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FROM THE EDITOR'S DESK

Evidence-based information through well thought-out researches provides opportunities to address health problems in a less costly manner. This maiden edition of Journal of Institute for Dietetics in Nigeria (JIDiN) is set out with the vision to promote human health by making information available on health-related discourse through translational research outputs. Presently in Nigeria, only few journals are solely dedicated to publishing research findings that provide nutrition and dietetics information to assist patients have awareness and adequate knowledge that will assist in the treatment and management of their disease conditions.

This maiden edition of JIDiN is set out to provide research findings on Nigerian local diets, spices, edible herbs, and dietary requirements of all human age groups. Only five articles that met the journal's requirements are presented in this edition of Volume 1 Number 1. These published articles therein focused on health issues relating to quality of life of patient with diabetes and chronic kidney disease, use of medicinal herb with haematological potentials e.g. parquetina nigrescens, and glycaemic index benefits of consumption of unripe plantain and determination of the basic nutrients that may be likely deficient in the diets of many of our elderly, which may not be known to their care-givers. The findings from these studies will fill the missing gaps in our health care practices. This edition also included website review articles that focused on health information bothering on heart health, prostate cancer, menopause and haemorrhoids. Basic tips on what to say in an interview for job is also part of this edition for young job-seekers.

I need to chip in that starting an institutional-based journal requires much efforts to bring it to fruition! This edition could be described as a 'solo effort' based on share determination to bring it to reality at last! Efforts on this journal started in 2021 with the setting up of the members of the editorial team by the President of the Institute after the registration of the title of the journal by the National Library Board was achieved. However, thereafter, things became lull as the commitment of members' became a challenge. I also nearly gave up at a point because only few members responded to my quests at the initial stage and this got to ground zero at a point! I sincerely appreciate those who called once a while to ask how far about our (may be they meant "Your Journal", because it actually became a one-man show) journal? I must confess these calls were there the driving force that resulted into this edition. It is hopeful that the next edition will be on-line as all the necessary matters towards this would have been sorted out. Now that it has become a reality, subsequent edition will receive a boost from other members and the journal has come to stay, finally. I sincerely appreciate our President, Barrister Temitope Tajudeen and Prof GT Fadupin, our past president for the faith they have in me to come thus far. Thank you all.

Information about Journal of Institute for Dietetics in Nigeria

Journal of Institute for Dietetics in Nigeria (JIDiN) *is a bi-annual Journal* of the Institute for Dietetics in Nigeria, which was launched in November 2021 with **ISSN: 2814-0680.** It is currently accepting original manuscripts for its Volume 1, Number 1 edition. Two issues will form a volume. The Journal was established to contribute to advancing knowledge of Dietetics and related-fields. The Journal will encourage multi-disciplinary researches in clinical and behavioural dietetics/nutrition to promote efforts and discussions on how to better manage patients with cutting-edge knowledge of dietary modifications and clinical nutrition; using the local resources and disseminate information in these areas.

Contents of this Edition

Nutritional Status of the Elderly's Residing in Rural and Urban Areas of Oyo State, Nigeria

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Fakunle F. Racheal, Ibiyemi Olayiwola. O, Oluseye Onabanjo. O and Oluwakemi Fapojuwo. E. developed the concept, objectives of the paper and implementation of the research, Fakunlen Racheal. A and Ebenezer John. P. collected the data, worked out the literature, elaborate, analyse and interpret data, did statistical analysis and also developed the manuscript.

Abstract
Poor nutritional status is a common and serious problem among the elderly. While some malnourishments may arise from underlying illness, much is simply due to inadequate intake. This study was aimed at assessing the nutritional status of the elderly's residing in Oyo State. Multistage sampling technique was used to select 1,000 elderly. Weight and height were obtained using anthropometric measurement tools while BMI was calculate. Mini-Nutrition Assessment tool was used to determine the respondents' nourishment level. A structured questionnaire was used to obtain information on consumption pattern while nutrients intake was assessed using a-3 day (including a weekend day) 24-hour dietary recall. Student's t-test and Chi-Square test were used to determine association between variables. Many (56.0%) of the respondents had normal BMI, 12.7% underweight, 23.9% overweight and 7.3% were obese. Female had significant ($p < 0.05$) higher mean body fat ($30.3 \pm 12.0\%$) than the males ($20.01 \pm 11.4\%$). The majority (62.9%) of the rural dwellers were well nourished compared to urban dwellers (53.0%). The majority (80.0%) had three-solid meals while 12.1% skipped meals due to financial constraints. Nutrient intake of the respondents indicated that they met the Recommended Dietary Allowance for carbohydrate, fat was inadequate while protein intake was above for both gender. However, intake of dietary fiber (7.6g), vitamin C (10.6mg), vitamin B_6 (0.5mg), and calcium (251.1mg) were below the RDA. The study concluded that some of the elderly had sub-optimal nutritional status and suffered different forms of malnutrition. Appropriate nutritional interventions from relevant stakeholders should be considered and scaled up for the elderly.

Word Count: 249

Keywords: Elderly, Nutritional Status, BMI, RDA.

INTRODUCTION
Nutritional status of an individual refers to the nutritional state of the body in relation to health. Nutritional deficiency is a common and serious problem in older adults. While some malnourishments may arise from underlying illness, much is simply due to inadequate intake, as physical, mental, social and environmental changes that occur with aging may affect the quality of life and nutritional status in the elderly (Azad, 2002). Good nutrition is important at every stage of life for maintaining good health and personal productivity, and it is especially important to the elderly because of the physiological changes that occur in the body as people age. Even in the best of circumstances, aging weakens the immune system. Insufficient

calories, lack of protein, and micronutrient deficiencies in the elderly further weaken their immunity and expose them to infections that may reduce absorption of essential nutrients, thereby compounding the cycle of undernutrition and infection.

They also have a significantly higher risk of dying within a year of hospitalization than those with adequate nutrition (Liu *et al.,* 2002). Moreover, elderly people who are undernourished face other risks, including falls, hospitalization, lengthy hospital stays, and post-operative complications (Harris and Haboubi, 2005). There is also growing evidence that in the elderly, even micronutrient deficiencies not detectable in a physical examination are associated with declines in cognitive ability (Duthie *et al.,* 2002).

Globally, the population of elderly is increasing and their well-being is becoming a public health concern. In Nigeria, poverty is widespread and elderly persons are at higher risk. Unfortunately, Nigerian Government does not provide social security to elderly and the supports from the family are fading out making the elderly's vulnerable to malnutrition. Therefore, the well-being of elderly is compromised. The quality of life of elderly people has become relevant with the demographic shift towards an aging society. A longitudinal population study conducted by (Dey *et al.,* 2001), reported that malnutrition and degenerative changes resulting in unintended weight loss and micronutrient deficiencies have negative impacts on the functional status, psychological well-being and the quality of life of the elderly individuals. Thus, this study aimed to assess the nutritional status of elderly's residing in Oyo State, Nigeria.

MATERIALS AND METHODS

Study Design
This was a cross-sectional study by design, which was used to investigate the nutritional status of the elderly residing in rural and urban areas of Oyo State.

Study Area
The study was carried out in Oyo State, one of the 36 States of the Federal Republic of Nigeria, with an estimated population of 8,183,356 (NNHS, 2018). The State is divided into three Senatorial Districts namely: Oyo North, Oyo Central and Oyo South with 13, 11 and 9 Local Government Areas (L.G.A), respectively.

Sample Size Determination
The minimum sample size for this present study was calculated using (Yamane, 1967)

Where n is the minimum sample size, N is the total population of the target population (elderly), and the total population of elderly in Oyo State was 327,301 as at 2006 national census (NPC, 2006). Using the Nigeria growth rate of 2.6% (The World Bank, 2019), the total population of the elderly in Oyo State as at 2019 will be = 437,929.

e = the sampling error (0.05).

The minimum sample size for this study was calculated to be:
= 399.99 = 400

The sample size of 1,000 elderly respondents were recruited for this study to increase reliability of the data.

Sampling Techniques and Procedure
The study employed multistage random sampling technique in selecting representative respondents. The three senatorial districts of Oyo State [Oyo North (13 L.G.A), Oyo Central (11 L.G.A) and Oyo South (9 L.G.A)] constituted a stratum for the study.

The first stage involved the use of simple random sampling to select seven (7) local governments in proportion to the total local governments in each senatorial district (20% of 13, 11, 9 = Oyo North 3, Oyo Central 2 and Oyo South 2 L.G.A., respectively).
The second stage involved random selection of 14 wards, which was proportional to the total number of wards in the local government area selected (20% of 69 wards).
The third stage involved systematic sampling selection of houses with eligible

subjects in each ward. Verbal and written consent were obtained from the participants prior to starting the study. Eligible elderly persons were identified and recruited for the study in the selected households.

Instrument for Data Collection
A semi-structured dietary habit questionnaire and 24-hour dietary recall questionnaire was used to obtain information on dietary habit and nutrient intake, respectively. Height was measured using a stadiometer while weight was taken using a validated sunbeam analog bathroom scale. Body fat was measured using skinfold caliper by Omron.

Data Analysis
Microsoft Excel 2019 was used for the data coding and the coded data were later imported into Statistical Package for Social Sciences (SPSS) version 23 for further data computation and analysis. Frequency counts, percentages, mean and standard deviation (SD) were used in describing all the variables. Chi-square test was used to explore the possible association between food intake, gender and RDA of the elderly. A p-value < 0.05 was considered to be statistically significant.

RESULTS
Anthropometric Assessment of the Respondents
Table 1 below showed the anthropometric measurements of the respondents. The mean weight for male was 87.7±38.8kg while that of female was 58.3±11.7kg. Mean height for male respondent was higher (1.7±0.9m) than that of female respondents (1.5±0.4m). The female respondents had significantly (p<0.05) higher mean body fat (30.31±11.9%) than their male counterparts (20.01±11.4%).

Table 1: Anthropometric Characteristics of the Respondents

Measurements	Male Mean ± S.D	Female Mean ± S.D	P-value
Weight (kg)	87.7±38.8	58.3±11.7	0.109
Height (cm)	1.7±0.9	1.5±0.4	0.393
Body fat (%)	20.01±11.4	30.31±11.9	0.00*

* Significant at p<0.05

Table 2 shows the distribution of the respondent's Body Mass Index. The overall prevalence of underweight was 12.7%, among which more (9.8%) respondents were from the Urban areas. Little above half (56.1%) of the respondents had normal Body Mass Index. The prevalence of overweight and obesity were 23.9% (16.6% Urban, 7.3% Rural) and 7.3% (6.0% Urban, 1.3% Rural) respectively.

Table 3 revealed the Nourishment Level of the respondents using the Mini Nutritional Assessment Tool. It was observed that higher percentage (62.9%) of the respondents living in rural areas were well nourished while little above average (53.0%) of the respondents living in urban areas were well nourished.

Table 2: Distribution of Respondent's Body Mass Index Stratified by Location

BMI Category	Rural F	Rural %	Urban F	Urban %	Total Prevalence F	Total Prevalence %
Underweight ($\leq$ 18.4 kg/m^2)	29	2.9	98	9.8	127	12.7
Normal (18.5 - 24.9 kg/m^2)	195	19.5	366	36.6	561	56.1
Overweight (25.0 – 29.9 kg/m^2)	73	7.3	166	16.6	239	23.9
Obese I (30.0 - 34.9 kg/m^2)	12	1.2	41	4.1	53	5.3
Obese II (35.0 - 39.9 kg/m^2)	1	0.1	16	1.6	17	1.7
Morbid obesity (> 40.0 kg/m^2)	0	0.0	3	0.1	3	0.3

Table 3: Respondent's Nourishment Levels According to Mini Nutritional Assessment Tool Stratified by Gender and Location

Location	Male F	Male %	Female F	Female %	Total F	Total %	P-value
Rural							
Well Nourished	95	30.6	100	32.3	195	62.9	
Malnourished	45	14.5	70	22.6	115	37.1	0.064
Total	140	45.1	170	54.9	310	100.0	
Urban							
Well Nourished	199	28.8	167	24.2	366	53.0	
Malnourished	117	17.0	207	30.0	324	47.0	0.00*
Total	316	45.8	374	54.2	690	100.0	

* Significant at $p < 0.05$

Dietary Assessment of the Respondents

Table 4 below shows the dietary habit of the respondents. It was observed that the majority (80.5%) of the respondents consumed three meals per day while 25.5% skipped meals. The most common frequently skipped meal was lunch as mentioned by the elderly (20.6%).

