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Prevalence of Malnutrition and Morbidity Pattern among Neglected Geriatric Population in Rural Area of Ondo State, Southwest, Nigeria

Olanrewaju OI[1,4,5]*, Ebenezer OD[2], Bolajoko OO[3] and Alebiosu IA[4]

[1]*Public Health Department, National Open University of Nigeria, Abuja, Nigeria*

[2]*Public Health Department, Swansea University, Wales United Kingdom*

[3]*Nutrition and Dietetics Department, Federal University of Agriculture, Abeokuta, Nigeria*

[4]*Human Nutrition and Dietetics Department, Afe Babalola University, Ado-Ekiti, Nigeria*

[5]*Nutrition and Dietetics Department, Rufus Giwa Polytechnic, Owo, Ondo State, Nigeria*

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***Corresponding author**: Olanrewaju OI, Public Health Department, National Open University of Nigeria, Abuja and Nutrition and Dietetics Department, Afe Babalola University, Ado-Ekiti, Nigeria

Abstract

Background: Good dietary pattern is a significant factor in determining the health of geriatric because it affects almost all physiological systems, which could lead to varieties of diseases and premature death.

Objective: This study aimed to Prevalence of malnutrition and Morbidity Pattern among Neglected Geriatric Population in Rural Area of Ondo State, Southwest, Nigeria.

Methods: The study was a descriptive cross-sectional study in design, which involved 346 elderly (aged 60–90) who were systematically sampled from six rural communities in the Owo Local Government Area, Ondo State. A structured, interviewer-administered questionnaire was used to source information from the respondents on demographical characteristics, Socio-economic status using household durable goods, morbidity and dietary pattern of the respondent. Body mass index was calculated and classified in line with World Health Organization standards. The statistics package for social science, version 25, was used to analyzed the generated data. Descriptive statistics, and chi-square, were employed. The level of significance was determined using a probability of ($p<0.05$).

Results: A total of 346 respondents participated in the study with an average age of 72 ±2.4years. About 37.6% of the elderly were within the age range of 60–64 years. Significant difference ($p<0.05$) existed between sexes and socio-demographic variables. The dietary diversity score shows that 66.5% and 7% had a medium and poor dietary diversity score, respectively. Significant differences were observed ($P< 0.05$) between the male and female elderly in the dietary diversity score ($P = 0.002$), in the consumption of cereals ($p = 0.008$), roots and tubers ($p = 0.002$), and fruits ($p = 0.006$). Egg (17.6%) and milk (36.2%) were the least consumed protein among the elderly while Overweight (30%), obesity (15.9%), and malnutrition (20.2%) were more prevalence among the female elderly. Morbidity pattern shows that 3.1% were diabetic, body pain (73.5%) and joint pain (60.1%) while 20.5% were hypertensive. Malaria, dementia and eye problem were found among 54.1%, 12.0% and 18.8% respectively. Only (32.2%) of the respondents had depression while (25.9%) complained of loss of appetite.

Conclusions: Malnutrition and poor morbidity pattern were still major problems among the elderly in rural communities. As such, this poses a public health challenge that demands specific nutrition and medical interventions targeting the elderly and the community.

Keywords: Morbidity Pattern; Malnutrition; Geriatric; Rural Area; Dietary Diversity

Introduction

Good dietary pattern is a significant factor in determining the health of geriatrics age 60 and above because it affects almost all physiological systems. If dietary pattern is compromised, it could lead to several of diseases and premature death [1]. Studies had shown that good dietary pattern slow down ageing, which is a process of irreversible, ongoing changes in physiology, physical structure, and mental abilities [2,3]. These changes may have a negative impact on eating habits and dietary intake [4]. Multiple physical, social, and physiological changes that take place in people as they age make aging a multifaceted process [5]. According to the "National Policy on older Persons," the geriatrics is those who are 60 years of age or older [6].

According to World Health Organization (WHO), ageing population have continued to rise and, over half of the world older person population will reside in developing countries in 2050 [7]. It has been predicted that by 2050, the number of older people in Sub-Saharan Africa will rise to 141 million, with more of them living in rural areas [8]. These calls for more awareness and information about health care and safety net preparedness in Sub-Saharan Africa to manage the population increase of these older adults. Although, some studies had highlighted issues of poverty and poor public governance and lack of agenda for care of the ageing population [9]. While there are policies and program on health and nutrition, they are mainly focus on children and maternal health [7,10]. The older person's populations have not received so much attention with regards to health surveillance, nutrition status assessment and reduction of malnutrition, thereby increasing their risk of morbidity and mortality [5,11].

Nutritional requirements fluctuate throughout life, and for the elderly in particular, these changes may be caused by the natural aging process, certain medical conditions, or a person's lifestyle. Nutritional status assessment is crucial for healing as well as for preventing or maintaining a variety of chronic and acute diseases. Nutrition is also seen as a key factor in older adults' better health [11]. As people get older, their bodies go through many changes that might or might not have an impact on their nutritional status. Age-related bone density decreases, which raises the risk of osteoporosis, is an odd issue. Other age-related changes include sarcopenia and muscle loss, which can occur even in elderly people who are healthy. This suggests that metabolic changes are a universal feature of aging. Loss of strength, functional decline, and poor endurance may make this more obvious [12].

Several studies have shown the prevalence of 24% malnutrition and 46% malnutrition risk in community and hospitalized older adults [12]. In 2021, Olawumi et al, found a 25.3% of malnutrition and over 56.6% at risk of malnutrition among older population in northwest, Nigeria. On the other hand, a number of geriatric disorders are largely influenced by malnutrition. There is also evidence that malnutrition in older adult is cause by geriatric syndromes, which are characterized by poor digestion, dental disorder, wound healing issues, loss of taste and smell, frailty, among others [13].

