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SOCIO-DEMOGRAPHIC PROFILE AND FOOD CONSUMPTION PATTERN OF THE ELDERLY IN NASARAWA STATE, NIGERIA

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ABSTRACT

The study sought to assess the socio-demographic profile and food consumption pattern of the elderly in Nasarawa State. The study was guided by two specific objectives. Two research questions were raised for the study. Survey research design was adopted for the study. The population of the study was 114, 973 persons living within the study area. The sample size of the study was 300 participants. The study employed questionnaire as an instrument for data collection and the data collected were analyzed using descriptive statistics of mean and standard deviation. The findings shows that, majority of the elderly (70.3%) ate 2-3 meals per day however, these meals mostly devoid of diary, legumes/eggs, meat/fish/poultry, as well as fruits and vegetables. Analysis of average daily intake of nutrients by the elderly respondents revealed that the intake of nutrients (apart from vitamin B1(1.0mg), Fe(16.8mg), and Cu(8.4mg).) were lower than the recommended value/day. The study concluded that there is a need for specific intervention programmes for the elderly in Nasarawa State to improve their nutritional status through dietary diversification and good food preparation practices. It is recommended that there should be a need for Public health intervention programs and health care institutions should promote dietary plans at the community level and encourage consumption of cheap locally available nutritious foods.

INTRODUCTION

1.1 Background of the Study

World Health Organization (WHO 2010) defines the older persons as all persons over the age of 60 years. Although there is no definitive definition of the older persons, it is generally agreed that it is a concept that reflects an age continuum starting sometimes after age 60 which is characterized by a slow progressive frailty that continues until the end of life

(Branko. et al 2018). Aging refers to irreversible continuous changes such as physiological, decline in physical and mental abilities which occur from birth to death and these changes may adversely affect food choice and dietary intake (Shatestein et al., 2013). The aging process encompasses more than a generation and exceeds three decades. The older adult population is categorized into 'young old', 'old' and 'oldest-old' (Snider, 1981; Gavizzi *et al.*, 2002; Suzman & Riley, 1985). The 'young old' are people in their 60s and early 70s who are active and healthy. The 'old' are people in their late 70s and early 80s who have chronic illness and are slowing down with some bothersome symptoms. The 'oldest-old' or 'old-old' are often sick, disabled, and perhaps even nearing death.

The changes associated with a chronologic aging can be divided into a few domains of 'normal aging' 'common diseases', and 'functional, cognitive/psychiatric and social changes'. Normal aging associated changes include sensory changes (hearing loss, visual acuity & vestibular function), muscle strength & fat changes and immuno-senescence (Davis, et al 2016). Cardiovascular disease, osteoporosis and dementia are common chronic conditions of old age; Osteoarthritis, diabetes and related mobility disability increase in prevalence as the population ages and becomes more overweight (Jaul & Barron, 2017).

The percentage of national populations over age 65 has been increasing in the last 10 years globally and will continue to rise for another 20 years due to improved life expectancy (United Nations, 2015). The increase in older population globally will potentially place significant burdens on healthcare and support services. Meeting the diet and nutrition needs of older people is crucial for the maintenance of health, functional independence and quality of life (Lestie and Hankey, 2015).

In Nasarawa State, Nigeria the family members are charged with the responsibility for the provision of care and support for the older person. Such care and support are voluntary and reciprocal, without any form of compensation. Family members, especially adult children, form the bulk of informal support for older persons. The care of the older relative is a value which is culturally rooted and highly respected. (Asiyanbola in Anda, & Marcus, (2016)).

Elderly diet should be varied and rich in complex carbohydrates and this should include wholegrain cereals, vegetables and fruits which should be consumed daily. Milk and their products are important to ensure adequate calcium for strong bones. Regular intake of fish will supply their bodies with vitamin D and essential fatty acids (Elmadfa & Meyer, 2008). The diet should contain nutrient-dense foods such as eggs, lean meat, liver, and soy products. Meal frequency should be about five to six small non-fatty meals to ensure lower body fat, lipid and blood glucose levels. Eating in the company of others is highly recommended. An

adequate water supply is important given their impaired thirst perception and reduced renal functions. Finally, they should be physically active. Simple exercises can help to strengthen their muscles and improve balance. (Ministry of Health, 2013).