As regards respondents who skipped meals, the main reason given were due to financial constraints (12.1%).

Table 4: Dietary Habit of the Respondents (N=1000)

Variable	Frequency	Percentage
Number of meals per day		
Once	5	0.5
Twice	116	11.6
Three times	805	80.5
More than three times	44	4.4
Do you skip meals		
Yes	252	25.2
No	680	68.0
If yes, what is the mostly skipped meal		
Breakfast	19	1.9
Lunch	206	20.6
Supper	39	3.9
Reason for skipping meals		
Financial constraint	121	12.1
Religious activity	14	1.4
Fad dieting	5	0.5
Lack of appetite	47	4.7
Tiredness/stress	31	3.1

The nutrient intake of the respondents was documented on Table 5 in respect to the Recommended Dietary Allowance (RDA). Male respondents met 98.7% RDA for Calories while females met 93.8% RDA, which is less than required in both sexes. Male respondents met higher (355.4%) RDA for protein than female respondents (155.0%), followed by carbohydrates, males' respondents met higher (102.9%) RDA than female respondents (99.2%). As regard dietary fiber, female respondents met higher (42.2%) RDA than male respondents (40.3%). However, for total fat, male respondents met higher (60.5%) RDA than female respondents (48.7%). Both male and female respondents met high RDA for vitamin A having 1094.3% and 1611.7% respectively. There was a slight difference in the RDA for vitamin C met by male and female respondents having 12.0% and 13.7% RDA, respectively. In addition, light difference was recorded for RDA for Vitamin B_6 met by male and female respondents having 29.4% and 26.7% RDA respectively. Both male and female respondents had high RDA for Vitamin B_{12} having 170.8% and 179.2% RDA respectively. As regards calcium, both male and female respondents met very low RDA having 21.7% and 20.2% RDA respectively. Both male and female respondents did not meet the RDA for sodium having 38.8% and 34.4% RDA respectively and female respondents met higher (128.3%) RDA for zinc than male respondents (117.3%). Both sexes had high RDA for iron; however, male respondents met higher (218.0%) RDA for Iron compared to the female respondents having (208.0%).

Table 5: Nutrient Intake of the Respondents as Compared with Recommended Dietary Allowance (RDI) (n=1000)

Nutrients	Male Mean ± S.D	RDA (%)	Female Mean ± S.D	RDA (%)	P-value
Calories (Kcal)	1874.6±697.3	98.7	1689.1±548.9	93.8	0.001*
Protein (g)	96.8±45.3	355.4‡‡	86.8±37.7	155.0‡‡	0.007*
Carbohydrates (g)	288.1±110.1	102.9	267.8±97.9	99.2	0.030*
Dietary fiber (g)	7.25±11.0	40.3‡	7.6±12.2	42.2‡	0.747
Fat – total (g)	36.9±27.1	60.5‡	30.2±15.4	48.7‡	0.001*
Vitamin A RE	1094.6±12146.2	109.3	1289.6±13139.2	161.7‡‡	0.093
Vitamin C (mg)	10.8±15.1	12.0‡	10.3±14.9	13.7‡	0.737
Vitamin B_6	0.5±0.6	29.4‡	0.4±0.5	26.7‡	0.016*
Vitamin B12	4.7±4.2	170.8‡‡	4.3±3.7	179.2‡‡	0.294
Calcium (mg)	259.8±171.4	21.7‡	242.3±175.1	20.2‡	0.267
Sodium (mg)	932.1±995.9	38.8‡	825.9±727.6	34.4‡	0.169
Zinc (mg)	17.6±11.2	117.3	15.4±8.2	128.3‡‡	0.009*
Iron (mg)	21.8±8.8	218.0‡‡	20.8±8.6	208.0‡‡	0.196

‡ Inadequate intake
‡‡ Excessive intake
* Significant at p<0.05

DISCUSSION

Body composition changes with age and there are evidences that central fat accumulation increases with age while appendicular fat mass decreases. This was proven in this present study where the male and female elderly were above the upper limit for body fat composition (Male 20.01 ± 11.4 and Female 30.31 ± 11.9). This pattern of fat distribution is associated with an increased risk of stroke, diabetes, hyperlipidemia, heart disease and hypertension, all of which commonly afflict the elderly (Kyle *et al.,* 2001). More so, the female respondents had significantly (p<0.05) higher mean body fat than the male attesting to the fact that female elderly tends to accumulate fat than the male elderly, possibly due to post-menopausal hormonal changes.

BMI has been used in predicting mortality and determining changes in nutritional status over time and in determining the effectiveness of nutritional intervention. The present study reveals that above average (56.1%) (19.5% of rural dwellers and 36.6% of urban dwellers) had normal BMI (BMI range: 18.5 – 24.9kg/m^2). This agrees with a study conducted by Alao *et al.* (2015) with report stating that the BMI of the majority of their respondents was within the normal. However, this study also reveals that some of the respondents were overweight and obese.

This supports a study, which reported that obesity also concerns the elderly (Babatsikou *et al.,* 2012; John and Olayiwola, 2021) and Nancy and Barbora (2008) who reported that the prevalence of obesity has increased in all ages and those older adults are no exception, which is associated with increase in mortality and contributed many chronic diseases. The reason for this might be due to a reduction in physical activity, which has led to overweight, and obesity that can aggravate chronic disease such as diabetes mellitus, hypertension and other lifestyle factors.

According to the mini nutrition assessment tool, 37.1% of the respondents were found to be malnourished in the rural areas and 47.0% were found to be malnourished in the urban areas. This result does not agree with Su-Hui Chen *et al.* (2014) who carried out a study on nutritional status and its health-related factors among older adults in rural and urban areas of Taiwan, and reported that nutritional vulnerability was significantly higher among rural elderly than their urban counterparts. The implication of higher income does not guarantee a better nutritional status. This further confirms the meaningful effect of geographic location on nutritional status. There is need to document rural versus urban background with respect to nutritional status. For instance, there is a higher percentage of those malnourished in the urban areas than in the rural areas.

In this present study, the mean macronutrient intakes (protein, carbohydrate and fat) of the male respondents were significantly higher (p<0.05) than that of their female counterparts. This agrees with Afolabi *et al.,* (2015), who reported that the mean intake of energy (2044 Kcal/day) carbohydrate (388.3g), protein (27.7g) and fat (42.2g) for men was significantly (p<0.05) higher than

that of the women in their study. The reason for this could be the culture that elderly men must take the larger share of meals, meat and fish products within a household. Or, it may be because of the fact that men eat more than women and even that most of them are breadwinners who give out the money, in turn, they serve them the best part of the meal. Never the less, some vital micronutrients required by the elderly such as Vitamin B_6, Vitamin C, Calcium and Dietary Fibre were below the Recommended Dietary Allowance for the elderly, which shows that the meals might not be adequate enough to supply the essential micronutrient. These agrees with Afolabi *et al.* (2015) and Ngatia *et al.,* (2008) who reported that adequacy in energy intake does not imply adequate intake of micronutrients.

CONCLUSION

The assessment of nutritional status using anthropometric indices and dietary intake revealed that about half of the elderly had suboptimal nutritional status and were confronted with different forms of malnutrition. More so, dietary assessment in this present study revealed that the studied elderly population was characterized by high intake of carbohydrates, proteins and fats rich foods thereby ultimately resulting in inadequate micronutrient status even though they met the energy requirement.

RECOMMENDATION

Health education on consumption of micronutrients rich foods including fresh fruits and vegetables should be embarked upon using the available settings to reach the elderly and their care-givers. Supplementation of micronutrients found to be inadequate among the studied population (Calcium, B vitamins and vitamin C) should be considered and scaled up to cover as many elderly persons as possible.

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NUTRITIONAL STATUS AND QUALITY OF LIFE OF TYPE2 DIABETIC PATIENTS ACCESSING HEALTH CARE AT BOWEN UNIVERSITY TEACHING HOSPITAL OGBOMOSHO, OYO STATE

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Abstract
Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or the insulin produced is not effectively used by the body. Malnutrition has negative effects on diabetes prognosis and consequently on quality of life (QoL). This study was used to assess the nutritional status and QoL of type2 diabetic patients attending Bowen University Teaching Hospital, Ogbomosho, Oyo State, Nigeria. Structured questionnaire was designed to collect information on socio-economic and demographic characteristics of the respondents. Nutritional status was assessed by calculating body mass index. Data on the dietary intake were collected using 24-hour dietary recall and food frequency questionnaire (FFQ) for dietary pattern. MDQOL-17 was used to assess the patient's QoL. All the data obtained were subjected to descriptive and inferential statistical analysis using SPSS (Version 20.0) software. Total dietary assessment software was used to determine nutrients intake. Results showed that out of the 61 recruited respondents, 34(55.7%) were male. The majority of the patients 37 (60.7%) were within the age range of 51-70 years. Respondents had moderate QoL in four domains, which were physical functioning, role limitations due to emotional, emotional wellbeing, general health while QoL was poor in the energy domain and better in social functioning. Only 3.3% of the respondents were underweight, 36.1% were normal while 24.6% were overweight and 32.8% were obese. Findings from this study highlight the need for interventions aimed at promoting healthy lifestyles among diabetic patients.

Keywords: Diabetes, nutrient intake, malnutrition, food frequency questionnaire

Words Count: 238

Introduction
Type 2 diabetes mellitus (T2DM) is a chronic metabolic disorder characterized by insulin resistance and impaired glucose regulation. It is a significant global health concern, with an estimated 463 million adults affected worldwide in 2019 (International Diabetes Federation, 2019). T2DM is associated with various complications and comorbidities, including cardiovascular disease, nephropathy, neuropathy, and retinopathy, all of which can significantly impact the quality of life (QoL) of individuals living with the condition. While T2DM is more common among adults and elderly, Type 1 diabetes is mostly found amongst those less than 30 years and in children (Juvenile) and those who are usually underweight (thin) (Fakunle, and Ojofeitimi 2014).

Nutritional status is the condition of health of an individual that is influenced by the intake and utilization of nutrients. Adequate nutritional health is maintained by the balance of nutrient intake and requirements (Oyeyemi *et al.,* 2018). Diabetes mellitus is a constant and chronic problem or disorder that is portrayed by high glucose level (hyperglycemia) and high degree of sugar in the urine (glucosuria). Type 2 Diabetes Mellitus is the most well-known type of Diabetes Mellitus (Yanling *et al.,* 2018). People and individuals living with this type 2 Diabetes Mellitus are very vulnerable and more helpless against different types of both short and long haul entanglements and complications like cardiovascular sicknesses (essentially heart or coronary illness and also stroke), diabetic neuropathy, retinopathy (visual impairment because of retinal harm/damage) and nephropathy which influence patient's wellbeing, efficiency,

personal satisfaction and quality of life.

According to the World Health Organization diabetes will be the seventh driving reason for death by 2030. Diabetes Mellitus has impacted 380 million individuals around the world. Roughly 5.8% (around 6 million) of grown-up Nigerians are living with Diabetes Mellitus.

Diabetes Mellitus can be managed by medications, nutrition therapy and lifestyle changes also by actively engaging in self-management, education and cure planning. However, as the duration of diabetes increases, food intake decreases due to diseases-related complications (hyperglycemia, hypoglycemia, hyperlipidemia), functional deficiencies (poor dentition, ill-fitting dentures and dysphagia) and the changes of treatment plan in determining what to eat for diabetes people (Buse *et al,* 2015).

In a study conducted by (Cabangon et al., 2016), it was found that 63% of hospitalized individuals with diabetes had a high risk of malnutrition and 45% of them had severe malnutrition. In another study conducted by (Paris et al. 2019), the prevalence of malnutrition in hospitalized elderly individuals with diabetes were found to be 21% and the risk of malnutrition was 39%. Miguel et al in 2019 found that 30.1% of diabetic patients were malnourished. Malnourished diabetic patients have longer hospitalizations and higher costs than those at no nutritional risk. Malnutrition and diabetes mellitus are two common conditions that can have significant implications for patients' health and diet.

Methodology

This study been carried out in Bowen University Teaching Hospital, Ogbomoso, Oyo State, Nigeria. The study population comprised of adult male and female with type-2 diabetic patients attending Bowen University Teaching Hospital, Ogbomoso, Oyo Sstate, Nigeria. They are confirmed to be diabetic by physician for having fasting blood glucose (FBG) ≥ 126 mg/dl or casual plasma glucose (CPG) ≥200 mg/dl or glycatedhemoglobin (HbA1c) ≥ 6.5%. A cross-sectional study was conducted among the type2 diabetes patients, comprised of both gender (male and female) in Bowen University Teaching Hospital using a pretested questionnaire. Information was collected regarding quality of life, nutritional status and socio-demographic features.

