



ABSTRACT

The objective of this study was to determine the nutritional assessment of elderly people in Dokodza ward, Bida, Niger State, Nigeria. The study involved one hundred and thirteen (53 males and 60 females) elderly respondents randomly selected from their residences. A valid pre-tested well structured interviewer administered questionnaire was used to obtain information on the socio-economic characteristics,

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UTRITIONAL ASSESSMENT OF ELERLY PEOPLE IN DOKODZA WARD, BIDA, NIGER STATE.

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INTRODUCTION

Elderly is defined according to World Health Organization to be a group of old people that ranges from the age of 65years and above (WHO, 2018; Turkiye, 2020). There is high rate of diseases among the elderly which includes cognitive and physical decline, depressive symptoms and emotional changes of which results in the risk of healthcare services than the general public (Charlton, *et. al.*, 2007; Liska, *et. al.*, 2017). The dietary pattern of an elderly changes due to their health issues, decrease in taste and smell or inability to purchase and prepare food. Energy needed by the elderly may decrease due to physical activity limitations which may increase the effect of disease (Gaillard, *et. al.*, 2007; Ali, *et. al.*, 2021). Malnutrition in the elderly is a condition where there is inadequate nutrient consumption or undernourishment due to insufficient dietary intake, poor appetite resulting to muscle wasting and weight loss, hence, malnutrition in the elderly is a significant problem worldwide(Chen, *et. al.*, 2011; Sami, *et. al.*, 2016). Globally, there is prevalence of malnutrition among the elderly and when overlooked, leads to poor health and decreased quality of life (Chen, *et. al.*, 2011; Kaiser, *et. al.*, 2010; Sami, *et. al.*, 2016). Malnutrition causes impaired muscle function, decreased bone mass, delayed wound healing, reduced cognitive and immune function. (Donini, *et. al.*, 2013).



feeding pattern of the respondents and also the nutritional status of the respondents. The nutritional status of the respondents was assessed using Mini Nutritional Assessment- Short Form. The data was analysed using descriptive statistics. The age of the respondents ranged from 65 years and above. A high percentage (73.5%) had no formal education and 77% were farmers or traders, 45.1% earned less than ₦10,000 per month. About 56.7% of the respondents were fully dependent financially and 69% had their household size to be above four. 17.7% and 67.3% had severe decrease and moderate decrease in food intake over the past three months respectively. More than half per cent (55.8%) of the respondents had suffered psychological stress or acute disease in the past three months, 36.3% and 45.1% had severe dementia or depression and mild dementia respectively while 65.5% had BMI less than 19. The MNA-SF score of the respondents indicates that 13.3%, 52.2% and 34.5% of the respondents were well nourished, at risk of malnutrition and malnourished respectively. A significant proportion of elderly people are malnourished or at risk of malnutrition. Therefore, it is crucial to support a diet containing food and liquid with adequate and appropriate nutrition to prevent and treat malnutrition, address nutrition policies, those malnourished or at risk of malnutrition should be monitored periodically and also social support should be made available so as to reduce loneliness and depression.

Keywords: Mini Nutritional Assessment-Short Form, Nutritional Status, Feeding Pattern.

It also increases the risk of morbidity, mortality, unintentional weight loss, acute or chronic illness (Morley, *et. al.*, 2011; Ellisiv, *et. al.*, 2016).

Nutritional assessment is an assessment tool used to determine the nutritional status of people, advance their living condition and also develop strategies so as to address their nutritional problems. Due to the vulnerability of the elderly, there is need to assess their nutritional status (Yohannes, *et. al.*, 2022).

Mini Nutritional Assessment is the most common screening tool developed mainly for the elderly and it was developed in 1989 by the study group of Vellas and Guigoz. Mini Nutritional Assessment tool is a globally accepted and recommended nutritional assessment for the elderly with proven validity (Liska, *et. al.*, 2017). Mini Nutritional Assessment-Short Form (MNA-SF) is a screening tool that was introduced to assess the nutritional and functional status and also predict mortality among the elderly. It is a



screening tool that consists of four questions which includes anthropometric measures, appetite, morbidity and dietary intake (Ellisiv, *et, al.*, 2016).