The most widely consumed food items by the elderly in Nasarawa state are sorghum and maize-meal, yam, cassava and cocoa. These items are followed by bread only about a quarter of the elderly consumed green vegetables, rice, and other vegetables, melon, traditional beer, pumpkin, less number of the elderly ate 3 or more meals per day. The foods consumed by the elderly are mostly from plant based sources and animal based foods are only consumed when they have economic access to it (Asiyanbola in Anda, & Marcus, 2016)

Statement of the problem

Nutrition is an important element of health in the older population and affects the aging process. Older persons however, are particularly vulnerable to malnutrition, the prevalence of poor health observed among the elderly population in Nasarawa state as manifested in anemia, diminished physical functioning, poor wound healing, delayed recovery from sickness, frequent hospital admissions and mortality has raised concern of the researcher. This may point to the fact that many of the diseases afflicting the elderly in Nasarawa state may be the outcome of poor dietary intake aggravated by poor care and the ageing process itself. These conditions render the elderly in the state to becoming dependents. There is need to ascertain the influence of dietary intake, care practices and the ageing process itself on the nutritional status of the elderly in Nasarawa State. This will fill the data gap that will be used for planning and provision of improved care practices.

1.3 Objectives of the study

1.3.1 Main Objective

Study is designed to assess the impact of the dietary intake on the anthropometric indices and biochemical parameters of the elderly in Nasarawa State, Nigeria.

1.3.2 Specific Objectives

Specifically the study intends to:

1. Evaluate the socio-demographic profile of the elderly in Nasarawa State;
2. Assess the food consumption pattern of the elderly;

METHODOLOGY

A survey research design was adopted for the study. The design was considered appropriate because the study sought to obtain information from a relatively large population on the

prevailing conditions, opinions, perceptions, needs and experiences of the respondents regarding the variables under investigation. Survey research design enables researchers to collect data from a representative sample of a population through the use of structured instruments and to generalize the findings to the wider population. In this study, the design provided an appropriate framework for collecting information on the psychosocial, educational and social support needs of the target population, as well as their experiences and perceptions regarding the issues examined in the study.

The population of the study comprised 114,973 persons living within the study area. This population constituted the target population from which the sample for the study was drawn. The population was considered appropriate because it covered individuals residing within the geographical area of the study and provided the basis for obtaining respondents who possessed relevant information about the subject under investigation.

A sample size of 300 participants was selected from the population for the study. The sample was considered adequate for obtaining reliable information while making the data collection process manageable in terms of time, cost and other available resources. An appropriate sampling procedure was employed to select the participants from the target population and ensure that the sample adequately represented the population of the study. The sampling procedure also helped to minimize selection bias and enhance the generalizability of the findings.

The major instrument used for data collection was a structured questionnaire developed by the researcher based on the objectives of the study, research questions and relevant literature. The questionnaire consisted of clearly structured items designed to obtain information relating to the major variables of the study. The items were presented in sections to ensure systematic collection of information from the respondents. A suitable response scale was used to enable participants to indicate the extent to which they agreed with or experienced the issues presented in the questionnaire.

To establish the validity of the instrument, the questionnaire was subjected to expert review by specialists in the relevant areas of education, guidance and counselling, measurement and evaluation, and research methodology. The experts examined the instrument in terms of the relevance, clarity, adequacy and appropriateness of the items in measuring the constructs under investigation. Their observations and recommendations were incorporated into the final version of the questionnaire before it was administered to the respondents.

The reliability of the instrument was established through a pilot testing procedure involving respondents who were similar to those in the target population but were not included in the

main study. The data obtained from the pilot exercise were subjected to an appropriate reliability analysis to determine the internal consistency of the instrument. Necessary modifications were made to ambiguous or poorly performing items before the final administration.

The researcher, with the assistance of trained research assistants where necessary, administered the questionnaire to the 300 selected participants. The respondents were adequately informed about the purpose of the study and were assured that the information provided would be treated confidentially and used strictly for research purposes. Completed questionnaires were retrieved, screened for completeness and appropriately coded for analysis.