A random sampling technique was adopted to pick the respondents recruited for the study. A total of 61 type2 diabetes patients comprising of both gender was selected for the study. The sample size was derived using the Cochran's formula

$$n = z^2 p \times (1-p)/d2$$

where;
n= Sample size,
z= Confidence interval at 95% (1.96)
p= Prevalence rate (3.7%) (IDF, 2022).
d = Desired level of significance (0.05)

Therefore, n = $1.96^2 \times 0.037 \times (1-0.037) \div 0.05^2$

$$n = 54.752 \approx 55$$

Calculating using a non-response case of 10% and putting design defect at 1.0, sample size is
≈61

Calculating using a non-response case of 10% and putting design defect at 1.0, sample size is ≈61

Ethical approval was obtained from the Chairman of the Ethical Review Committee of Bowen University Teaching Hospital, Ogbomosho, Oyo State. The respondents were informed to sign a consent granting their approval for participation in the study. The respondents were guided on all necessary information needed on the questionnaire. The questions were self-explanatory for easy comprehension. The information obtained was highly confidential to respect the dignity of the participants.

The data obtained from the participants were treated with utmost confidentiality. The questionnaire was administered individually and their names were not written on the questionnaire.

The data were collected using a pre-tested, structured, interviewer-administered questionnaire. The pretesting was done at Bowen University Health Centre in Iwo, Osun State. There are 5 sections in the questionnaire the socio-demographic data of

the patients, which included age, sex, religion, ethnicity, occupation educational status, income level. Their nutritional status was assessed by measuring height and weight, using a stadiometer with approximations of 0.5 cm and weighing scale 0.1 kg, respectively. The body mass index (BMI) of each respondent was calculated using the formula: BMI = weight (kg) / height (m^2) and participants were classified according to the WHO International classification of adult weight (WHO, 2019). Data on the dietary intake of the respondents were collected using 24 hours dietary recall and the food frequency questionnaire (FFQ) used for the Nigerian National Food Consumption Survey in year 2001 was adopted for the assessment of dietary habits (Maziya et al, 2006).The FFQ contains details of food that are commonly consumed in Nigeria and gives room to record the number of days each of the foods is consumed in a week.

MDQOL-17 was used to assess the patient's quality of life. The MDQoL-17 questionnaire was developed and validated by Acharya et al in the year 2010. It consists of 17 questions that comprised of seven domains, which include physical functioning, role limitations due to physical health problems, role limitations due to personal or emotional problems, emotional well-being, social functioning, energy/ fatigue, and general health perceptions. The scores are 0-100, 0 being the minimum and 100 being the maximum score.

Nutrients analysis was performed using total diet assessment software
Data analysis was carried out using Statistical Package for Social Sciences (SPSS). Descriptive (frequency and percentage) and inferential statistics was done (Chi-square test). Level of significance was set at p<0.05.

Inclusion criteria
Patients diagnosed of type2 diabetes and accessing healthcare in Bowen University Teaching Hospital who agreed to participate in the study and signed consent form were recruited.

Exclusion criteria
Patients who were not diagnosed of type2 diabetes were not recruited for the study.

Result
The data showed that there was a total of 61 respondents, 34 (55.7%) were male while 27(44.3%) were female. Few, (18.0%) of the respondents were from 31-50 years; 37 (60.7%) respondents were within the age range of 51-70 years and 12(19.7%) respondents were from 71-90 years of age. However, only one respondent was 95years. The majority (68.9%) of the respondents were Christians while 16(26.2%) were Muslims and others 3(4.9%). Many, 54(88.5%) of the respondents were Yoruba while 4(6.6%) were Igbo, 2(3.3%), Hausa and the others 1(1.6%) were from other ethnic groups. Seven (11.5%) were farmers, 22(36.1%) were petty traders, 6(9.8%) were artisans, 9(14.8%) civil servant, 2(3.3%) big business owners, however, 15(24.6%), retired.

The quality of life assessment revealed that 19.7% of the respondents had poor physical functioning; the many of the respondents (54.1%) had moderate physical functioning while 26.2% had better physical functioning, and 25(40.0%) had a better quality of life in role limitation due to physical health while, 24.6% of them were moderate and 34.4% were poor. Limitation due to emotional problems was moderate in 42.6% of the respondents, better in 36.1% and poor in 21.3% of the respondents. Many, 32(52.5%) of the respondents had poor energy, 13(21.3%) had moderate while 16(26.2%) had better energy. Emotional wellbeing was moderate in 26(42.6%), better in 25(41.0%) and poor in 9(14.8%). The social functioning domain of the quality of life was better in 28(45.9%) of the respondent, moderate in 17(27.9%) and poor in 16(26.2%) of the respondents. Perception on general health was poor and moderate in 27(44.3%) respondents each and 7(11.5%) of the respondents had better perception.

The majority (67.5%) of the patients did not take apple while 32.5% consumed it; 7.5% did not eat mango while 92.5% consumed it; 52.5% did not take pineapple while 47.5%

took it; 10.0% did not take orange while 90.0% were taking it and 15.0% did not take water melon while 85.0% were taking it. The frequency of consumption of fruits was low among the respondents but many consumed fruits. Few (35.0%) did not eat yam, 67.5% did not take porridge, 77.5% did not take sweet potato, 15.0% did not eat rice, 22.5% did not consume yam flour (amala), 22.5% did not take whole wheat bread, 20.0% did not eat sorghum, 47.5% did not take sugar and 77.5% did not take baked cake. This implied that 65.0%, 32.5%, 22.5%, 85.0%, 77.5%, 77.5%, 80.0%, 52.5% and 22.5% ate yam, porridge, sweet potato, rice, yam flour, whole meal bread, sorghum, sugar and baked cake, respectively. On the average 10.0% consumed carbohydrate food once a day. These results revealed that, the quantity of consumption of these carbohydrates was high but the frequency of consumption was low. The consumption of alcoholic beverages such as wine, and beer by the patients was very low with low frequency of consumption. On the average 75.6% of the respondents did not take alcoholic beverage and only 10.0% consumed alcohol once a week, 15.0% did not take milk while 85.0% took it; 5.0% did not take goat meat while 52.5% consumed it; 22.5% did not take beef while 77.5% ate it; 12.5% did not take chicken while 87.5% ate it; 2.5% did not take fish while 97.5% ate it; 7.5% did not take egg while 92.5% ate it. And all the respondents took beans. This showed that percentage consumption of protein foods was high and the frequency of consumption was also high. All respondents consumed groundnut oil while 10.0% did not not use palm oil.

Less than half of the respondents, 22 (36.1%) had normal weight, 15 (24.6%) were overweight, 20 (32.8%) were obese while 2 (3.3%) were underweight. However, 2 of the respondents were on the wheelchair, therefore, weight and height could not be taken during data collection.

Discussion and Conclusion
The demographic characteristics of patients with type 2 diabetes in the current study were largely consistent with previous studies. For example, in a study conducted by Saad et al. (2018) in Nigeria, the majority of the participants were between 41-60 years old, and the male to female ratio was also similar to the current study. Additionally, the high prevalence of type 2 diabetes among the Yoruba ethnic group in Nigeria has been previously reported (Ogbera et al., 2013). The occupation distribution of the participants in the current study was also consistent with previous studies. In a study by Olatunbosun et al. (2014) as most of the participants with type 2 diabetes were either unemployed or engaged in informal occupations such as petty trading. These findings suggest that poverty and low socioeconomic status may be contributing factors to the high prevalence of type 2 diabetes in Nigeria.

The present study explored the quality of life of patients with type 2 diabetes, specifically examining seven domains: physical functioning, role limitations due to physical health problems, role limitations due to personal or emotional problems, emotional well-being, social functioning, energy/fatigue, and general health perceptions. The results revealed that a significant proportion of respondents had poor physical functioning, poor energy, and poor general health perceptions. On the other hand, a considerable proportion of respondents reported moderate quality of life in most domains, including role limitations due to physical health, emotional well-being and social functioning. In terms of better quality of life, the role limitation due to physical health was documented among the respondents, and emotional well-being was also reported among the respondents. The findings of the present study were consistent with the previous research on the quality of life of patients with type 2 diabetes. A study conducted by Wang et al. (2017) found that patients with diabetes reported poorer physical functioning, lower energy, and more role limitations due to physical health problems than the general population. Similarly, a study conducted by Al-Aboudi et al. (2021) found that patients with type 2 diabetes experienced a significant negative impact on their quality of life, especially in

the physical and emotional domains. These findings suggest that type 2 diabetes is associated with a range of physical and psychological problems that can affect patients' quality of life.

The results of this study showed that the mean total calorie intake of patients with type 2 diabetes which was consistent with the findings of a previous study by Shamsi et al. (2017), who reported a mean calorie intake of 1832 kcal/day in diabetic patients. However, the mean daily intake of carbohydrates was found to be in excess, which is consistent with the findings of other studies (Yue et al., 2020; Wang et al., 2016) that have reported excessive carbohydrate intake in patients with type 2 diabetes. This is of concern because excessive carbohydrate intake can lead to hyperglycemia, which can worsen diabetes symptoms.

The mean daily intakes of total fat and protein were found to meet the recommended range, which is consistent with the findings of other studies (Shamsi et al., 2017; Yue et al., 2020). However, the mean daily intake of cholesterol and dietary fiber were found to be significantly lower than the recommended values, which is consistent with the findings of other studies (Yue et al., 2020; Chen et al., 2018). Low intake of dietary fiber can lead to poor glycemic control, while low intake of cholesterol can affect hormone synthesis and increase the risk of cardiovascular diseases.

The mean daily intake of vitamin C, calcium, potassium, sodium, and folate were also found to be significantly lower than the recommended values, which is consistent with the findings of other studies (Yue et al., 2020; Shamsi et al., 2017). Adequate intake of these nutrients is important for diabetes management, as they play a crucial role in glucose metabolism and blood pressure control. On the other hand, the mean daily intake of vitamin A and zinc were in excess,

which is consistent with the findings of other studies (Chen et al., 2018). However, excessive intake of vitamin A can lead to toxicity, while excessive intake of zinc can impair glucose tolerance.

The results of this study on the dietary intake of patients with type 2 diabetes revealed interesting patterns regarding the consumption of fruits, carbohydrates, and protein-rich foods. In terms of fruit intake, the study found that while the consumption quantity was relatively high, the frequency of consumption was low. This finding is consistent with previous studies that have shown low fruit intake among patients with type 2 diabetes (Kwon et al., 2015; López-González et al., 2013).

Regarding carbohydrate intake, the study found that the consumption of carbohydrate-rich foods was high, but the frequency of consumption was low. This pattern of consumption was also consistent with previous studies that have shown high carbohydrate intake among patients with type 2 diabetes (Alzahrani & El-Metwally, 2016; Evert et al., 2019). The study also found that the consumption of alcoholic beverages was low among the patients, which is consistent with previous research that has shown low alcohol consumption among individuals with diabetes (Zhang et al., 2019).

The study found that protein intake among the patients was high, and the frequency of consumption was also high. This finding is consistent with previous research that has shown that patients with type 2 diabetes tend to have higher protein intake compared to individuals without diabetes (Barrea et al., 2019; Mirmiran et al., 2015). The study also found that all respondents consumed beans, which is a good source of protein.

The study identified some nutritional deficiencies among the patients, including low intake of dietary fiber, vitamin C, calcium, potassium, sodium, and folate. This finding is consistent with previous studies that have shown low intake of these nutrients among patients with type 2 diabetes (Alzahrani & El-Metwally, 2016; Evert et al., 2019). The study also found that

magnesium intake was inadequate, which is consistent with previous research that has shown low magnesium intake among patients with type 2 diabetes (Song et al., 2016).

The study found that a significant proportion of patients with type 2 diabetes were either overweight or obese, which is consistent with previous research. According to a study by Ogbera et al. (2013), the prevalence of overweight and obesity among patients with type 2 diabetes in Nigeria was 55.9% and 31.8%, respectively. Similarly, a study by Okafor and Udenta (2017) found that 65.9% of patients with type 2 diabetes in a hospital in Nigeria were either overweight or obese.