In addition, geriatric disorders are complex and multifactorial conditions in older age and have serious implications for health [14]. They do not just comprise psychological issues; there are also clinical challenges such as incontinence, fall risk, visual and optical impairment, wound healing issues, frailty, and sarcopenia [15]. These clinical and psychological challenges increase morbidity in older adult which could lead to poor food intake and dietary pattern as well as malnutrition [16]. There is paucity of scientific data on the prevalence of malnutrition and morbidity pattern among most neglected geriatric population in rural areas of southwestern, Nigeria. In order to lower the rate of malnutrition and enhance the well-being of older adults in the study region, precise data on the prevalence of malnutrition is crucial for the development of suitable treatments aimed at improving the nutritional and health condition of older adults in Nigeria. Hence, this study aimed to evaluate the prevalence of malnutrition and morbidity pattern among most neglected geriatric population in rural area of southwestern, Nigeria.

Methods

Study Design and Settings/ Sampling Procedure

The study was a descriptive cross-sectional study of 346 community-dwelling older adults in rural district of Owo, Ondo State, Southwest, Nigeria. The study was conducted in six (6) rural communities in Owo local government in Ondo state. Owo is one of the first local governments established in Ondo state, southwest, Nigeria. Owo was selected because of its geographical location. It is located at the southern edge of the Yoruba Hills (1,130 feet (344 meters) above sea level), and at the junction of the roads leading to Akure, Kabba, and Benin City [17] on latitudes 7o 111 and 7o1831 and longitudes 5o 351 and 5o 5831 East of the Greenwich meridian. Owo is at the centre of the southern, eastern and northern part of Nigeria with a population of more than 500,000 thousand inhabitant of the local government.

Multistage sampling method was used in selection of the wards for the study in the local government area. A total of eleven (11) wards existed in the study area, six (6) randomly selected. One (1) rural community was selected from each of the ward for the study making a total of six (6) rural communities in the study area. Systematic sampling procedure was adopted in selection sixty (60) respondents from each of the community for the study. Six (6) rural communities were involved in the study; they were selected owing to the fact that none of such study had been conducted in the last 15years specifically in the rural area of any part of Ondo state, southwest Nigeria. The study was conducted between October and January, 2023 (Figure 1).

Study population

Sample size determination and sampling technique

The sample size was determined using the formula for descriptive studies (18)

n= Z21- α/2 P(1-P)

d2

P is the proportion of the factor under investigation i.e., 25.3 (25.3% represents the prevalence of malnutrition among elderly in northern Nigeria (1). $z = 1.96 p = 25.3\% = 0.253$

$q = (1 - p) = 1 - 0.253 = 0.75,\ d = 5\% = 0.05$

$$n = \frac{1.96^2 \times 0.253 \times 0.75}{0.05^2}$$

$$N = 291$$

$Approximately\ to\ N = 300$

$Adjusting\ the\ sample\ size\ for\ 10\%\ non-response\ rate$

$$N_F = \frac{n}{1 - f}$$

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$$= \frac{300}{1-10\%} = \frac{300}{1-0.1}$$

$$= \frac{300}{0.9} = nF = 333$$

$$300 + 33 = 333 \; approximate \; to \; 350$$

$$Sample \; size \; = \; 350$$

Figure 1: Map of Ondo state, southwest Nigeria showing various local government with Owo in Ondo north senatorial district shade with pink color.

Inclusion and Exclusion Criteria

Elderly persons (60-90years) resident in the area for not less than six months who are willing to participate in the study was recruited while elderly persons who are unwilling to be part of the study, those who are severally ill or on wheelchairs at the time of the study was excluded.

Ethical Considerations

Ethical approval was obtained from the office of the Health commissioner, Owo local Government Health Department (OWLG/12/22/7961/T/134). Participants with poor nutritional status and problem during the course of data collection, received appropriate dietary counseling and while those adjudge to have severe or multiple morbidities were referred to primary health care center appropriately.

Methods of Data Collection

A pretested, interviewer-administered semi-structured questionnaire was then administered to the respondents by the research assistants, who were graduates of Nutrition and Dietetics. The questionnaire contained questions on social-demographical characteristics, dietary diversity of the respondents, food consumption pattern, morbidities patterns and nutritional status.

Dietary Diversity Score of the Respondents

Data on dietary diversity were gathered using an adaptation of the FAO [19] minimum dietary diversity for geriatric questionnaire. The respondent ingested food within 24 hours prior to data collection day was added up to determine the minimum dietary diversity for elderly (MDD-E). Based on FAO recommendations, foods were categorized into 12 groups and each food group included local items that were often consumed in the area. If one or more food items in a group are consumed, the response options were "Yes." Zero (0) points were awarded in the event that a food item was not consumed in a group, signifying "No." By adding up the quantity of food and food items consumed in each group separately, dietary variety was calculated. It was determined the final score, which ranged from 0 to 12. DDS terciles were used to categorize data into low (4), medium (5-8), and high (9-12) categories.

Weight and Height Measurement

A portable bathroom scale (HANSON model), which was calibrated to the nearest 0.1 kg, was used in the weighing of the respondent while standing straight on it with their arms by their sides and their heads straight while respondents' height was measured using an heigh to meter while standing upright, barefoot, with their backs to the height meter and their eyes straight ahead in the Frankfurt posture in line with WHO standard [20,21].

Morbidity Pattern of the Respondents

Chronic diseases as reported by respondents were record. These were diseases diagnosed by the clinicians in their previous visits to hospital as reported in the questionnaire and those diagnosis made at day of data collection were classified using the method described by Olawumi et al. [1].