MATERIALS AND METHODS

A descriptive survey design of the nutritional assessment of 113 (53 males and 60 females) of elderly respondents age 65years and above was conducted in Dokodza ward, Bida, Niger State. Bida is a local government with land area of 50.0 sq km and with total number of 188,181 people. It has 14 wards. The total population of elderly from 65years and above in Niger State is 3,968. Elderly people within Dokodza ward was selected using simple random and stratified sampling techniques.

A valid pre-tested well structured interviewer administered questionnaire was used to obtain information on the socio-economic characteristics, feeding pattern of the respondents and also the nutritional status of the respondents. The nutritional status of the respondents was assessed using Mini Nutritional Assessment-Short Form. Data collected was collated and interpreted using frequency, percentage, mean and standard deviation. Chi square test with its equivalent was used for qualitative variable. 25.0 version of SPSS was used to carry out the statistical analysis.

RESULTS

The socio-economic and demographic characteristics of the respondents presented in table 1. The age of the respondents ranged from 65years and above. 46.9% were male while 53.1% were female. 53.1% were 65-69 years, 25.7% were 70-74years, 11.5% were 75-79years and 9.7% were above 80years of age. About 19.5% were Christians while 80.5% were Muslims. 51.3% of the respondents were married, 3.5% were divorced, 38.9% were widow/widower while 6.2% were separated. From the research findings, it was obvious that 73.5% had no formal education, only 7.9%, 2.7%, 1.8% and 14.2% had primary, secondary, tertiary education and other form of education respectively. About 27.4%, 49.6% and 23% were farmers, traders and pensioner respectively. About 45.1% of the respondents earned less than ₦10,000 monthly, 17.7% earned between the range of ₦10,000- ₦20,000, 2.7% earned between ₦20,000- ₦29,000, 13.3% earned between ₦30,000- ₦39,000, 7.9% earned between ₦40,000- ₦49,000 while 13.3% earned above ₦50,000. Among the respondents, 56.7% were fully dependent financially, 27.4% were partially dependent while 15.9% were not dependent. The data collected showed that only 15.0% of the respondents have the household size of 3 persons, 15.9% of the respondents have the household size of 4 persons while the rest per cent which is 69.0% have the household size of more than four persons. 42 respondents sampled which account for 38.2% had an existing medical challenge while the rest respondents which is 61.8% has no existing medical challenge.



Table 1: Socio-economic and demographic characteristics of the respondents

Variables	Frequency (n=113)	Percentage (%)
Gender		
Male	53	46.9
Female	60	53.1
Age		
65-69	60	53.1
70-74	29	25.7
75-79	13	11.5
80 & above	11	9.7
Religion		
Christian	22	19.5
Muslim	91	80.5
Marital status		
Married	58	51.3
Divorced	4	3.5
Widow/widower	44	38.9
Separated	7	6.2
Educational status		
No formal education	83	73.4
Primary education	9	7.9
Secondary education	3	2.7
Tertiary education	2	1.8
Others	16	14.2
Occupation		
Farmer	31	27.4
Trader	56	49.6
Pensioner	26	23
Average income		
Less than 10,000	51	45.1
10,000-20,000	20	17.7
20,000-29,000	3	2.7
30,000-39,000	15	13.3
40,000-49,000	9	7.9
Above 50,000	15	13.3
Financial dependent		
Fully dependent	64	56.7



Partially dependent	31	27.4
Not dependent	18	15.9
Household size		
Three	17	15.0
Four	18	15.9
Above four	78	69.0
Any medical challenge		
Yes	42	37.2
No	71	62.8