The high prevalence of overweight and obesity among patients with type 2 diabetes is of concern because it is a major risk factor for the development and progression of the disease. Excess weight can cause insulin resistance, which is a key feature of type 2 diabetes, and can also increase the risk of developing other complications such as cardiovascular disease.

The low proportion of patients with normal weight in the study is also a cause for concern as it suggests that efforts to prevent or manage type 2 diabetes in this population should focus on lifestyle interventions such as diet and physical activity. A study by Ezeani et al. (2019) found that lifestyle interventions such as dietary counseling and exercise were effective in improving glycemic control and reducing the risk of complications in patients with type 2 diabetes.

In conclusion, the findings highlight the need for improved diabetes prevention and management strategies in Nigeria, particularly among individuals of lower socioeconomic status. The present study found that patients with type 2 diabetes had moderate to poor quality of life in several domains, including physical functioning, energy/fatigue, and general health perceptions. These findings highlight the need for healthcare professionals to address the physical and emotional needs of patients with diabetes to improve their overall quality of life. This study provides valuable insights into the dietary intake of patients with type 2 diabetes. The study found that while the consumption of fruits, carbohydrates, and protein-rich foods was high, the frequency of consumption was low. The study also identified some nutritional deficiencies among the patients, highlighting the need for improved nutritional education and counseling for individuals with type 2 diabetes. Overall, these findings suggest that patients with type 2 diabetes in this hospital may have inadequate dietary intake of some important nutrients, and there is a need for individualized nutrition education and counseling to improve their dietary habits and glycemic control.

Recommendation
It is worth noting that the current study did not report on the duration of diabetes among the participants. Previous studies have shown that the duration of diabetes is an important factor in the development of diabetes-related complications (Ogbera et al., 2013; Saad et al., 2018). Therefore, future studies should consider investigating the duration of diabetes among patients in Nigeria.

The findings of this study highlight the need for interventions aimed at promoting healthy lifestyles and preventing overweight and obesity in patients with type 2 diabetes. These interventions should focus on improving dietary habits, increasing physical activity, and promoting weight loss in overweight and obese individuals. Further studies are warranted to investigate the effectiveness of interventions aimed at enhancing the quality of life of patients with type 2 diabetes.

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Effect of Parquetina Nigrescens on the Hematological Profile of Phenylhydrazine-induced Anemic Wister Rat

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Abstract

Packed cell volume (PCV) is a crucial hematological parameter that is critical in determining state of health. The main objective of this study was to investigate the effect of *Parquetina nigrescens* on the hematological profile of phenylhydrazine-induced anemic Wister albino rats. Twenty albino rats, specific pathogen free, aged 2 to 8 weeks old was purchased from Bowen University and housed under standard environmental conditions (25°C; 12/12 h light/dark cycle). The animals were divided into five groups with four rats per group. The first group was non-anemic control group with no treatment of the extract, second group was anemic control group with no treatment of the extract, third group was the control reference, the rats received the extract treatments without being induced to be anemic while fourth and fifth groups were the test groups and they were administered with the low and high dose of the plant extract 200mg/kg, 400mg/kg, respectively in daily oral doses for 14 days. There was significant increase of packed cell volume in the experimental groups. This study suggests that *Parquetina nigrescens* leaves may be helpful in maintaining healthy red blood cell counts and packed cell volume.

Key words: *Parquetina nigrescens* leaves, hematological parameters, anemia

Introduction

In the last few years, the use of medicinal plants for therapeutic purposes has been on the increase globally. It is evaluated that about 80% of the world population depend mainly on medicinal plants for their health care delivery system (Obinna et al. 2023). Medicinal remedies are seen to have various advantage namely, low cost, affordability, acceptability and perhaps, reduced side effect. Medicinal plants are plants which when administered to man or animal (mammal), exert a sort of pharmacological action on them (Dasofunjo et al. 2020).

For example, hematological parameters (packed cell volume, white blood cell counts, differentiation of white blood cells, haemoglobin and platelets) have been reported to be positively affected by using Moringa oleifera (Ye et al. 2019). Parquetina nigrescens is a folklore plant in Africa, particularly Nigeria, and its consumption is also believed to stimulate red blood cells production. (Ighodaro et al. 2020)

Anemia is a public condition characterized by significant decline in red blood cells or hemoglobin counts, with an attendant effect of decreased capacity of the blood to transport oxygen round body tissues. Anemia is arguably the most prevailing blood disorder, posing a critical health risk to at least one third of the global populace. It remains a major public health concern in several developing and under-developed countries (Ighodaro et al. 2020) and there are several types of anemia. (Ikese et al. 2020) This study hereby was aimed to investigate the possible effect of Parquetina nigrescens on the hematological profile of Wister albino rats.

Materials and methods

Samples of *Parquetina nigrescenes* leaves and anemic Wister Rat, were assembled alongside Mapienfield microhematocrit capillary tubes (74mm length, 1.1 internal diameter), Hawksley hematospin 1400 microhematocrit centrifuge and reader, candles for flame and cotton wool were the

laboratory materials set up for sample treatment and analysis. The leaves of Parquetina nigrescens was obtained from Ogbomoso in Oyo State, Nigeria. The authentication was done by a botanist, who gave a voucher specimen that was kept in the herbarium.

Plant Juice Extraction Method
Sample of Periplocoideae *Parquetina nigrescens* collected were first washed free of sand and debris. Wash water was blotted off and the leaves were ground to a paste in a clean porcelain mortal pestle. A quantity of the ground sample (50 g) was weighed and Soxhlet extracted with 150 ml distilled water at 100°C for 60 minutes. The extract was slowly sieved in a vacuum at 40°C using fractional destination method. A total yield of 33.2% of the liquid sample was obtained. Weighed samples (20 g in 10 ml distilled water) of the water mixture (liquid) extracted from the boiling process (500 mg/ml) was administered to the Wister rats (National Institutes of Health, 1985).

Induction of anemia
Anemia was induced using phenylhydrazine Chlorhydrate. Phenylhydrazine was dissolved in Dimethyl Sulfoxide (DMSO) solution diluted to one-tenth in distilled water. It was administered to rats intraperitoneally (IP) at a dose of 40 mg/kg of body weight/day (Naughton et. el., 1989) for two days (D0 and D1).

Experimental animals
 Twenty albino rats, specific pathogen free, aged 2 to 8 weeks old was purchased from the Bowen University, Iwo, Nigeria and housed under standard environmental conditions (25°C; 12/12 h light/dark cycle). Four rats were kept in each block. The animals were allowed to acclimatize for some days prior to the experiment (Obinna et. al., 2019). The experimental animals were handled and used in accordance with the international guide for the care and use of laboratory animals (Ochei and Kolhatkar, 2000).

Study design (Experimental design)
The animals were divided into five blocks (A, B, C, D and E) with four rats per block.

The first group was non-anemic control group with no treatment of the extract, second group was anemic control group with no treatment of the extract, third group was the control reference, the rats received the extract treatments without being induced to be anemic while fourth and fifth groups were the test groups and they were administered with the low and high dose of the plant extract 200mg/kg, 400mg/kg, respectively in daily oral doses for 14 days.
All groups were also fed with 15-20g of pellets composed of corn, soybean pulp, sunflower seed meal, bone meal, fish meal, vitamins, minerals etc per day for 21 days.

Collection of blood samples
The animals were made unconscious with chloroform inhalation (cotton wool soaked in 3.5% chloroform) and blood was collected via cardiac puncture using a 5-ml syringe attached to a needle (21SWG); the blood was collected into plain capped bottles containing ethylene diamine tetra acetate (EDTA) by a modified method of Ohwada. The samples were immediately used for the estimation of the different variables.

Measurement of blood parameter
Blood samples were analyzed using an automated cell counter (Coulter Electronics, Luton, Bedfordshire, UK) with standard calibration, according to the manufacturer's instructions for analysis of human blood and accurately programmed for the analysis of red blood cell (RBC) count, total white blood cell (WBC) count, hemoglobins (Hb), packed cell volume (PCV), mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), mean corpuscular hemoglobins concentration (MCHC), RBC distribution width (RDW), MPV, PDW, and P–LCR.

Microhematocrit Method
The microhematocrit method as described by (Salman et. al., 2008). 2mls of blood of the wister rat specimen was collected and mixed gently in the appropriate EDTA anticoagulant bottle. 2/3 of the microhaematocrit tube was filled with the freshly collected and well mixed blood. Using a clean and dry cotton wool, the outside of the capillary tube was wiped clean and one end sealed using a candle flame. Precaution was taken to avoid air bubbles and also to

avoid burning the blood. The tube was placed into a calibrated microhaematocrit centrifuge with the sealed end touching the rubber ring and the open end facing the centre of the machine. The lid was placed firmly over the centrifuge head and covered properly. The timer is set at 5 minutes at 15 000rev. The tube was removed and read within two minutes after the centrifuge had stopped. Using Hawksley's microhematocrit reader, the hematocrit was determined, by measuring the height of the packed red cells against the height of the total blood column. The PCV result was recorded.

Statistical Analyses
Group comparisons was done using the analysis of variance (ANOVA) test. Tukey post hoc test was carried out to analyze significance of difference between different groups. The result was presented as mean ± standard deviation. Probability of p < 0.05 was considered as level of significance.

Result
No significant difference was observed in the platelets, lymphocytes, monocytes and neutrophils of the control group from the baseline, seventh day to the fourteenth day (Table 1). Among the anemia only group, no significant difference was observed among the red blood cells, neutrophils and packed cell volume (Table 2). Table 3 shows that there was significant decrease (p<0.05) in the white blood cell count of the rats in the extract only group while no significant difference was established for the platelet, mean platelet volume, red blood cells, monocytes and packed cell volume. Meanwhile, there was significant difference

in the packed cell volume of the rats that received 200mg/kg of the extract, although the packed cell volume decreased after the administration of phenylhydrazine from 46.0% to 25.0%. After receiving the leaves extract for seven days, it increased to 49.5% but later dropped to 38.3% after additional seven days. However, no significant difference was established for the mean platelet volume, lymphocytes, and monocytes (Table 4). Rats that received 400mg/ kg (body weight) of the extract also showcased significant increase (p<0.05) of packed cell volume, the packed cell volume reduced to 33.3% from 39.8% after being administered phenylhydrazine but it later increased to 41.0% after seven days of receiving 400mg/kg of the leaves extract and further increased to 54.0% after another 7 days of continual intake of the extract (Table 5). The table also showed that there was significant difference in the values of platelet, significant increase of the red blood cell, significant decrease of the monocytes but no significant difference in the white blood cells count, mean platelet volume, lymphocytes, and neutrophils. Figure 1, figure 2 and figure 3 visualization further showcase the observed changes in white blood cells count, packed cell volume and red blood cells count of the rats across their different groups. Figure 2 shows that the extract treatments present increased packed cell volume after initial reduction by phenylhydrazine across the three concerned groups. In the anemia only and lower dose groups, the increment, however, did not supersede the baseline values there were noted at the beginning of the experiment.

Table 1: Hematological parameters of the Control group (not induced to be anemic and not treated with the extract)

Treatment	Platelets (10⁹/L)	WBC (10⁹/L)	MPV (fL)	RBC (10¹²/L)	Lympho cytes (%)	Monocy tes (%)	Neutro phils (%)	PCV(%)
Baseline	427.5±1 72.18a	11.5±2 .37a	7.18±0. 56ab	8.14±1. 05b	75.75± 1.26a	9±1.15 a	15.25± 1.5a	49.25± 8.42b
After 7 days	270.33± 83.43a	5.1±2. 46a	6.8±0.1 a	4.84±0. 32a	76.33± 2.52a	6.93±1 .00a	17.67± 4.04a	25.33± 9.87a
After 14 days	419.25± 56.49a	5.5±0. 26b	7.9±0.2 2b	6.64±1. 55ab	75.75± 3.77a	10.25± 2.5a	14±3.3 7a	41±4.0 8ab

Values are expressed as mean ± standard deviation. Means with identical superscripts within a column are not significantly difference at p = 0.05.