Nutritional Assessment

The respondent's nutritional status was assessed with the Mini-Nutritional Assessment tool. The Mini-Nutritional Assessment tool has 18 items, which include dietary history, anthropometric measurements, and assessment of lifestyle habits, mobility, and medication, self-perception of nutrition and

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health and neuropsychological problems [22].

Statistical Analysis

Data were collated, coded and analyzed using the Statistical Package for the Social Sciences (SPSS) version 25 software. IBM SPSS Statistics for Windows, version 25.0. Armonk, NY: IBM Corp. Absolute numbers and simple percentages were used to describe categorical variables such as morbidity classes and nutritional status. The qualitative variables (such as sex, occupation and educational level) were expressed in frequencies and percentages. The Chi-square test was used to assess the significance of associations between categorical variables. Level of significance was set at $p<0.05$.

Results

Socio- Demographic Characteristics of the Respondents

A total of 346 respondents participated in the study with an average age of 72 ±2.4years. About two-third (37.6%) of the respondents were within the age of 60-64-years. More than half (59%) of the respondent were female while (41%) were male. Thirty-three-point eight percent (33.8%) of them had already lost their spouse. As at the time of data collection, 78.6% of the respondents were living with their family members of which 59.5% were in their own personal houses. This study includes 23.9% retirees, 31% traders and 16.8% farmers. More than half (58.1%) of the respondents still depend on their Personal effort/ work for income to survive while 15.3% sustained on pension arrears from Government. On education attainment, 19.7% had post-Secondary certificate, and 22.3% had secondary education certificate. Well water was the most source of water to the majority of the respondent; about 65.9% used well water while 21.1% were able to afford Borehole (Table 1) (Figures 2 & 3).

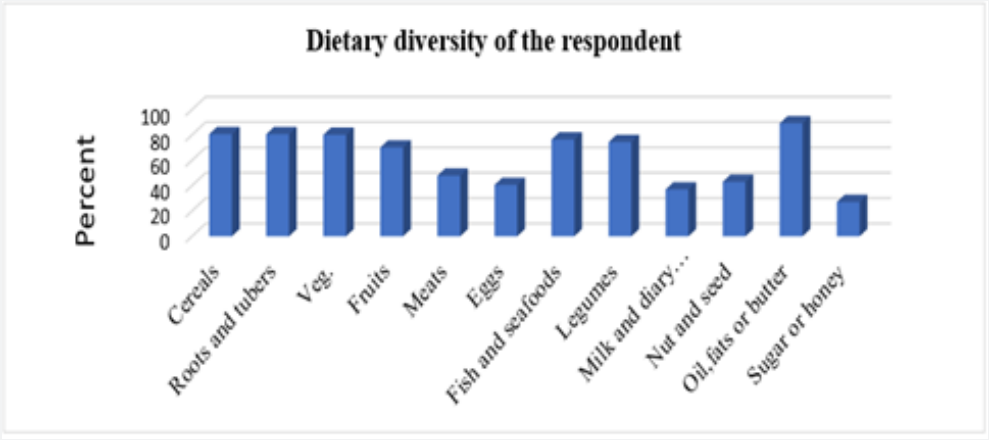

Figure 2: Varieties of food consumed within 24hours.

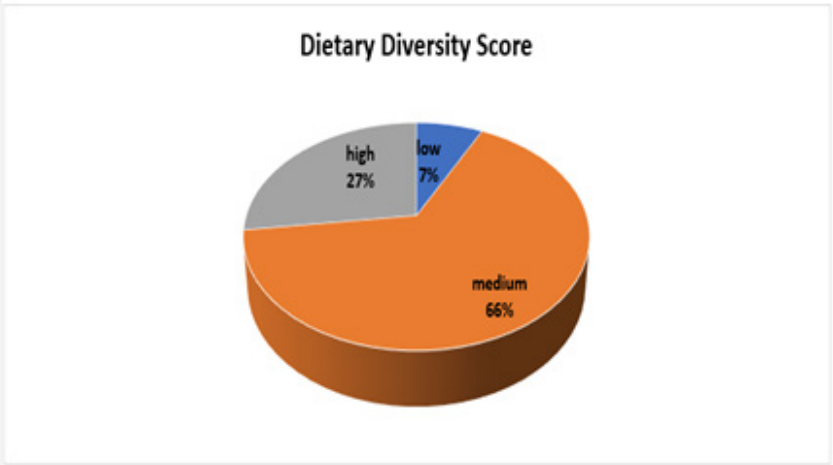

Figure 3: dietary diversity score of the older person. Source: Olanrewaju OI et al., 2022 field survey.

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Anthropometric Status of the Respondents

This study found that (5.2%) of the elderly were underweight while nearly half (49.0%) had healthful BMI range. Overweight and obesity which are 30% and 15.9% were more prevalence among the female elderly. Female respondents were not just more overweight and obese but the difference was statistically significant ($p<0.05$) (Table 2). The prevalence of malnutrition as revealed by the mini-nutritional assessment toolkit for the elderly shows that 20.2% of the geriatric populations in the study area were malnourished while 10.4% were at risk. The prevalence was more pronounced among the female elderly (Table 3) (Figure 4).

Table 1: Socio-Demographic Characteristics of the Subjects. *Significant at $p < 0.05$: Source; Olanrewaju, O.I et al., 2022 field survey.