Table 2 shows that 17.7% had severe decrease in food over the past three months, 67.3% had moderate decrease while 15% had no decrease. 15.9% of the respondents had loss weight greater than 3kg, during the last three months, 31.9% does not know if they had loss weight within the last three months, 46% had loss weight between 1 and 3kg during the last three months while 6.2% had no weight loss during the last three months. The result shows that 35.4% of the respondents are able to go out of the bed/ chair but does not go out and 64.6% of the respondents go out. Out of 100%, 55.8% of the respondents has suffered psychological stress or acute disease in the past three month while the remaining percent of the respondents (44.2%) has not suffered psychological stress or acute disease in the past three months. 36.3% of the respondents has severe dementia or depression, 45.1% of the respondents has mild dementia while 18.6% of the respondents has no psychological problem. The data collected shows that 65.5% of the respondents has BMI less than 19, 18.8% of the respondents has BMI to be 19 to less than 21, 3.5% of the respondents has their BMI to be 21 to less than 23 while 2.7% of the respondents has their BMI to be 23 or greater. Those who are physically challenged and their BMI could not be taken, their calf circumference was taken and about 22 respondents sampled which account for 19.5% where all less than 30cm.

Table 2: Nutritional Status of the respondents using MNA-SF

VARIABLES	FREQUENCY (%)
	n=113
Has food intake declined over the past 3 months?	
Severe decrease	20(17.7)
Moderate decrease	76(67.3)
No decrease	17(15)
Weight loss during the last 3 months	
Weight loss greater than 3kg	18(15.9)



Does not know	36(31.9)
Weight loss between 1 & 3kg	52(46)
No weight loss	7(6.2)
Morbidity	
Able to go out of bed/chair but does not go out	40(35.4)
Goes out	73(64.6)
Has suffered psychological stress or acute disease in the past 3 month	
Yes	63(55.8)
No	50(44.2)
Neuropsychological problems	
Severe dementia or depression	41(36.3)
Mild dementia	51(45.1)
No psychological problem	21(18.6)
F1-Body Mass Index (BMI)	
BMI less than 19	74(65.5)
BMI 19 to less than 21	10(8.8)
BMI 21 to less than 23	4(3.5)
BMI 23 or greater	3(2.7)
F2-Calf Circumference (CC) in cm	
CC less than 31	22(19.5)

Table 3 shows the distribution of respondents as per MNA score which states that 13.3% are well nourished, 52.2% of the respondents are at risk of malnutrition while the rest respondent which is 34.5% are malnourished

Table 3: Distribution of respondents as per MNA Score

MNA Status	Frequency (n=113)	Percentage (%)
Well-nourished	15	13.3
At risk	59	52.2
Malnourished	39	34.5

DISCUSSION OF RESULTS

The study gave an insight on the Nutritional Assessment of the elderly in Dokodza ward, Bida, Niger state.

Nutrition plays an important role in human health by affecting long-term health and due to the fact that it is a risk factor for chronic diseases. It can be influenced in order to



improve the efficiency of exercise and training. Optimal health and geriatric nutrition strategy today subject of numerous research. However, the recommendations may be controversial and may be misunderstood due to different religions, tribes, cultures and traditions as well as too many articles and online materials that can provide unfounded claims (Agarwilla, *et. al.*, 2015)

Despite its high prevalence and well documented adverse effects, malnutrition remains under-identified in this vulnerable group (Correia, *et. al.*, 2003).

This study revealed the socio-economic characteristics of the respondents ranging from the age, gender, religion, marital status, educational status, occupation, household size, existing medical challenge as well as monthly income of the respondents. The household characteristics range from one (1) person per household to four (4) persons and above. More than half of the respondents (68.2%) have a household size of more than four people which is rather too high compared to 45.1% of the respondents who earn less than ₦10,000 monthly and which is more likely to have elderly who are undernourished. It is likely that large family size tends to strain food budget especially in household with low income resulting in inadequacy of food needed to meet daily requirement. In such situation, the elderly are likely to be more vulnerable. Similarly, their educational level is another important factor that impacts dietary habit. This finding shows that about 73.5% of the respondents are illiterate.

Strong relationship between malnutrition and low income or financial dependency and no formal education status is consistent with other researches (Naidoo, *et. al.*, 2015; Oggunniyi, *et. al.*, 2001; Lahiri, *et. al.*, 2015; Ghimire, 2017). This may be because intake and even choices of food depend on the knowledge and awareness about its nutritional importance and course the purchasing power.