Table 2: Hematological parameters of the Anemia only group (induced to be anemic but no treatment of the extract)

Treatment	Platelets (10^9/L)	WBC (10^9/L)	MPV (fL)	RBC (10^{12}/L)	Lymphocytes (%)	Monocytes (%)	Neutrophils (%)	PCV(%)
Baseline	1500.33 ±84.5b	14.77± 2.31c	7.03± 0.59a	7.03± 0.59a	67.33± 3.21a	11.33± 1.52b	21.33± 4.62a	44.00± 7.81a
After PHZ	262.75± 92.75a	11.30± 0.25b	6.98± 0.96a	6.98± 0.09a	70.75± 0.96ab	10.5±0 .578ab	15.75± 5.19a	30.75± 0.50a
After 7 days	625.33± 29.00b	11.53± 0.32b	7.10± 0.10a	7.10± 0.1a	75.33± 4.04b	7.33±1 .15a	17.33± 4.73a	41.33± 1.53a
After 14days	269.50± 36.35a	6.85±0 .13a	8.75± 0.35b	8.75± 0.35a	74±3.3 7ab	10.25± 2.62ab	15.75± 1.26a	33.75± 13.23a

Values are expressed as mean ± standard deviation. Means with identical superscripts within a column are not significantly difference at p = 0.05.

Table 3: Hematological parameters of the Extract only group (not induced to be anemic but treated with the extract)

Treatment	Platelets (10^9/L)	WBC (10^9/L)	MPV (fL)	RBC (10^{12}/L)	Lymphocytes (%)	Monocytes (%)	Neutrophils (%)	PCV(%)
Baseline	386.25± 198.58a	12.70± 1.89a	7.13± 0.51a	5.45±0. 48a	70.25±3. 30a	10.25± 1.26a	19.5±4. 43b	33.50± 5.07a
After 7 days	445.67± 43.02a	9.23±3 .34ab	7.17± 0.31a	5.49±1. 80a	70.33±8. 62a	9.67±3 .51a	20.00± 5.29b	37.00± 12.17a
After 14 days	241.50± 131.78a	5.45±0 .93a	7.38± 0.30a	5.97±0. 42a	85.25±5. 12b	6.75±1 .70a	6.33±2. 52a	40.25± 0.50a

Values are expressed as mean ± standard deviation. Means with identical superscripts within a column are not significantly difference at p = 0.05.

Table 4: Hematological parameters of the Lower dose group (induced to be anemic and treated with 200mg/kg of the extract)

Treatment	Platelets (10^9/L)	WBC (10^9/L)	MPV (fL)	RBC (10^{12}/L)	Lymphocytes (%)	Monocytes (%)	Neutrophils (%)	PCV(%)
Baseline	436.25± 40.2ab	13.68± 0.61b	7.48±0. 38a	7.45±0. 2b	70.50±3. 70a	9.75±3. 3a	14.5±4.9 ab	46.00± 0.8b
After PHZ	229.5±2 12.84a	6.0±0. 3a	7.00±0. 85a	3.71±0. 02a	78.00±0. 00a	10.00± 0.00a	12±0.00 ab	25.00± 4.24a
After 7 days	604.50± 194.25b	8.98±0 .22ab	6.50±0. 37a	7.10±0. 4b	72.00±5. 16a	6.00±1. 4a	22.00±5. 1b	49.50± 3.7b
After 14 days	241.25± 125.73a	13.53± 5.04b	6.70±0. 51a	5.30±2. 4ab	85±11.0a	7.75±5. 1a	7.256.0a	38.3±1 4.5ab

Values are expressed as mean ± standard deviation. Means with identical superscripts within a column are not significantly difference at p = 0.05.

Table 5: Hematological parameters of the higher dose group
(induced to be anemic and treated with 400mg/kg of the extract)

Treatment	Platelets (10^9/L)	WBC (10^9/L)	MPV (fL)	RBC (10^{12}/L)	Lymphocytes (%)	Monocytes (%)	Neutrophils (%)	PCV(%)
Baseline	212.00 ±37.9a	15.2±2.0a	9.38±3.89a	6.69±1.1b	66.8±0.50a	10.8±1.0b	22.5±1.3a	39.8±1.3b
After PHZ	549.3± 43.3b	17.3±0.5a	8.5±1.6a	3.29±1.3a	66.7±2.9a	10.7±1.2b	22.7±2.5a	33.3±2.9a
After 7 days	695.5± 19.10c	13.6±0.4a	7.1±0.1a	5.1±0.2ab	71.0±1.4a	10.0±0.0b	19.0±1.4a	41.0±1.4b
After 14 days	530.3± 69.8b	16.1±1.2a	7.8±0.4a	7.5±0.5b	73.3±4.2a	5.3±0.6a	18.0±3.6a	54.0±2.00c

Values are expressed as mean ± standard deviation. Means with identical superscripts within a column are not significantly difference at p = 0.05.
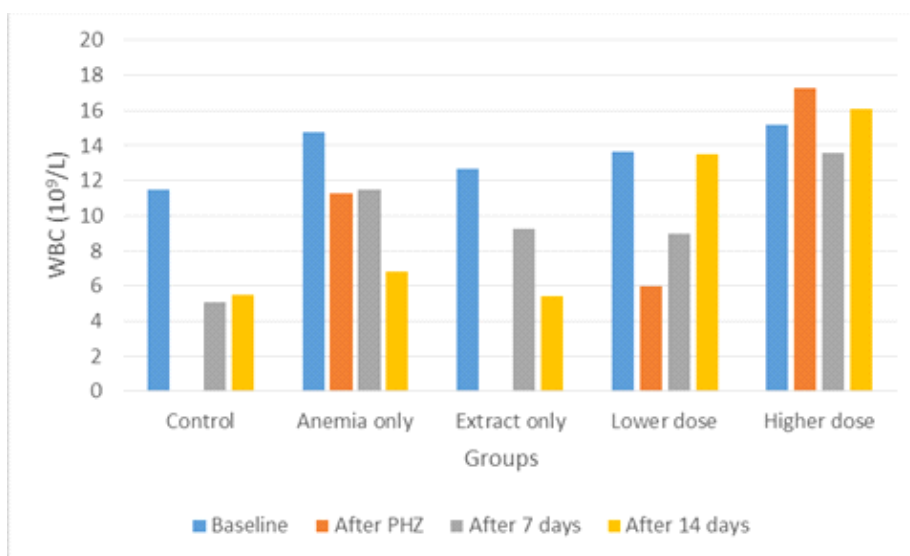

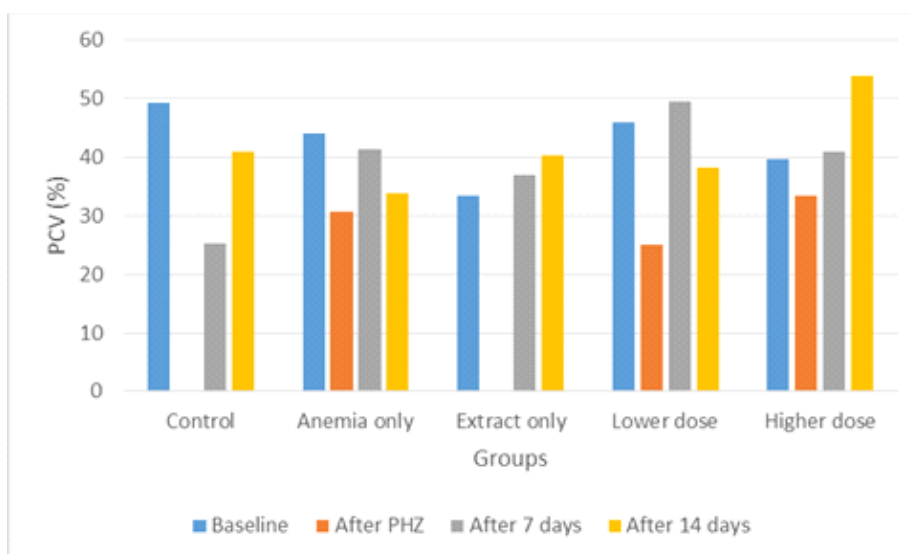**Figure 1: White blood cell count of the Wister rats**

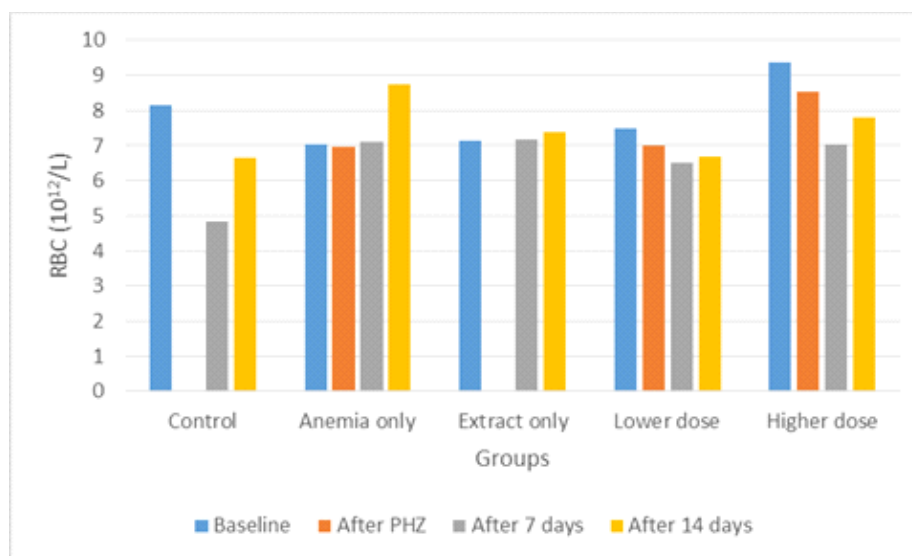**Figure 2: Packed cell volume of the Wister rats**

Figure 3: Red blood cell count of the Wister rats

Discussion

According to a similar research that studied the effect of Telfaira occidentalis leaf extract on packed cell volume (PCV) of rats with malaria-induced anemia, the post-inoculation PCV of the experimental group increased progressively from day 1 to day 5, showing that the extract produced a 22 % increase in post-inoculation PCV on day 5 compared with day 1 (Mohammed et. al., 2007). This study, however, showed about 100% increment among rat that were treated with 200mg/kg after 7 days as the PCV increased from 25.0% to 49.5%. Meanwhile, another study reported 13.0% increase with the use of Telfaira occidental (Ye, Pf, and Om, 2019), which implies that Perquitina nigrescens could be a better alternative for PCV boosting. A similar study that also used Perquitina nigrescens indicated 39.4% PCV increment after 7 days of giving the Wister rats 250mg/kg body weight. It was also established that 33.9% increment of PCV after seven days of giving 500mg/kg (Ikese et. al., 2020) while this study observed 24.0% PCV increase after seven days of giving 400mg/kg body weight to the Wister rat.

Treatment of anemic animals with P. nigrescens particularly at a dosage of 250 mg/kg for seven days significantly boosted the levels of RBC (35.8%), and treatment with the extract at a dosage of 500 mg/kg BW increased the levels of RBC by 42.0% (Ikese et. al., 2020). This study however indicated 91% increase after seven day of 200mg/kg dosage, moving from 3.71 to 7.1×10^{12}/L which later reduced to 5.30 by the fourteenth day meanwhile 52.0% increase was observed among the rats that were fed with 400mg/kg dosage, which further increased by 49.5% by the fourteenth day.

Obinna *et al* studied the hematological profile of rats fed with Portulaca oleracea Linn, after 14 days, the ones fed with 250mg/kg and 500mg/kg were observed to have white blood cell count of 6.25 and 5.75×10^9/L, platelet count of 300 and 235×10^9/L, lymphocytes of 66.75 and 69.0% and 1.75 and 1.5% respectively (Adebayo, 2020). This study, however, showed that after fourteen days, rats that were fed with 200mg/kg and 400 mg/kg of Perquitina nigrescens have white blood cell count of 13.53 and 16.07×10^9/L, platelet of 241 and 530×10^9/L, lymphocytes of 85% and 73% and monocytes of 7.75% and 5.3%, respectively. This difference could be due to the fact that the leaves extract used in this study was different from the one used by Obinna et. al. in 2019.