Variable	Male (%)	Female (%)	Total (%)	X2	P value
Age (years)					
60-64	52(36.6)	78(38.2)	130 (37.6)	19.71	0.001*
65-70	22(15.5)	34(16.7)	56(16.2)		
71-74	19(13.4)	43(21.1)	62(17.9)		
75-80	28(19.7)	28(13.7)	56(16.2)		
81-90	21(14.8)	21(10.3)	42(12.1)		
Total	142(100.0)	204((100.0)	346 (100.0)		
Marital Status					
Married	115((81.0)	99(48.5)	214 (61.8)	43.218	0.000*
Widow/Widower	21(14.8)	96(47.1)	117(33.8)		
Separated/ Divorced	6(4.2)	9(4.3)	15 (4.3)		
Total	142(100.0)	204(100.0)	346 (100.0)		
Type of Housing					
Personal	92(64.8)	114(80.3)	206 (59.5)	6.641	0.084*
Rented	50(35.2)	83(58.4)	133(38.4)		
Family house	0(0.0)	7(3.4)	12 (3.5)		
Total	142(100.0)	204(100.0)	346 (100.0)		
Living Arrangement					
Alone	15(10.6)	16(7.8)	31(9.0)	7.593	0.055*
With family members	115((81.0)	157(77.0)	272(78.6)		
Relatives	12(8.4)	31(15.2)	44(12.4)		
Total	142(100.0)	204(100.0)	346 (100.0)		
Education Attainment					
None formal education	35(24.6)	45(22.1)	80(23.1)	6.649	0.156
Primary school	50(35.2)	71(34.8)	121(35.0)		
Secondary school	23(16.2)	54(26.5)	77(22.3)		
Post-Secondary	34(23.9)	34(16.7)	68(19.7)		
Total	142(100.0)	204(100.0)	346(100.0)		
Occupation					
None	9(6.3)	24(11.8)	33(9.5)	50.536	0.001*
Retired	40(28.2)	43(21.1)	83(23.9)		
Trading	22(15.5)	88(43.1)	110(31.8)		
Artisan	43(30.2)	18(8.8)	61(17.6)		
Farming	28(19.7)	30(14.7)	58(16.8)		
civil servant	0(0.0)	1(0.5)	1(0.3)		
Total	142(100.0)	204(100.0)	346(100.0)		

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Source of Income					
Personal effort/work	85(59.9)	116(56.9)	201(58.1)	22.118	0.001*
Support from children	20(14.1)	59(28.9)	79(22.8)		
Gift from others	3(2.1)	10(4.9)	13(3.8)		
Pension	34(23.9)	19(9.3)	53(15.3)		
Total	142(100.0)	204(100.0)	346(100.0)		
Source of water					
Personal Borehole	41(28.9)	32(15.7)	73(21.1)	16.494	0.006*
River/Lake/Stream	6 (4.2)	16(7.8)	22(6.4)		
Well	89(62.7)	139(68.1)	228(65.9)		
Community supply	6 (4.2)	17(8.3)	23(6.6)		
Total	142(100.0)	204(100.0)	346(100.0)		
Number of dependents					
No response	14(9.8)	22(10.8)	36(10.4)	6.401	0.041*
less than 3	64(45.1)	117(57.4)	181(52.3)		
3 or more	64(45.1)	65 (31.9)	129(37.3)		
Total	142(100.0)	204(100.0)	346 (100.0)		

Table 2: Body mass index of the Respondents. *Significant at p < 0.05.

Variables	Male= (142)	Female= (204)	Total n= 346	X2	P value
Body Mass Index	F (%	F (%)	F (%)	X2	P value
<18.5 (underweight)	6(4.2)	12(5.9)	18(5.2)	17.813	0.007*
18.5 – 24.9 (Normal)	85(59.9)	85(41.7)	170(49.1)		
25-29.9 (Overweight)	38(26.8)	65(31.9)	103(30.0)		
30-34.9 (Obesity class1)	10(7.0)	23(11.3)	33(9.5)		
35-39.9 (Obesity class 2)	3(2.1)	19(9.3)	22(6.4)		
Total	142(100.0)	204(100.0)	346(100.0)		

Table 3: Nutritional status of the respondents. *Significant at p < 0.05.

Variable	Male (%)	Female (%)	Total (%)	X2	P value
Nutritional status	F (%)	F (%)	Total (%)	15.15	0.014*
Normal	80(56.3)	160(78.4)	240(69.4)		
At risk	22(15.5)	14(6.9)	36(10.4)		
Malnourished	40(28.2)	30(14.7)	70(20.2)		
Total	142(100.0)	204(100.0)	346 (100.0)		

Morbidity Pattern of Respondents in the Last 12 Months

The figure below presents the morbidity pattern of the respondents. The prevalence of diabetes was 3.1%, nearly one-third of the respondent suffered body pain (73.5%) and joint pain (60.1%). Twenty-point five percent (20.5%) were hypertensive. Dental caries was found to be 14.2% of the entire population involves in the survey. The least diseases recorded among the subjects are Bloating and Defecation problem of which only 0.3% and 2.3% had the problem respectively. Malaria, dementia and eye problem were found among 54.1%, 12.0% and 18.8% respectively. Only (32.2%) of the respondents had depression while (25.9%) complained of loss of appetite (Table 4) (Figure 5).

Discussion

Socio- Demographic Characteristics of the Respondents

In this study, two-thirds of the respondents fall within the age distribution of 60-64 years. This was lower than the value obtained in a similar study among the elderly in south-west Nigeria [23-

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25]. In this study, there were more female participants than male participants; this is consistent with the study of Adepoju and Coker [25], which was conducted among the elderly in Ogun State, Nigeria. The reason for having more female participants in this study could be due to the enthusiasm shown by the female elderly and the fact that they were less busy and easier to approach, coupled with the fact that male participants were most often not available at home during the period of data collection. This finding disagreed with the findings of Olayiwola [23], on "Coping Strategy for Food Security among the Elderly in Ogun State, Nigeria," where male respondents (53%) were slightly higher than female respondents (47%).