The data collected were analysed using descriptive statistics of mean and standard deviation. The mean was used to determine the average responses of the participants to the questionnaire items, while the standard deviation was used to determine the degree of variability in the responses. The results were presented in tables and interpreted in accordance with the research questions and objectives of the study. Where a decision benchmark was required for Likert-scale items, an appropriate criterion mean was established based on the response scale used in the questionnaire.

RESULTS AND DISCUSSION

This chapter presents results of the data analysis and discusses the findings of the research. The results of the study were presented according to research objectives as follows:

4.1 Result of Analysis on Objective 1.

Table 1. Social demographic characteristics of the elderly in Nasarawa State.

VARIABLE	FREQUENCY	PERCENTAGE
LGA		
Akwanga	105	35.0
Nassarawa Eggon	195	65.0
AGE CATEGORY		
60-70	187	62.3
71-80	83	27.7
above 80	30	10.0
GENDER		
Male	144	48.0
Female	156	52.0
MARITAL STATUS		
Divorced	1	0.3
Married	204	68.0
Separated	2	0.7
Widowed	93	31.0

RESIDENCE			
Urban	43	14.3	
Rural	257	85.7	
ETHNICITY			
Eggon	197	65.7	
Hausa	11	3.7	
Mada	89	29.7	
Migili	1	0.3	
Tiv	2	0.7	
RELIGION			
Christianity	178	59.3	
Islam	120	40.0	
Traditional	2	0.7	
EDUCATION			
Non-formal education	22	7.3	
None	182	60.7	
Primary	50	16.7	
Secondary	21	7.0	
Tertiary	25	8.3	
OCCUPATION			
Artisan	7	2.3	
Civil servant	8	2.7	
Farmer	100	33.3	
No occupation	140	46.7	
Pensioner	20	6.7	
Petty trader	14	4.7	
Teacher	11	3.7	
MONTHLY INCOME			
<N5000	150	50.0	
>50, 000	21	7.0	
10, 000 - 20, 000	26	8.7	
21, 000-30, 000	6	2.0	
31, 000 - 40, 000	8	2.7	
41, 000 - 50, 000	12	4.0	
5, 000 - 10, 000	77	25.7	
AVERAGE HOUSEHOLD SIZE	Mode	Median	Standard deviation
9.09	5.0	7.22	6.716

Table 1 on Social demographic characteristics of the elderly in Nasarawa State shows a total of 300 elderly participants; 105 (35%) from Akwanga and 195(65%) were included in the study. Distribution of the participants on basis of age was 187(62.3), 83 (27.7%) and 30 (10.0%) for age categories 60-70, 71-80 and above 80 years respectively. Of these 144 (48.0%) were male and 156 (52%) were female. Among the participants, 204(68.0%) were married, 93(31.0%) were widowed, 1(0.3%) were separated and 2(0.7%) were divorced. The table further reveals that, 257(85.7%) of the elderly resided in rural area while 43 (14.3%) resided in urban areas. Majority of the elderly 197(65.7%) were of the Eggon ethnic group,

89(29.7%) were Mada, 11(3.7%) were Hausa, 2(0.7%) were Tiv and 1(0.3%) were Migili. Of the number, 178(59.3%) were Christians, 120(40.0%) were Moslems and 2(0.7%) were Traditionalists. Those with no education were 182(60.7%), with primary school education were 50(16.7%), and 8.3% had obtained tertiary education. The rest 22(7.3%) and 21(7.0%) had non formal and secondary education respectively. In terms of occupation, majority 140(46.7%) of the elderly had no occupation, 100(33.3%) were farmers, 20(6.7%) were pensioners, 14(4.7%) were petty traders, 11(3.7%) were teachers, 8(2.7%) were civil servants, and 7(2.3%), were artisans. A monthly income ranging from less than N5000 Naira was reported by 50.0% and 25.7% of elderly participants had N50000- N100000 monthly income.