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QUALITY OF LIFE AND NUTRITIONAL STATUS OF CHRONIC KIDNEY DISEASES OF PATIENTS ATTENDING GBAGADA GENERAL HOSPITAL, GBAGADA, LAGOS STATE, NIGERIA

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ABSTRACT
Chronic kidney disease (CKD) is the progressive deterioration in kidney function with the loss of functional nephrons. The quality of life of CKD patients is frequently overlooked yet a critical consideration when evaluating their overall medical care. This study was aimed at assessing the quality of life and nutritional status of patients having CKD attending Gbagada General Hospital in Lagos State, Nigeria. A validated questionnaire was used in getting the socio-demographic and economic data of the respondents. Quality of life (QoL) was measured using the medical outcomes study 36 (SF -36). Nutritional status was assessed using food frequency and their anthropometric measurements. Gender distribution of the respondents showed that 58.2% were male and 41.6% were female. Data on quality of life showed that 53.4% stated that having a good house to stay is important, 3.3% stated extremely important, while 35.0% stated moderately important and 8.3% stated it was slightly important. Data on the BMI indicated few (38.3%) of the respondents were overweight while a few (26.7%) were obese. Most of the CKD patients have moderate QoL in overall domains. The majority of study sample have high QoL level in the social domain and most of the CKD patients on treatment responses presented low level of independence and physical domain and, moderate in mental domain, with 25.0% stated it was extremely important, 55.0% stated moderately important while 11.6% said slightly important. In conclusion, malnutrition is a common problem in the patients with CKD and there is need for more extensive studies.

Key words: Quality of life (QOL), Nutritional status, Patients, Chronic Kidney Diseases

INTRODUCTION
Health, according to the World Health Organization, is "a state of complete physical, mental and social well-being and not solely the absence of disease and infirmity" (WHO, 2006). Health can be promoted by encouraging healthful activities, such as regular physical exercise and adequate sleep, and by reducing or avoiding unhealthful activities or situations, such as smoking or excessive stress (Centers for Disease Control, 2021). In general, the context in which an individual lives is of great importance for both his health status and quality of life. It is widely recognized that health is maintained and improved not only through the advancement and application of health science, but also through the efforts and intelligent lifestyle choices of the individual and society. According to the World Health Organization, the main determinants of health include the social and economic environment, the physical environment, and the person's individual characteristics and behaviors (WHO, 2021).

Quality of life (QOL) is defined by the World Health Organization as "an individual's viewpoint of their position in life as regards to the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (WHO, 2020). Standard indicators of the quality of life include wealth, employment, the environment, physical and mental health, education, recreation and leisure time, social belonging, religious beliefs, safety, security and freedom (Gregory *et al.,* 2009; Barcaccia, 2013).

Nutritional status is the condition of health of an individual that is influenced by the intake and utilization of nutrients. Adequate nutritional health is maintained by the balance of nutrient intake and requirements

(Oyeyemi *et al.,* 2018). Height and weight are the two most easily obtained anthropometric measures and have been used extensively in screening and monitoring programs because abnormal weights categories (underweight, overweight and obesity) have been considered as risk factors for various diseases (Kitamura *et al.,* 2019). Poor diet (high consumption of sugar, salt, saturated fat, etc) and unhealthy lifestyle (smoking, alcohol consumption and physical inactivity) (Bays *et al*., 2014), have been identified as the major risk factors of chronic kidney disease and other non-communicable diseases (NCDs) (WHO, 2011). Chronic kidney disease can be defined as a glomerular filtration rate (GFR) <60 mL/min/1.73 m^2 or kidney damage or both for at least a period of 3 months (Norton *et al.,* 2016). Chronic kidney disease (CKD) is an issue of global health concern, with a greater burden in developing countries due to unavailability of resources (Norton *et al.,* 2016). In Nigeria, the prevalence of CKD rose from 8.0% to 45.0% (Okoye *et al.,* 2011), whereas 3.6% to 8.0% hospital-based prevalence of end-stage renal disease (ESRD) has been reported (Ulasi *et al.,* 2010). According to Eyeni *et al.* (2017), the prevalence of CKD in Africa is estimated at 250 million inhabitants with an incidence of 150 new cases per million inhabitants per year. In University Hospital of Brazzaville in Congo, the prevalence of CKD in the nephrology unit was 50.7% in 2016 (Eyeni *et al.,* 2017). The Global Burden of Disease (GBD) study ranked CKD the 19th leading cause of morbidity and death in 2013 (Jager *et al.,* 2017).

Chronic kidney disease has become a well-known issue of public health concern due to the increasing prevalence of the disease condition worldwide (Norton *et al.,* 2016). According to Kimmel *et al.* (2008), the quality of life of CKD patients is a frequently overlooked yet critical consideration when evaluating their overall medical care. A Connecticut study reported by Mujais *et al.* (2009) stated very low health related quality of life among CKD patients. They further stated in their study that anemia, changes in hemoglobin and other comorbidities are factors responsible for a low QoL among CKD patients. In view of the above, the present study seeks to evaluate the indicators of quality of life and nutritional status of CKD patients assessing healthcare in Gbagada General Hospital, Gbagada, Lagos State.

METHODOLOGY
The cross-sectional study was carried out at Gbagada General Hospital, Gbagada, Lagos State, Nigeria among 60 purposively selected respondents. A validated pretested questionnaire was used to collect relevant data from the respondents on the indicators of quality of life such as socio-demographic data (monthly income, household size, etc.), work status, sexual function, engagement in physical activities and support from family and friends. Body height and mass was measured using a heightometer and digital weighing scale, respectively, with approximations of 0.5 cm and 0.1 kg, respectively. . The BMI was calculated as the weight in kilograms divided by the square of the height in meters. It was then classified as less than 18.5 (underweight), 18.5 – 25.0 (normal weight), >25.0 – 30.0 (over weight), >30.0 (obesity). Data on food consumption pattern of the respondents were collected using the food frequency questionnaire. Data analysis was carried out using Statistical Package for Social Sciences (SPSS). Descriptive (mean, frequency and percentage) and inferential (e.g. Chi-square test) statistical analyses were employed. Level of significance was set at $p<0.05$. Nutrients analysis was performed using total diet assessment software. Ethical approval was obtained from the Chairman of the Ethical Review Committee of Bowen University Teaching Hospital, Ogbomoso, Oyo State. The respondents were informed about the study and were requested to sign a consent paper granting their willingness to participate in the study.

Inclusion Criteria
- Patients diagnosed of chronic kidney disease accessing healthcare in Gbagada General Hospital who agreed to participate in the study and signed consent form were recruited.
- Patients of both gender

Exclusion Criteria

- Patients who were not diagnosed of chronic kidney disease were not recruited for the study.
- Patients who are not willing to participate
- Patients who were critically ill
- Patients who were unconscious

RESULTS

The age distribution of the respondents showed that 38.3% aged between 47 to 62 years, 23.3% aged between 31 – 46 years, 25.0% aged less than 30 years while 13.3% aged 63 years or more. Gender distribution showed that 58.2% were male and 41.6% were female. Many (55.0%) of the respondents were married, 31.7% were widowed, 11.6% were single, while only 1.7% were widowed. Respondents, 80.0% were Christians, while 20.0% were Muslims. Results from the ethnic groups showed that Yoruba constituted 48.4% of the respondents, 25.0% were Igbo, 11.6% were Hausa while other ethnic groups constituted 15.0% of the population. Monthly income distribution showed that 30.0% of the respondents earned ₦51, 000 – 100, 000, 28.3% earned less than ₦20, 000; 23.4% earned less than ₦100, 000; while 18.3% earned from ₦21, 000 to ₦50, 000.

Result on need to be mentally healthy showed that 25.0% stated it was extremely important, 55.0% stated it was moderately important while 11.6% stated it was slightly important. Data on healthy sex life described that 31.6% stated that a healthy sex life was moderately important, 30.0% stated that it was slightly important, 16.6% stated that it was not all important, while 18.4% stated that it was very important and 3.4% stated that it was extremely important.

As shown by the study, 25.0% of the respondents agreed totally that disease condition affects their life, followed by 38.4% who stated it was mostly true, while 13.3% stated that their disease condition does not affect their life. Data on too much time devoted to dealing with kidney diseases showed that 53.3% stated that it was definitely true, 20.0% stated it was mostly true while 26.7% did not know. Due to the

disease condition, some (43.3%) stated that they were becoming like a burden to their family, 23.4% stated that it was definitely true, while 20.0% disagreed.

The body mass index result shows that slightly above one third (38.3%) of the respondents were overweight while a little above quarter were obese (26.7%), 18.4% were normal and 16.6% were underweight. Sodium intake was 1971.42 ±1082.15 mg/day. About 11.0% of the respondents met the recommended level of sodium intake of 2000–2300 mg/day. The energy intake average was 1904.98± 592.50 kcal/day. According to K/DOQI Clinical Practice Guidelines for Nutrition in Chronic Renal Failure, only 16.8% of the respondents met the recommended calorie density of 30–35 kcal/kg. For protein, about 33.0% of respondents consumed the recommended minimum of 1.2 g/kg of protein per day. The mean carbohydrate intake accounted for 64 % of the total energy. On the other hand, about two thirds of the respondents consumed inadequate fiber and potassium; 50.0% had excess intake of phosphorus, about 77.0% had less than the recommended minimum of 500.0mg of dietary calcium daily intake and 15.0% of the respondents consumed more potassium than recommended.

DISCUSSION AND CONCLUSION

The results of the present study on the demographic characteristics of patients with chronic kidney disease (CKD) in the hospital setting were in line with the previous research. A study conducted by Chen et al. (2016) in Taiwan found that the majority of CKD patients were in the 45-64 years age group, which was similar to the present study's finding that 38.3% of respondents were aged between 47 to 62 years. Another study by Jha et al. (2013) in India found that the incidence of CKD was higher in males than in females, which is consistent with the present study's finding that 58.2% of respondents were male.

The present study found that 55.0% of the respondents were married, which was consistent with the findings of a study conducted by Qureshi et al. (2016) in

Pakistan, which reported that a majority of CKD patients were married. However, the present study's finding that only 1.7% of respondents were divorced differs from previous research by Jha et al. (2013), which reported a higher incidence of CKD among divorced individuals.

The finding that 80.0% of the respondents were Christians and 20.0% were Muslims in the present study is consistent with the religious demographics of the Nigerian population, as reported by the Pew Research Center (2019). However, there is limited research on the relationship between religious affiliation and CKD incidence.

Regarding ethnicity, the present study found that the Yoruba ethnic group constituted 48.4% of the respondents, which was consistent with a study by Adejumo et al. (2020) in Nigeria that reported a higher incidence of CKD among the Yoruba ethnic group.

The study showed that the respondents believed that mental health was moderately important, with only a quarter stating that it was extremely important. This finding was consistent with the results of previous studies that have demonstrated that individuals with chronic kidney disease are at a higher risk of developing depression and anxiety disorders (Cukor et al., 2015; Tang et al., 2018). The study further showed that respondents were divided on the importance of a healthy sex life, with 30.0% stating that it was slightly important and 31.6% stating that it was moderately important. This finding was in line with the findings of a study by Jhamb et al. (2013), which reported that chronic kidney disease could have a negative impact on sexual function, and many patients experienced sexual dysfunction.

The study found that a significant proportion of respondents (25.0%) agreed totally that their disease condition affects their life, which was consistent with previous research that found that chronic kidney disease could have a significant impact on patients' quality of life (Mujais et al., 2009). Moreover, more than half of the respondents (53.3%) reported that they devoted too much time to dealing with kidney disease, which could impact their ability to perform daily activities

and could have negative effects on their mental health and well-being (Cukor et al., 2015).

The study also found that a significant proportion of respondents (43.3%) felt that they were becoming like a burden to their family, which was consistent with previous research that found that chronic kidney disease could have significant financial and social burden on patients and their families (Purnell et al., 2019). This highlights the need for healthcare professionals to provide not only medical care but also social support and counseling to patients and their families.

The results of this study indicate that a majority of the participants with chronic kidney disease had poor dietary intake, which was consistent with previous research. A study by Shimizu et al. (2018) found that sodium intake was high in patients with chronic kidney disease, with only 12.2% of the respondents within the recommended daily intake of 2000–2300 mg/day. Similarly, a study by Kaur et al. (2019) found that most participants with chronic kidney disease consumed inadequate amounts of fiber and potassium. Additionally, the study by Kaur et al. (2019) found that a majority of the participants consumed more than the recommended daily intake of phosphorus, which was consistent with the findings of this study.

The low consumption of dietary calcium among the respondents was also a concern, as adequate calcium intake is important for maintaining bone health in individuals with chronic kidney disease. This finding was consistent with the results of a study by Abdollahi et al. (2020), which found that most respondents with chronic kidney disease had inadequate calcium intake.

The low consumption of protein among the participants was also noteworthy, as protein intake was a critical aspect of managing chronic kidney disease. A study by Qian et al. (2020) found that inadequate protein intake was common among patients with chronic kidney disease. However, it is important to note that excessive protein intake can also be harmful to individuals with chronic kidney

disease, and thus, a balance must be struck in terms of protein intake.