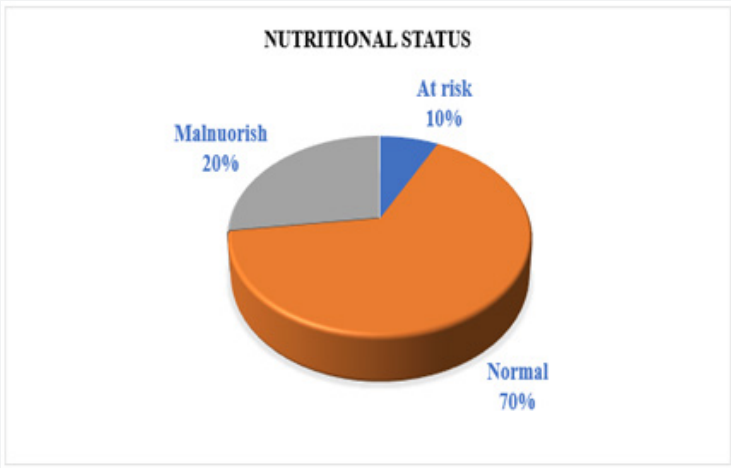

Figure 4: Nutritional status of the respondents. Source: Olanrewaju OI et al., 2023 field survey.

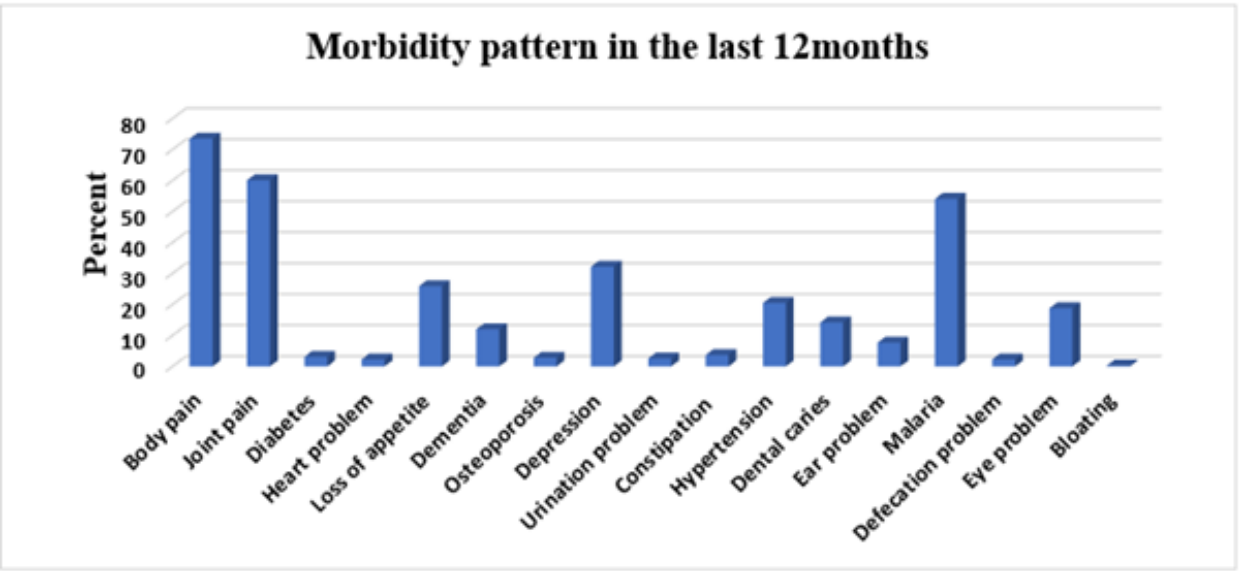

Figure 5: Morbidity pattern of respondents in the last 12months. Source; Olanrewaju OI, (2022) field survey.

The differences between the two studies could be linked to the number of samples and the method of data collection. Marital status is an important factor, particularly for older people, because it affects their health and nutritional status. Unmarried people are more likely to live alone and may lack the necessary assistance in obtaining and preparing food, as well as having company during meal times, which increases appetite and improves quality of life. The results of this study revealed that more than one-third of the respondents were widowed, separated, or divorced. Widowhood has been associated with poverty, hence food insecurity. Marital

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status is thought to have an influence on healthy aging. Reasons attributable to this trend may include decreased social isolation, spousal aid in buying and preparing food, and increased care giving.

Table 4: Association between BMI, DDS and Nutritional status of the respondents.

Variable		Nutritional Status of the Respondents			
BMI (kgm-2)	Normal (%)	At risk (%)	Malnourished (%)	Total (%)	X2; P-value
Underweight	2(0.8)	1(2.8)	15(21.4)	18(5.2)	17.165;0.003*
Normal	135(56.3)	10(27.8)	25(35.7)	170(49.1)	
Overweight	73(30.4)	15(41.7)	15(21.4)	103(30.0)	
Obesity class1	17(7.1)	8(22.2)	8(11.4)	33(9.5)	
Obesity class 2	13(5.4)	2(5.5)	7(10.0)	22(6.4)	
Total	240(100.0)	36(100.0)	70(100.0)	346(100.0)	
DDS					
Low /Poor	2(0.8)	15(41.7)	4(5.7)	21(6.1)	6.345; 0.025*
Medium/ Fair	163(67.9)	21(58.3)	48(68.6)	230 (66.5)	
High/Good	75(31.3)	2(5.5)	18(25.7)	95(27.5)	
Total	240(100.0)	36(100.0)	70(100.0)	346(100.0)	

*Significant at (P< 0.05). Key: BMI- Body mass index, DDS-Dietary diversity score.