4.2 Result of Analysis on Objective 2

Assess the Food Consumption Pattern of the Elderly in Nasarawa State

Result of analysis on Food Consumption Pattern of the Elderly in Nasarawa State is presented on table 2 (Food intake habits) and chart 1 (Food group intake) as follows:

Food habits and factors affecting food intake among elderly people in Nasarawa state by residence

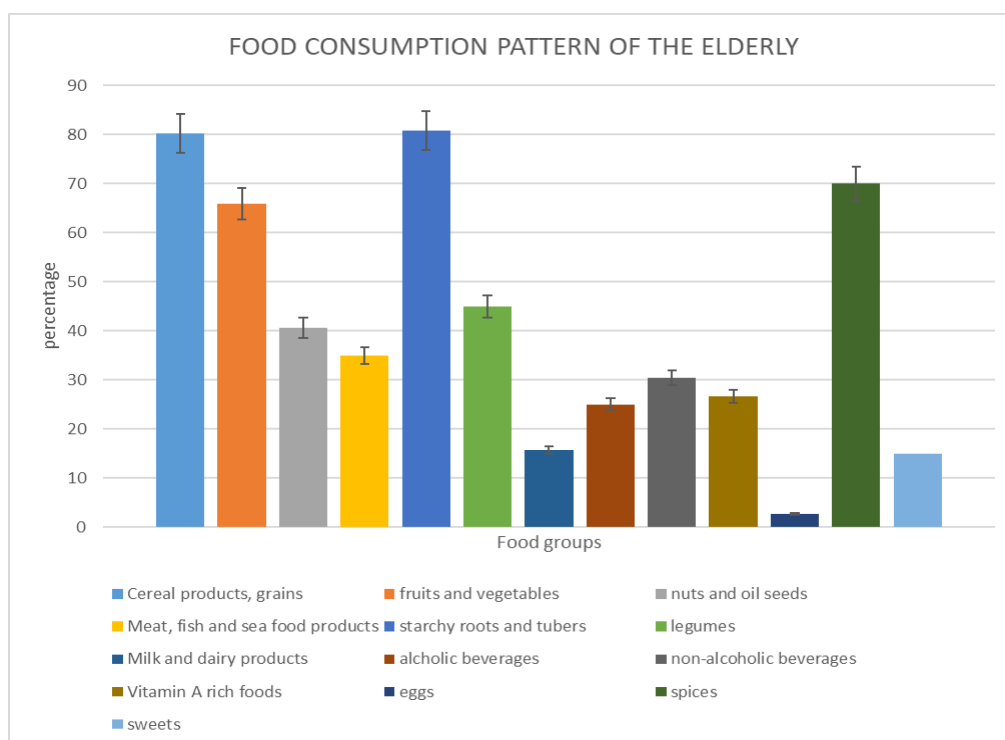
Variable	Residence		TOTAL (n = 300)	χ^2	P- Value
	Rural (n = 257)	Urban (n = 43)			
Weekly household expenses on food					
<N2, 000	73 (24.3%)	0 (0.0%)	73 (24.3%)	18.44	0.000 *
>N3, 000	84 (28.0%)	15 (5.0%)	99 (33.0%)	0	
N 3, 000	35 (11.7%)	11 (3.6%)	46 (15.3%)		
N2, 000	65 (21.7%)	17 (5.7%)	82 (27.4%)		
Meals are prepared by					
Children	148 (49.3%)	28 (9.3%)	176 (58.6%)	14.506	0.006 *
House help or aide	2 (0.7%)	0 (0.0%)	2 (0.7%)		
Relative	26 (8.7%)	1 (0.3%)	27 (9.0%)		
Self	5 (1.7%)	5 (1.7%)	10 (3.4%)		
Spouse	76 (25.3%)	9 (3.0%)	85 (28.3%)		
Number of meals per day					
Once	11 (3.7%)	0 (0.0%)	11 (3.7%)	1.933	0.380
2-3 times	180 (60.0%)	31 (10.3%)	211 (70.3%)		
More than 3 times.	66 (22.0%)	12 (4.0%)	78 (26.0%)		
At least one serving of dairy per day					
Yes	21 (7.0%)	0 (0.0%)	21 (7.0%)	3.778	0.052 *
	236	43	279		

No	(78.7%)	(14.3%)	(93.0%)		
>2servings of legumes or eggs per week					
Yes	44 (14.7%)	5 (1.7%) 38	21 (7.0%) 279	0.813	0.367
No	213 (71.0%)	(12.7%)	(93.0%)		
Meat, fish or poultry every day					
Yes	23 (7.6%) 234	2 (0.7%) 41	25 (8.3%) 275	0.891	0.345
No	(78.0%)	(13.7%)	(91.7%)		
Consumption of 2 or more portions of fruits and vegs per day					
Yes	25 (8.3%) 232	3 (1%) 40	28 (9.3%) 272	0.329	0.566
No	(77.3%)	(13.3%)	(90.7%)		

*The Chi-square statistic is significant at $p < 0.05$ level. Percentages are row-wise.

