper cooking of the bole can cause indigestion which destabilizes the elderly, the insufficient nutrient in roasted bole makes the elderly consuming it to be under nourished, and roasted plantain has little nutrient retention level that affects the strength of the elderly.

This finding is in agreement with the views of Olayiwola, Folaranmi, Adebowale, Onabanjo, Sanni and Afolabi (2012) [4] that improper cooking of some foods (like roasted plantain or bole) makes it to have inadequate nutrients required for the proper nourishment, physical activity, strength, and vitality of the elderly. Hence, Sholeye, Jeminusi, Orenuga and Ogundipe (2014) [7] stated that the access to quality and safe foods that will enhance their nutritional status, physical and mental health will also free the elderly from the raging risk of nutritional diseases like obesity, rickets, respiratory problems, etc.

The result in Table 3 revealed that shows that the consumption of pastries statistically (approximately 59 percent) contributed and significantly (P < 0.05 or less than 0.05) influenced the nutritional status of the elderly in Obio-Akpor Local Government Area, Rivers State Nigeria. This finding is in agreement with Mozaffarian, Hao, Rimm, Willett and Hu (2011) [2] that dieting in certain foods like snacks or pastries induces weight gain and other dietary diseases alongside lifestyle that influences the nutritional status of the elderly men and women.

The result in Table 4 revealed that shows that the consumption of roasted plantain or bole statistically (approximately 54 percent) contributed and significantly (P < 0.05 or less than 0.05) influenced the nutritional status of the elderly in Obio-Akpor Local Government Area, Rivers State Nigeria. This finding is consistent with the position of Afolabi *et al.* (2012) that the consumption of foods or diets like roasted plantain or bole with very low nutritional composition and retention value constitutes under-nutrition which malnourishes and triggers the poor nutritional status for the elderly who is now susceptible to varying nutritional diseases like diabetes, obesity, etc.

Appendix: Consumption of Street Foods and the Nutritional Status of the Elderly Questionnaire (CSFNSEQ)

Instruction: Please tick (√) where applicable to you

Section A: Demographic Variables

1. Location of Respondent: Akpor () Apará () Evo () Obio ()

2. **Gender:** Male () female ()
3. **Age of Respondents:** 60-70 () 71-80 years () 81 years and Above ()
4. **Source of Income:** Self () Children () Family () Community members () Government ()
5. **Occupation:** Civil servant () Company worker () business/trading () Retiree () Unemployed ()
6. **How often do you consume street foods:** Daily/regularly () Sometimes () Once in a while () Never ()

Section B: Item Response

Instruction: Please tick (√) where applicable in the spaces provided which best expresses your opinion using these clues: “Very High Extent” (VHE = 4 Points), “High Extent” (HE = 3 Points), “Low Extent” (LE = 2 Points) and “Very Low Extent” (VLE = 1 Point).

S/N	The extent pastries influence the health of elderly include:	VHE	HE	LE	VLE
1	Frying of most pastries reduces the phytochemicals that can boost the immunity level of elderly				
2	The absence of vegetables in most pastries reduces the energy that will sustain the busy life of some elderly				
3	The egg yoke added to some pastries reduces vital phytochemicals that helps to protect health of the elderly				
4	The high cholesterol in the oil used for producing some pastries reduces the heart functioning of the elderly				
5	Consuming wheat-based snacks reduces the intake of dietary protein and micronutrient				
6	The lack of vegetables in some pastries reduces the essential vitamins, minerals and fiber that can help reduce heart disease, high blood pressure and Type II diabetes				
7	The high cholesterol content of oil used for pastries exposes the elderly to cancer prevalence and body weight gain				
8	Pastries contain less sodium and phosphorous which decrease fluid balance and nerve impulse transmission				
	The extent roasted plantain or bole influence the health of elderly include:	VHE	HE	LE	VLE
9	Roasted plantain has very low nutritional value and energy needed for physical activity				
10	Roasted bole lacks the micronutrients that increases the bone mineral density that can prevent fractures in the elderly				
11	The insufficient nutrient in roasted bole makes the elderly consuming it to be under nourished				
12	The mode of displaying the roasted plantain leads to their contamination with pathogenic bacteria that weakens the elderly				
13	The improper cooking of the bole can cause indigestion which destabilizes the elderly				
14	Roasted plantain has little nutrient retention level that affects the strength of the elderly				
15	The low nutrient composition in roasted bole affects the function of the elderly immune system				
16	The elderly are weakened by eating bole without the essential nutrients				

Conclusion

The study concludes that the consumption of street foods like pastries (like cakes, pies, doughnuts, scotch egg, etc.) and roasted plantain or bole influenced the health and vitality (otherwise the nutritional status) of the elderly. These street foods were found to contain low nutrient quality and retention level, high cholesterol, insufficient phytochemicals, and reduced minerals, vitamins and fiber which led to: reduced energy needed for physical activity, poor heart functioning, increased high blood pressure, prevalence of diabetes, and low immunity level respectively. In other words, the consumption of pastries and roasted bole made the elderly in Obio-Akpor Local Government Area to have poor nutritional status.

Recommendations

Based on the findings of the study the following recommendations were proffered:

1. Nutritionists and dieticians should provide information and advice on the consumption of foods that will benefit the health and vitality of the elderly.
2. Nutritionists and dieticians should advocate against using high cholesterol oil for producing snacks or pastries that will reduce the functioning of the heart when consumed.
3. Producers of snacks are encouraged to be sensitive to the health of the elderly by producing pastries with reduced egg yoke content which reduces the vital phytochemicals that will protect the health and immunity level of the elderly.
4. Families of the elderly should be encouraged to help the elderly to consume high nutrient value organic snacks with vital vitamins and minerals that will help protect the health and improve the nutritional status of the elderly.
5. Producers or sellers of roasted plantain should ensure that their bole is properly cooked to avoid indigestion which destabilizes and retards the agility of the elderly.

6. The elderly should consume roasted plantain spiced with vegetables and other micronutrients to increase the nutrient retention level which will enhance the strength, physical activity, and vitality of the elderly.

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