Although more than half of the respondents lived in their own homes at the time of this report, observation of the housing situation revealed that the housing conditions for the elderly were deplorable. According to Kneale [26]'s meta-analysis, exclusion from adequate housing is a form of social exclusion meted out to the elderly. It was not difficult to single out the older person's house in the homestead as it was most likely the most dilapidated one, even though the study was conducted in a rural community. This result is in agreement with findings from Asiyanbola [27] in other parts of the country, which indicated that 69.6% of the elderly houses had cracked walls and floors while 63.9% were leaking and needed repairs. Poor housing conditions expose elderly people to elements of nature (rain, sun, and cold) as well as dangerous animals and abuse. The economic situation of the elderly in Nigeria is not quite different from what is available in other sub-Saharan African countries. South Africa and Namibia are currently the only African countries with a social security system that provides a monthly pension to people aged 60 and up [28].

In this study, there is a low level of education among the respondent, and more than half of them are still at that age and dependent on their personal effort to make ends meet, which is consistent with the findings of Adebusoye et al. [29] among elderly in Ilaro, Ogun State, Nigeria where 61% of the respondent depend on their personal effort for means of livelihood. Similarly, a higher number of the elderly were involved in trading businesses as a means of livelihood; this finding coincides with that of Afolabi et al. [24], where 31.4% of the elderly were traders. Poverty and poor care practices are linked to a lack of education and insufficient income [30].

Dietary Diversity or Dietary Diversity Score of the Respondent

The consumption of a variety of foods from different food groups (vegetables, fruits, grains, and animal foods) provides a balance of nutrients that promote healthy growth and development. Dietary diversity has been said to give an indication of the quality of the total diet in addition to having a positive association with nutritional adequacy [31]. Different studies have confirmed that diverse diets are associated with health benefits including protection against chronic diseases such as cancer [32], prolonged longevity, and improved health status. These results are consistent with the studies of Armond and Ruel [33] and Onyeji [31], who reported that the diets of most populations in the developing world are based principally on starchy foods and often include only a few animal products. Eggs and milk were not really consumed by the households. Oil contributed to a high intake of vitamin A because it was the main oil used in the preparation of stews, soups, and pottage by households in Nigeria. The high intake of cereals, roots, and tubers indicated that they were primarily grown as staple foods in the local government of study. Lack of dietary diversity in the diet is strongly associated with inadequate intake and the risk of deficiencies of essential micronutrients and over-consumption of cereals, roots, and tubers without corresponding intakes of protein and fruits. It could also lead to protein and micronutrient deficiencies. The low consumption of eggs, milk and milk products, and fruits suggests that households in the study area do not consume protein from a wide range of food groups that serve as sources of protein.

In addition, limited access to nutritious foods like eggs, milk,

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and milk products in this study area could be attributable to economic constraints and a lack of knowledge and information, which could predispose the households to deficiencies in protein, vitamin A, iron, and calcium. Micronutrient deficiencies have adverse effects on human health and nutrition [34]. The dietary diversity score in this study revealed that nearly two-thirds of the respondents had a medium dietary diversity score. This implies that the elderly in the study area consumed foods from 4-7 food groups within the previous 24 hours. This finding is in agreement with the findings of Onyeji [31], who reported a lower score for good dietary diversity and a higher score for both moderate and poor dietary diversity. Two-thirds of the respondents had an average dietary diversity score, despite the fact that intake of high-protein foods (such as meat, eggs, and milk) is low among the elderly studied. This implies that having an average dietary diversity score does not translate to having an adequate diet. This supports the study conducted by Agada and Igbokwe [35] in rural households in north-central Nigeria.

Anthropometric Status of the Respondent

Overweight and obesity, as determined by abnormal values for Body Mass Index (BMI), shows that findings from this study revealed nearly half of the study population were either generally overweight or obese and were seen more among the female elderly; this was higher than the 31.5% and 39.9% obtained among elderly in two local government areas of Osun State, Nigeria and market traders in Owo metropolis, respectively [36]. This study also revealed that 49.1% of respondents had a normal BMI, which is lower than the 66.7% obtained in a similar study conducted among the elderly in selected communities in Ibadan, Oyo State, Nigeria [25]. Overweight or obesity is defined as the abnormal or excessive accumulation of fat that may impair health. It does not only express the degree of excess fat but also fat distribution in the body, which determines the health risk associated with excessive weight gain [37-41]. Twenty-percent of the elderly were malnourished while 10% were at risk of malnutrition. Dietary diversity score and body mass index had a significant effect on the nutritional status of the respondents.

Morbidity Pattern of the Elderly

The geriatric population is geometrically increasing worldwide, and malnutrition is not uncommon with this population group due to poor socio-economic factors [29,30]. The health of the elderly population and the emergence of non-communicable diseases have become major and escalating clinical and public health issues [25]. Morbidity pattern revealed chronic diseases that are long-standing in their effects, and some of them can be hereditary, such as cardiovascular and metabolic diseases. In the current study, the incidence of musculoskeletal problems such as body pain and joint pain was very high. In addition, 2.9% of the respondent suffering from osteoporosis, and this could be attributed to inadequate calcium intake as evidence by the low consumption pattern of milk and milk products seen among the respondents. This value was lower than the reported value obtained by Munoru [30], among the elderly in Igembe South, Meru County, Kenya. Cardio-metabolic diseases such as diabetes mellitus, hypertension, and heart problems were also identified among the study population in the area.

In this study, 3.1% of the respondents were diabetics, lower than the 7.1% obtained by Uloko et al. [42] and 7.0% obtained by Olamoyegun et al. [43] among adults aged 20-60 in south-west Nigeria. Age is one of the non-modifiable risk factors in the development of prediabetes and type 2diabetes. The prevalence of both type 2 diabetes and prediabetes increases with advancing age [44]. Hypertension was another prevailing and disturbing disease among the respondents. The current study found that 20.8% of the elderly were hypertensive, which is consistent with the 20% of the elderly on hypertensive drugs in two Osun State local government areas (Olanrewaju et al., 2022), but lower than the value obtained among market traders in Owo metropolis [45].