In conclusion, the results of this study suggest that the majority of the respondents with chronic kidney disease had poor dietary intake, which was consistent with previous research. These findings highlight the importance of proper dietary management in the treatment of chronic kidney disease, and the need for interventions to improve dietary intake among individuals with this condition.

RECOMENDATION

It is recommended that the assessment of nutritional status and regular monitoring of overall quality of life should be part of routine evaluation of all chronic kidneys disease patients and study should be conducted in more hospitals. Further studies are needed to explore effective strategies for improving dietary intake in individuals with chronic kidney disease. The study provides valuable insights into the perspectives and experiences of patients with chronic kidney disease. However, further research is needed to explore these issues in-depth and to develop effective interventions that address the unique challenges faced by these patients.

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ASSESSMENT OF THE GLYCEMIC INDEX OF MEAL FROM UNRIPE PLANTAIN
(*Musa paradisiaca*)

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Abstract
Plantain, usually consumed as a cheap source of energy in many parts of African countries has been identified to have therapeutic importance for its low glycemic index properties. This study assessed the glycemic index of meals from unripe plantain. The unripe plantain was purchased from Osiele markets, Abeokuta. Ten (10) apparently healthy volunteers aged 21-25years with normal BMI (18.50-24.99kg/m^2) were served 350g of the meal to give 50g available carbohydrates and 50g glucose was used as the reference sample. The meal was served plain after 11-12 hours overnight fast, and blood glucose was tested at a specified time interval using a calibrated glucometer. The incremental area under the curve (IAUC) was determined using Microsoft Excel, and the GI was calculated. Statistical Package for Social Sciences was used to calculate the mean and standard deviation. The mean proximate values from the duplicate readings were moisture (68.9±0.2), crude protein (4.0±0.1g), crude fat (1.81±0.04g), total ash (1.55±0.1g), total carbohydrate (23.1±0.1g) and total dietary fiber (8.8±0.2g). The mean incremental area under the curve for the sample was 7791.9±513.3mg/dl, and glucose was 1402.2±1725.5mg/dl. The glycemic index and glycemic load values of the meal were 56.4±8.4 and 8.1±1.2, respectively. The result of this study revealed that unripe plantain has a moderately low glycemic index and load; thus, it has potential for therapeutic purposes. However, there is a need for further research on the effects of processing methods on glycemic index and load of unripe plantain.

Keywords: Glycemic Index, Unripe Plantain, Glycemic Load, Blood Glucose

INTRODUCTION
Plantain (*Musa paradisiaca*), usually consumed as a cheap source of energy in many parts of African countries (Vivienne *et al*, 2016) has been identified to have therapeutic importance for its low glycemic index properties (Oluwajuyitan & Ijarotimi, 2019). Plantains, an important plant food crop grown in more than 120 countries of the world (Bertin *et al*, 2020) is ranked third after yam and cassava, and it's an excellent source of dietary calorie staple for millions of people in Nigeria (Vivienne *et al*, 2016;

Akinjayeju *et al*, 2020). Plantain is widely cultivated in the southern parts of Nigeria and other African countries due to the favorable weather condition (Fadimu *et al*, 2018). According to Food and Agricultural Organization Statistics (FAOSTAT) (2019), Western African production of plantain stands at nearly 39 million tons in 2017, with an overall mean growth rate of 1.7% per year.
Plantain is mainly consumed in different forms (both ripe or unripe), which include; boiled, fried, roasted, or processed into flour

and accustomed to preparing local dough meal referred to as 'amala' (Famakin *et al*, 2016; Honfo *et al*, 2020). All of these forms have the advantage of all-season availability, low cost, and ease of processing (Lamptey *et al*, 2019).

Plantain is an important food and cash crop (Nwosu and Lawal, 2010) which has been found to contributes significantly to food and nutritional security through income diversification and poverty reduction (Honfo *et al*, 2020). United States Department of Agriculture (USDA) (2012) and Honfo *et al*, (2020) revealed that plantain is one of the most important horticultural crops and among the ten most important food security crops that feed the world. In the last one decade, the demand for plantain has been found to have a tremendous increment; this is because of the emergence of local processing industries that use plantain industrially in the production of bread, cakes, biscuits, among others (Ayanwale, 2016).

Nutritionally, Plantainsare lauded for being a source of macronutrient, and micronutrients like minerals and vitamins (Lamptey *et al*, 2019; Oluwajuyitan & Ijarotimi, 2019; Honfo *et al*, 2020). It provides for more than 70 million people 25% and 10% of the daily intake of carbohydrates and calories respectively (Ayanwale *et al*, 2016). Itis also rich dietary fiber especially hemicelluloses.It is however considered to have minimal protein and fat (Odenigbo *et al*, 2013). Unripe plantain is a good source of vitamins and minerals including irons, zinc, potassium, and Provitamin A (Oluwajuyitan and Ijarotimi, 2019). Honfo, *et al* (2007) discovered that the daily consumption of plantain foods by children provided approximately 0.88mg of iron, 0.26mg of zinc, and 24.55µg Retinol Activity Equivalent (RAE) and daily consumption of plantain derived foods provided mothers with approximately 1.80mg of iron, 0.6mg of zinc and 43.35µg Retinol Activity Equivalent (RAE).

The glycemic index is a ranking system for carbohydrates based on their immediate effect on blood glucose levels (Madu *et al*, 2018). Ekwe *et al* (2019) defined glycemic index as a ranking of carbohydrate foods from 0 to 100 according to the ability of a food item to raise blood glucose. The nutritional quality of food is related to its glycemic index (Akinlotan *et al*, 2016).The glycemic effect of food is a measure of how fast, how high the blood glucose rises and how quickly the body responds by bringing it back to normal after food ingestion. Lower GI foods were considered beneficial relative to the low glycemic response following ingestion compared with high GI foods (Madu *et al*, 2018). The concept of glycemic index has been extended to include the effect of the total amount of carbohydrate consumed on the glycemic response. Thus, glycemic load (GL), a product of GI and quantity of carbohydrate eaten.Lamptey *et al* (2019) observed that eating a low glycemic foods including plantain provides healthy and beneficial nutrients with protective properties against metabolic diseases. Ayodele and Godwin (2010) established that consumption of carbohydrate rich foods with a high glycemic index is a risk factor not only for diabetes, but also obesity and other cardiovascular diseases. The consumption of low GI and GL diets have more recently been widely recommended for the prevention of chronic diseases including diabetes, obesity, cancer, and heart disease and in the treatment of cardiovascular risk factors, especially dyslipidaemia (Madu *et al*, 2018).

According to Faturoti *et al* (2007) and Ayanwale *et al* (2016), Plantain has been found to have outstanding and proven medical relevance. Oluwajuyitan & Ijarotimi (2019) identified plantain as important staples medically recommended for diabetic patient for its reduction effect on postprandial glucose level. Plantain is effective in lowering blood glucose because theinsoluble fibers present therein create a barrier to enzymatic hydrolysis of starchy staples thereby decreasing the glycemic response (Lamptey *et al*, 2019). Fiber has also been identified by Ng *et al* (2020) as an important food component that can be used to reduce glycemic index of a food. In addition to the blood glucose lowering action of fiber in plantain, Eleazu (2016) in a study carried out using streptozotocin-induced diabetic rats confirmed that plantains rich in alkaloids, flavonoids, saponins and tannins h a v e a n t i h y p e r g l y c e m i c a n d

hyperlipidemicproperties.

Oluwajuyitan & Ijarotimi (2019) also supported the claim that plant-based functional foods are getting more attention than ever before, because of their potential benefit to the society especially in the area of nutrition, medicine, and pharmacology. The nutritional values of these plant-based foods have been said to be in bioactive compounds like photochemicals and proteins (Igwe *et al*, 2012).

PROBLEM STATEMENT AND JUSTIFICATION

The increasing incidence of many generic diseases like diabetes mellitus, and heart related ailments like stroke and high blood pressure level is becoming alarming globally, both in developed and developing countries (Akinjayeju *et al*, 2020).

Diabetes mellitus has become one amongst the foremost most common chronic diseases in the world, with 422 million people affected worldwide (International Diabetes Federation (IDF), 2015; WHO, 2016). Coupled with other non-communicable diseases, diabetes is an important cause of morbidity and mortality globally (Zheng *et al*, 2017; Mutashambara *et al*, 2018; Asmelash and Asmelash, 2019).

According to The International Diabetes Federation (2019), it was estimated that in 2017, there are approximately 425 million and 2million adults (20-79 years) living with diabetes worldwide and in Nigeria respectively, 95% of all cases being type 2 diabetes mellitus (Marques *et al*, 2020). This increasing trend of diabetes mellitus has led to more emphasis on diabetes-related functional food with the view to improving blood sugar control (Oluwajuyitan & Ijarotimi, 2019). One in all approaches is by assessing the physiological effects of food by the concept of glycemic index which could be a value given to carbohydrate-rich foods based on their effect on post-prandial blood sugar (Ng *et al*, 2020).

Use of traditional diets has long been known to scale down the incidence of diet-related diseases (Onuoha *et al*, 2017) of which plantain, cultivated in many tropics and subtropical countries of the planet is the third most important staple after yam and cassava (Famakin *et al*, 2016). In research conducted by Caydam *et al*. (2019), the findings showed that nutrition and lifestyle of individuals play an important role in the quality of life of patients with diabetes mellitus. Akinlotan *et al* (2016) revealed that consumption of high and simply digestible carbohydrate foods could increase the risk of diabetes and other nutritional diseases resulting from their higher glycemic index. Thus, careful combination of slowly digestible starchy food staples like plantain could give appreciable low glycemic index and therefore the required nutritional value.

Akinjayeju *et al* (2020) also observed that meals from unripe plantain have been recommended for diabetics due to its relatively low glycemic index. Plantain has however been identified to be nutritionally poor because it is deficient in fat and protein (Oluwajuyitan & Ijarotimi, 2019). In addition, diabetics are sometimes faced with the issue of monotony in their dietary pattern as a result of limited range of foods to consume, however, most diabetes care providers also considered plantains being rich sources of carbohydrates taboo for diabetics (Lamptey *et al*, 2019).

Madu *et al* (2018) affirmed that research work and data on the GI and GL of Nigerian local foods is scarce, many of these local foods are replaced with energy dense cereal and cereal products which are being consumed on daily basis in large quantities. Information on the GI and GL of these foods are therefore important as enablers of planning therapeutic diet by the physicians and dietitians (Madu *et al*, 2018). It is therefore important to assess the effect of unripe plantain meal on blood sugar of normo-glycemic adults so as to provide data on the potential of unripe plantain meal for therapeutic purposes especially in the management of metabolic disorders and also to promote healthy locally made food from unripe plantain meal for both therapeutic and non-therapeutic purposes. Hence, this study assessed the glycemic index of meal from unripe plantain (Musa paradisiaca).

METHODOLOGY

Research Design
This research was experimental and analytical in design

Sample Preparation
Bunches of Freshly harvested, mature Green unripe plantain (Musa paradisiaca) was purchased from Osiele markets, Abeokuta, Ogun State. Other equipment used were washed properly and rinsed well with water. The unripe plantain was peeled, and 5 kg quantity was cut into (10 mm long) and was boiled in 5L of water containing 1gm of salt for 1hour until tender and soft (Ayodele and Godwin, 2010). The water was drained, and the plantain was served to the subjects.

Proximate Analysis of the Sample
The standard method (AOAC, 2012) was used to determine the proximate compositions (moisture content, ash, crude fiber, crude fat, and crude protein) of the experimental food sample. Carbohydrate content was determined by difference i.e.
Carbohydrate (%) = 100 - (% Moisture + % Fat+ % Protein + % Ash + % Crude fibre)

Subject Selection
Ten healthy volunteers (5 Males and 5 Females) were randomly selected for the study as described by Madu *et al* (2018). The volunteers were screened based on anthropometric assessment, biochemical (Blood glucose level) and vital signs assessment and it was ensured that only healthy individuals were allowed to participate in the study.

Inclusion and Exclusion Criteria
Healthy non-diabetic individuals between the ages of 19 and 25 years, with normal BMI (18.50-24.99kg/m^2) were included in this study. Smokers, individuals on prescribed medications, pregnant mothers, individuals with diagnosed disease or metabolic diseases, and who refused to consent to the study were excluded in the study (Madu *et al*, 2018).