The risk for developing malnutrition among the respondents increases with the increasing medical challenge (37.2%). A similar finding was reported by Bell in a systemic review and in a cross-sectional study by Singh and Shrestha among elderly living in an old age home in Nepali (Bell, *et. al.*, 2013; Singh, *et. al.*, 2016). This was attributed to increase in the risk of chronic drug usage, frequent visits in hospital and consequently, a higher possibility for hospitalization (Singh, *et. al.*, 2016). Therefore, periodic nutritional screening is essential for elderly; especially females and those at advanced age so as to comprehensively examine identify and treat predisposing factors to malnutrition in them. As age increases, the need for medication also increases. Regardless of the definition, the elderly is a population group vulnerable to the negative consequences of polypharmacy.

The study gave an insight on the Nutritional assessment of elderly people in Dokodza ward, Bida. The study revealed that 32.7% of the elderly were malnourished and 53.6% were at risk according to the MNA screening tool. Ellisiv, *et. al.*, (2016) which had similar



results in their study at Oslo, Norway found that 58% of the elderly were at risk and 32% were malnourished. Saeidlou, *et. al.*, (2011) in Iran observed that a considerably higher percentage (49.6%) of the elderly were malnourished. Ferdous, *et. al.*, (2009), Baweja, *et. al.*, (2008) and Saka, *et. al.*, (2010) done in rural Tamil Nau, also had similar results in their studies. This could be due to the fact that these studies included the elderly with dementia, which is known to increase the risk of malnutrition (Morley, 1997). Other studies that employed the full MBA to assess the risk of malnutrition among the elderly were at risk of malnutrition or malnourished (Wakabayashi, *et. al.*, 2014; Schrader, *et. al.*, 2014).

Besides, the finding was higher than the study done in Harar, Ethiopia (15.7%) and Egypt (17.9%)(Abdu, *et. al.*, 2020; Mahfouz, *et. al.*, 2013). The discrepancy could be attributed to a population difference or geographical variation and it might be due to age group difference (Intemationai, 2004). Current study was also higher than the study conducted in Senegal (16.7%) and Kenya, Dagoretti district (11.4%)(Intemationai, 2004). The disparity could be attributed to difference in nutritional assessment method as well as geographical variation. Furthermore, more research finding in Senegal and Kenya used BMI to assess malnutrition whereas this study used MNA-SF to assess malnutrition (Guigoz, *et. al.*, 1996).

The observation in this study point conspicuously, to the fact that 85% of the respondents has decrease in their eating habit which might likely result to malnutrition. This was consistent with research conducted in Debre-Markos, Ethiopia (Adhana, *et. al.*, 2015). The possible explanation is that malnutrition may occur as a result of increasing age and a decrease in the sense of taste, smell, loss of appetite, digestive problems, chewing or swallowing difficulties, making it more difficult to enjoy eating and maintain regular eating habits.

Correspondingly, depression was found to be a factor for the elderly living in Dokodza ward. About 36.3% of the respondents have dementia or depressed and about 45.1% of the respondents have mild dementia, the justification could be that depression is one of the risk factors for malnutrition which decreases food intake. This finding was consistent with the results done in Oslo, Norway (Ellisiv, *et. al.*, 2016) which may be explained by the fact that the study included respondents with dementia, which is known to increase the risk of malnutrition. This finding was also consistent with the results of the Addis Abeba study (Abate, *et. al.*, 2020), India (Semwal, 2014) and Italy (Donini, *et. al.*, 2014).

An observational study revealed that lower MNA-SF scores are associated with higher mortality prediction (Sheean, *et. al.*, 2013). A recent study also found the nutritional status of geriatric patients followed in the ICU affected the duration of hospital stay, post-discharge care and mortality. (Ali, *et. al.*, 2022)



CONCLUSION

A significant proportion of elderly people are malnourished and at risk of malnutrition. In the overall study, low income, household size, and illiteracy were risk factors that caused malnutrition. Depression, existing medical challenge and loss of appetite were significantly associated with malnutrition.

RECOMMENDATION

It is crucial to support a diet containing food and liquid with adequate and appropriate nutrition to prevent and treat malnutrition, address nutrition policies as well as paying attention to the nutritional needs of the adult population, those malnourished or at risk should be monitored periodically and also social support should be made available so as to reduce loneliness and depression.

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