The study revealed that male respondents were more hypertensive than their female respondents; this was in line with the submission of Olanrewaju et al. [46] that high blood pressure was more prevalent among female health workers in Jos. Previous studies have shown a high prevalence of various components of metabolic syndrome among the Nigerian population compared to the population of high-income countries, probably because of a higher prevalence of abdominal obesity, sedentary lifestyles, poor dietary habits, and insulin resistance [47]. Malaria was also one of the diseases that the respondent claimed to have had in the previous 12 months. Malaria affects more than 50% of the elderly in the study area. Malaria is endemic in Africa, and Nigeria, being the most populous black nation on earth, has the lion's share of the prevalence. Malaria has a great impact on the nutritional status of an individual.

Conclusion

Data generated revealed that despite the relatively easy access to farm products and the belief that rural residents should have access to fresh and wholesome food, the low intake of fruits and vegetables. Eggs, milk, and meat were also consumed in little amounts. The majority of the respondents have an average or medium scored of dietary diversity. The majority of foods consumed were carbohydrate-based, while protein-based items were less common. In light of this, the respondent exhibits malnutrition, as demonstrated by the study about twenty percent of the elderly were malnourished and more than ten percent were at risk of malnutrition. Less than half of the respondent had normal body mass index. Double burden of malnutrition was also observed among the study population. Morbidity was high, and the majority of elderly people had some sort of ailments cheaply body pain, joint pain, Malaria and depression.

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References

1. Olawumi AL, Grema BA, Suleiman AK, Omeiza YS, Michael GC, et al. (2021) Nutritional status and morbidity patterns of the elderly in a Northwestern Nigerian hospital: A cross-sectional study. Nigeria Postgraduate Med J 28(3): 160-168.
2. Olayiwola I, Fadupin G, Agbato S, Soyewo D (2012) Serum micronutrient status and nutrient intake of elderly Yoruba people in a slum of Ibadan, Nigeria. Public Health Nutr 17(2): 455-461.
3. Cadmus EO, Adebusoye LA, Owoaje ET (2021) Attitude towards ageing and perceived health status of community-dwelling older persons in a low resource setting: a ruralurban comparison. BMC Geriat 21(1): 454.
4. Shatenstein B, Gauvin L, Keller H, Richard L, Gaudreau P, et al. (2013) Baseline determinants of global diet quality in older men and women from the NuAge cohort. J Nutr Health Aging 17(5): 419-425.
5. Oladipupo OF, Emmanuel AAK, Ibrahim SB, Olarenwaju O, Samuel AO, et al. (2018) Determinants of Quality of Life of Elderly Patients Attending a General Practice Clinic in Southwest Nigeria. Int Q Community Health Educat 39(1): 3-7.
6. National policy on older person, p. 9.
7. Andia A, Fourera S, Souleymane B, Mamane D and Adehossi E (2019) Evaluation of Nutritional Status at Household in Elderly Assessed by Mini Nutritional Assessment (MNA) in West Africa Country, Niamey-Niger. Am J Gerontol and Geriatr 2(1): 1-4.
8. Selekane M, Tshifhiwa K, Lungile M (2021) Nutritional Status and Dietary Pattern of the Elderly in Tshiulungoma and Maniini Village of Thulamela Municipality, Vhembe District. J Nutr Health Aging 17(5): 419-425.
9. National Center for Biotechnology Information (2012) Nutrition and healthy aging in the community. Workshop summary. Washington (DC): National Academies Press (US).
10. Danielewicz AL, Barbosa AR, Del Duca GF (1992) Nutritional status, physical performance and functional capacity in an elderly population in Southern Brazil. Rev Assoc Med Bra 60(3): 242-248.
11. Nzeagwu OC (2016) Evaluation of Nutritional Status Using Anthropometry and Biochemical Indices of Community Dwelling Older Persons in Nigeria. Curr Res Nutr Food Sci 4.
12. Andia A, Souleymane B, Daou M, Zara M, Beydou S, et al. (2017) Geriatric in Patient Profile at the Department of Internal Medicine at Niamey National Hospital, Niger. ESJ 13(27): 279-284.
13. Won CW, Yoo HJ, Yu SH, Kim CO, Dumlao LCI, et al. (2013) Listof geriatric syndromes in the Asian-Pacific geriatric societies. Eur Geriatr Med 4: 335-338.
14. Rausch C, Van Zon SKR, Liang Y, Laflamme L, Möller J, et al. (2022) Geriatric Syndromes and Incident Chronic Health Conditions Among 9094 Older Community-Dwellers: Findings from the Lifelines Cohort Study. J Am Med Dir Assoc 23(1): 54-59.
15. Tan VMH, Pang BWJ, Lau LK, Jabbar KA, Seah WT, et al. (2021) Malnutrition and Sarcopenia in Community-Dwelling Adults in Singapore: Yishun Health Study. J Nutr Health Aging 25(3): 374-381.
16. Norazman CW, Adznam SN, Jamaluddin R (2020) Malnutrition as Key Predictor of Physical Frailty among Malaysian Older Adults. Nutrients 12(6): 1713.
17. Smith RS (1988) Kingdom of the Yoruba, (Maddison: university of Wisconsin Press 3rd edn.).
18. Araoye, MO (2008) Research Methodolgy with statitstic for health and social sciences. (2nd edn) Nathadex publication, saw-mill Ilorin pp. 115-122.
19. FAO, IFAD, UNICEF, WFP, WHO (2021) The State of Food Security and Nutrition in the World 2021. Transforming food systems for food security, improved nutrition and affordable healthy diets for all. Rome, FAO. Rome.
20. World Health Organization (2015) World Report on Ageing and Health. WHO Luxembourg p. 71-73.
21. World Health Organization (2017) Global strategy and action plan on ageing and health [Internet]. Global strategy and action plan on ageing and health. Geneva.
22. Nestle (2019) Malnutrition in Older Adult.
23. Olayiwola IO (2013) Coping strategy and food security among elderly in ogun state Nigeria. Afr J Biomed Res 16: 79-85.
24. Afolabi MO, Daropale VO, Irinoye AI, Adegoke AA (2013) Health seeking behavior and student perception of health care services in a university community in Nigeria. Health 5(5): 817-824.
25. Adepoju AB, Coker OJ (2018) Nutritional status, household food security and dietary diversity of the elderly residing in Ilaro, Ogun state, Nigeria. Int J Food Sci Nutr 3(6): 125-136.
26. Kane RL, Shamliyan T, Talley K, Pacala J (2012) The association between geriatric syndromes and survival. J Am Geriatr Soc 60(5): 896-904.
27. Asiyanbola AR (2009) Spatial behavior, care and well-being of the elderly in a developing country Nigeria. IFE PsychologIA 17(1): 1117-1421.
28. Torres MJ, Dorign YB, Kuhn M, Berr C, Barberger-Gateau P, et al. (2014) Nutritional Status in Community-Dwelling Elderly in France in Urban and Rural Areas. PLoS ONE 9(8): e105137.
29. Adebusoye LA, Ladipo MM, Owoaje ET, Ogunbode AM (2011) Morbidity pattern amongst elderly patients presenting at a primary care clinic in Nigeria. Afr J PHC Family Med 3(1): 1-6.
30. Munoru FK (2018) Dietary and care practices, morbidity and nutritional status of the elderly in Igembe south, meru county, Kenya. A thesis submitted to the school of applied human sciences of Kenyatta university pp. 1-152.
31. Onyeji GN, RA Sanusi (2020) Diet quality of women of childbearing age in South-east Nigeria. Nutr Food Science; 48(2): 348-336.
32. Vetrano DL, Rizzuto D, Calderón-Larrañaga A, Onder G, Welmer AK, et al. (2019) Walking Speed Drives the Prognosis of Older Adults with Cardiovascular and Neuropsychiatric Multimorbidity. Am J Med 132(10): 1207-1215.
33. Azzolino D, Arosio B, Marzetti E, Calvani R, Cesari M (2020) Nutritional Status as a Mediator of Fatigue and Its Underlying Mechanisms in Older People. Nutrients 12(2): 444-449.
34. Micronutrient Initiative (2018) Vitamin and mineral deficiency. A global progress report. Ottawa: Micronutrient Initiative; 2004.
35. Amarya S, Singh K, Sabharwal M (2015) Changes during aging and their association with malnutrition. J Nutr Gerontol Geriatr 6: 7884-7891.