Table 2 showed that, majority of the elderly 211(70.3%) take 2-3 meals per day. Only 78(26.0%) take meals more than 3times a day. The remaining 11(3.7%) take meals once a day. Of the meals taken, only 21(7.0%) take at least one serving of diary per day. Majority 236(78.7%) of the elderly do not. Only 21(7.0%) of the elderly take 2 servings of legumes or eggs per week. The remaining 279(93.0%) do not. 275(91.7%) do not take meat, fish, or poultry everyday. Out of the 300 elderly, only 25(8.3%) accepted that they take meat, fish or poultry everyday. The table revealed that, 28(9.3%) agreed that they consume 2 or more portions of fruits and vegetable per day. The rest 272(90%) do not. This means that, majority of the elderly take 2-3 meals per day but most of these meals hardly include diary, legumes or egg, poultry, fruits and vegetables.

Food groups consumed among these elderly is represented in chart 1 below:



DISCUSSION

The present study assessed the nutritional status of elderly persons in Nasarawa State. The findings revealed that 211 (70.3%) of the respondents consumed two to three meals per day. This suggests that meal frequency may be an important nutritional concern among the elderly in the study area. Although two to three meals daily may be adequate for some individuals, the nutritional quality and diversity of those meals are equally important. The finding is consistent with Tessfamichael, Gete and Wassie (2014), who reported a mean meal frequency of 2.9 meals per day among elderly people in Ethiopia, with irregular meal times. This similarity suggests that inadequate or irregular meal consumption may be a common nutritional challenge among older adults in developing countries.

According to WHO (2002), elderly persons may have difficulty consuming large meals and, consequently, inadequate meal frequency may prevent them from meeting their recommended dietary allowances for essential macro- and micronutrients. The present study further showed that roots and tubers constituted a major part of the respondents' diet, while 80.2% consumed cereals and grain products. Although these foods are important sources of energy, heavy dependence on them without adequate complementary foods may result in an imbalanced diet.

The study also found that respondents had poor consumption of legumes, meat, fish, poultry and other protein-rich foods. This is a concern because adequate protein is essential for

maintaining muscle mass and physical functioning among elderly persons. Fish and other animal-source foods also provide important nutrients, including essential fatty acids. The finding agrees with Ondigi and Ondigi (2012), who reported that elderly persons in Nyanza Province, Kenya, had low consumption of fish, poultry and eggs, which was attributed partly to poverty and cultural taboos.

Furthermore, the poor consumption of fruits and vegetables observed among the respondents indicates low dietary diversity. Fruits and vegetables are important sources of vitamins, minerals and dietary fibre and are particularly important for maintaining good health in old age. The observed dietary pattern may therefore provide adequate energy while leaving some elderly persons vulnerable to deficiencies of essential nutrients.

Overall, the findings indicate that elderly persons in Nasarawa State may face nutritional challenges associated with limited meal frequency, high dependence on staple carbohydrate foods and inadequate consumption of protein-rich foods, fruits and vegetables. There is therefore a need for nutrition education and community-based interventions that promote affordable, locally available and culturally acceptable balanced diets for elderly persons. Addressing economic and food-access barriers is also important for improving the nutritional well-being of this vulnerable population.

CONCLUSION

The study concluded that elderly persons in Nasarawa State experience nutritional challenges characterized by limited meal frequency, high dependence on carbohydrate-based foods, and inadequate intake of protein-rich foods, fruits and vegetables. These dietary patterns may increase their risk of nutrient deficiencies and poor health outcomes, highlighting the need for improved access to affordable and balanced diets.

RECOMMENDATIONS

1. **Nutrition education:** Health workers should provide regular nutrition education to elderly persons and their caregivers on affordable and balanced diets.
2. **Improved food access:** Government and community organizations should support elderly persons with affordable access to protein-rich foods, fruits and vegetables.
3. **Community support:** Community-based programmes should promote locally available and culturally acceptable nutritious foods for elderly persons.