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DOI: 10.19080/OAJGGM.2024.08.555732

36. Olanrewaju OI, Dele-Olawumi B, Adedayo EO, Yisa, OO (2023) Prevalence of Risk factors of Cardio-metabolic disease (CMD) among elderly in two Local Government Areas of Osun State. Nig J Nutr Sci 44(1): 25-35.

37. Young A, Vummidi D, Visovatti S, Homer K, Wilhalme H, et al. (2019) Prevalence, Treatment, and Outcomes of Coexistent Pulmonary Hypertension and Interstitial Lung Disease in Systemic Sclerosis. Arthritis Rheumatol 71(8): 1339-1349.

38. Zhang D, Tang X, Shen P, Si Y, Liu X, et al. (2019) Multimorbidity of cardiometabolic diseases: prevalence and risk for mortality from one million Chinese adults in a longitudinal cohort study. BMJ Open 9(3): e024476.

39. Zou Y, Yang M, Wang J, Cui L, Jiang Z, et al. (2020) Association of sclerostin with cardiovascular events and mortality in dialysis patients. Ren Fail 42(1): 282-288.

40. Olaitan OO, Omoniyi IO, Akinmoladun FO, Fadupin GT (2020) Central Obesity and Stress; A Predisposing factor to Hypertension among Health Workers in Jos University Teaching Hospital, Plateau state Nigeria. J Curr Res Diabetes & Obes 12(4): 555845.

41. Uloko AE, Ofoegbu EN, Chinenye S, Fasanmade OA, Fasanmade AA, et al. (2012) Profile of Nigerians with diabetes mellitus-Diabcare Nigeria study group (2008) Results of a multicenter study. Indian J Endocrinol Metab 16(4): 558-564.

42. Olamoyegun MA, Iwuala SO, Olamoyegun KD (2015) Insulin-related knowledge of healthcare professionals in a Nigerian tertiary health institution. Int J Diabetes Dev Ctries 35(4): 84-89.

43. Tancredi M, Rosengren A, Svensson AM (2015) Excess mortality among persons with type 2 diabetes. N Engl J Med 373(18): 1720-1732.

44. Bolajoko OO, Olanrewaju OI, Odugbemi BA (2020) Lifestyles, Health seeking behavior and body mass index of market traders in Owo, Owo local government area of Ondo state. Yenagoa Medi J 2(4): 81-89.

45. Olanrewaju OI, Olaitan OO, Roland-Ayodele MA, Umeaku PO (2020) Blood Pressure Patterns, Stress Assessment and Anthropometric Characteristics of Health Workers in Jos University Teaching Hospital, Jos, Nigeria. Nig J Nutr Sci 41(2): 46-56.

46. Egbi OG, Okafor UH, Miebodei KE, Kunle-Olowu OE, Unuigbe EI (2013) Prevalence of hypertension in an urban population in Bayelsa state, Nigeria. J Med Res Pract 2: 11-5.

DOI: 10.19080/OAJGGM.2024.08.555732

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