Ethical Consideration
The study was permitted by the Department of Nutrition and Dietetics, Federal University of Agriculture, Abeokuta, and also written informed consent were obtained from the subjects after the study objectives has been explained to them.

Method of Data Collection
A semi-structured and interviewer-administered questionnaire was used to assess the socio-demographic characteristics of the respondents. Anthropometric measurement and oral glucose tolerant test (OGTT) of the respondents were assessed using standard procedure described below.

Anthropometry Assessment
Anthropometry data including body weight and height were assessed using standard procedures described by Food and Nutrition Technical Assistance III Project (FANTA) (2016). Body weight was measured (to the nearest 0.5 kg) with the subject standing erect and bare footed on a calibrated weighing scale. The weighing scale was standardized by placing a known weight of 50kg on the scale as described by Ayodele and Godwin (2010). Height was measured (to the nearest 0.1 cm) using a vertical scale of portable stadiometer with the subject standing in an erect position, legs together, heels touching the backboard and knees straight. The body mass index (BMI) of the respondents was calculated as weight in kilograms divided by squared height in meter and the nutritional status was classified using the standard recommendation (WHO, 2000).

Blood Glucose Measurement
The blood sample of each of the respondent was taken by fingertip prick using the lancet and it was used to stain the test strips and the blood glucose level was checked using a fine test calibrated glucometer (Accu-check) and the readings were recorded.

Experimental Procedure
Ten healthy adults were served boiled unripe plantain and glucose on separate occasions. This was done on a daily basis for 2 days after a 10-12 hour overnight fast. The serving size was determined by calculating the quantity of the test food that will give 50gm available carbohydrate when consumed and 50g glucose was served as the reference food. All samples were consumed with 500ml of water. Blood samples were collected before feeding (0 min) and at 30, 60, 120 and 180

minutes after the test meal was given. Subjects were requested to avoid strenuous physical activity and alcohol on the day before the experiment. During the test, they were asked to remain seated.

Calculation of Glycemic Index

Blood sugar against time was plotted in Microsoft Excel spreadsheets using a line graph. GI was calculated by expressing the glycemic response area for the tested foods as a percentage of the mean response. The glycemic index (GI) was computed using the formula:

$$GI = \frac{IAUC(a)}{IAUC(b)} X100$$

Note: IAUC(a) = Area under the curve fortest food

IAUC(b) = Area under the curve for reference food.

The average of the two measures for each subject was taken as the GI for that test food for the subject. The GI for each food was finally calculated as the mean of the average of the GIs in ten subjects in the group (Ayodele and Godwin, 2010, Madu *et al*, 2018). The Glycemic Index of the meal was categorised as follows: Low-GI=< 55%, Medium-GI= 56-69% and High-GI =>70% (Dona *et al*, 2010; Oluwajuyitan & Ijarotimi, 2019). Data were then presented by graphs, means and standard deviation values.

The incremental area under the curve (IAUC) for the test meal for each subject was calculated as the sum of the surface triangle and trapezoids of the blood glucose curve and the horizontal baseline running in parallel to the time axis from the beginning of the curve (time 0 min) to the point at 60mins to reflect the total rise in blood glucose concentration after eating the reference food. The Incremental Area under the Curve (IAUC) for the test food (unripe plantain meal) was obtained in a similar way.

Statistical Analysis

Excel version 2016 was used for coding of questionnaire and figure presentation such as line graph (was used for representing change in blood sugar level of respondents for experimental food), for calculating the incremental areas under the curve (IAUC) using the trapezoidal rule for the food samples. Statistical package for social science (SPSS) version 25.0 was further used for data presentation like Frequency count, Percentage, Mean, and Standard deviation.

Results
Socio-Demographic Characteristic of the Respondents

Table 1 below shows the socio-demographic characteristics of the respondents. The mean age was 21.0±2.0years. Half (50.0%) of the respondents were of the age range 18-21years, most (80.0%) were from a monogamous family, the majority (70.0%) were Christians and there was equal distribution of males and females.

Table 1: Socio-Demographic Characteristic of the Respondents (n=10)

Variables	Frequency	Percentage
Age (years)		
18-21	5	50.0
22-25	5	50.0
Mean age		21.0±2.0years
Gender		
Male	5	50.0
Female	5	50.0
Family Type		
Monogamous	8	80.0
Polygamous	2	20.0
Religion		
Christianity	7	70.0
Islam	3	30.0

Anthropometric Characteristics of the Respondents

Table 2 revealed the anthropometric characteristics of the respondents. The mean BMI, waist circumference and hip circumference for male was 21.82±0.93kg/m^2, 74.90±1.88cm and 91.10±1.43cm, respectively while the mean BMI, waist circumference and hip circumference for female was 21.16±1.25kg/m^2, 66.20±7.69cm and 90.80±7.98cm, respectively.

Table 2: Anthropometric Characteristics of the Respondents (n=10)

Variable	Male		Female	
	Mean	**SD**	**Mean**	**SD**
Height (m)	1.76	0.02	1.63	0.09
Weight (kg)	67.80	3.35	56.60	7.80
BMI (kg/m^2)	21.82	0.93	21.16	1.25
Waist Circumference (cm)	74.90	1.88	66.20	7.69
Hip Circumference (cm)	91.10	1.43	90.80	7.98
Waist/Hip Ratio	0.82	0.02	0.73	0.03

Proximate Analysis of Boiled Unripe Plantain

Table 3 depicted the proximate analysis of boiled unripe plantain. The mean proximate values from the duplicate readings for moisture, crude protein, crude fat, crude fiber, total ash, total carbohydrate, and total dietary fiber were 68.99±0.17%, 4.00±0.09%, 1.81±0.04%, 0.57±0.02%, 1.55±0.06%, 23.11±0.13% and 8.79±0.18% respectively.

Table 3: Proximate Analysis of Boiled Unripe Plantain per 100g

Parameters	Mean	SD
Moisture (%)	68.99	0.17
Crude Protein (%)	4.00	0.09
Crude Fat (%)	1.81	0.04
Crude Fiber (%)	0.57	0.02
Total Ash (%)	1.55	0.06
Total Carbohydrate (%)	23.11	0.13
Total Dietary Fiber (%)	8.79	0.18

Mean Value of Blood Glucose at Different Time Interval

Mean value of blood glucose at different time interval is shown on table 4 below. The mean value for the test meal was 56.4±7.4, 67.4±7.4, 67.5±7.7, 70.0±6.7, and 53.4±7.5 at 0mins, 30mins, 60mins, 90mins and 120mins respectively compared to the reference sample with 85.5±22.55, 113.7±33.5, 118.9±14.0, 127.3±12.8, and 129.5±10.4 mean value at 0mins, 30mins, 60mins, 90mins and 120mins, respectively. The changes in blood glucose level at different time interval is represented in figure 1 below.

Table 4: Mean Value of Blood Glucose at Different Time Interval

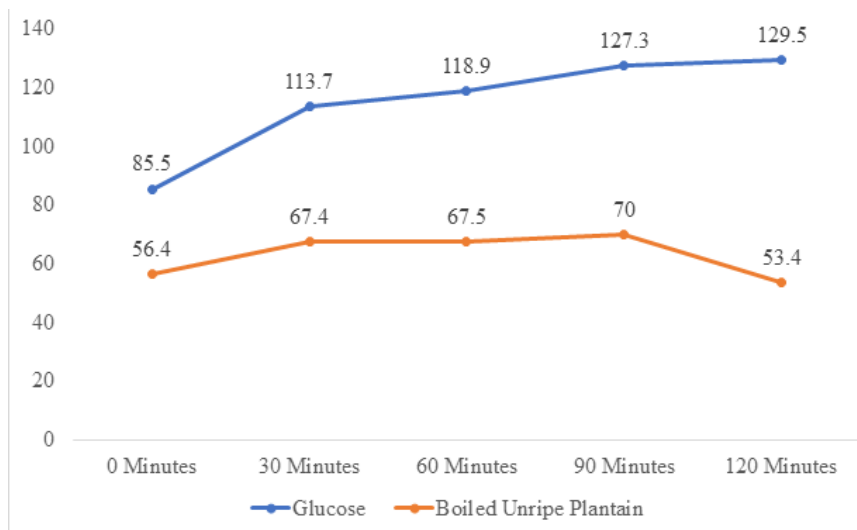| Time (minutes)	Type of Food	Mean of Blood Glucose ± SD
0 Minutes	Glucose	85.5±22.6
	Boiled Unripe Plantain	56.4±7.4
30 Minutes	Glucose	113.7±33.5
	Boiled Unripe Plantain	67.4±7.4
60 Minutes	Glucose	118.9±14.0
	Boiled Unripe Plantain	67.5±7.7
90 Minutes	Glucose	127.3±12.8
	Boiled Unripe Plantain	70.0±6.7
120 Minutes	Glucose	129.5±10.4
	Boiled Unripe Plantain	53.4±7.5

Figure 1: Change in blood glucose level of subjects on test glucose and unripe plantain meal

Mean Glycemic Index and Incremental Area under the Curve for Test Foods
The mean Glycemic Index and Incremental Area under the Curve for Test Foods is shown on table 5 below. The mean glycemic index was 56.36±8.4, the mean Incremental Area Under Curve (IUAC) for the test food was 7791.85±513.3 and the glycemic load was 8.07±1.20.

Table 5: Mean Glycemic Index and Incremental Area under the Curve for Test Foods

Variables	Values
Available Carbohydrate per 100g	14.32g
Serving Size	350.0g
Incremental Area Under Curve (IUAC)	7791.85±513.3
IUAC for Glucose	14022±1725.5
Glycemic Index (GI)	56.36±8.4
GI Ranking	Medium
Glycemic Load	8.07±1.20

Discussion

The knowledge of glycemic index of foods is important in the management of metabolic diseases and the consumption of low GI and GL diets is gaining attention in prevention and management of chronic diseases including diabetes, obesity, cancer, and heart disease (Madu *et al*, 2018; Lamptey *et al*, 2019). It is important to know the glycemic index of commonly consumed local foods and to classify them based on their glycemic properties (Dereje *et al*, 2019). This study therefore determined the glycemic index of meal from boiled unripe plantain (*Musa paradisiaca*).

The mean age and body mass index of the respondent in this study were 21.0±2.0 years and 21.5±1.1kg/m^2, respectively. This result is similar to the study carried out in Edo State, Nigeria (Ayodele and Godwin, 2010) where the mean age of the study was 22.0±0.9years and the mean BMI was recorded as 21±0.7kg/m^2. The similarity could be related to the respondents of the studies being undergraduate students of tertiary institution in Nigeria.

Different nutritional and physiological factors have been identified to influence glycemic response and the GI value of meals. Included among these factors is the cooking methods, starch digestibility, the interactions of starch absorption with the amount of fiber, fat and protein present, and the proportion nutrient constituent (Omage and Omage, 2018). Plantain has been reported as a good source of Energy, Carbohydrates, and Dietary fiber (Lamptey *et al*, 2019; Oluwajuyitan & Ijarotimi, 2019; Honfo *et al*, 2020). The

proximate value for total carbohydrate was 23.11g. This result is dissimilar to the carbohydrate content of boiled unripe plantain reported by Ayodele and Godwin (2010) with a value of 36.28g but was however similar to the carbohydrate content of unripe plantain flour (23g) reported by Ndayambaje *et al* (2019). Lamptey *et al* (2019) also reported the nutritional value of Plantains solid composition as 32% carbohydrates. The crude fiber of 0.57g was reported in the study, this is similar to the crude fiber of 0.81g for boiled unripe plantain reported by Ayodele and Godwin (2010) and dissimilar to the crude fiber of unripe raw plantain reported by Madu *et al* (2018) with a value of 12.03g. The variation can be attributed to the processing method. Generally, plantain has been said to be of low protein and fat (Odenigbo *et al*, 2013; Oluwajuyitan and Ijarotimi, 2019), The result of this study also supported the previous research as protein and fat content as indicated by proximate analysis were 4g and 1.81g, respectively. The result is similar to the crude protein value (3.13g) and fat (1.35g) of unripe plantain (*Musa paradisiaca*) reported by Ayodele and Godwin (2010).

A serving size of 350g of boiled unripe plantain was fed to the study participants to provide an equivalence of 50g available carbohydrate with the 50g of Glucose as the reference sample. The pre-prandial and postprandial blood glucose tests were done and recorded for 0, 30, 60, 90, 120 minutes accordingly. These same procedures have been used and reported in previous studies (Eleazu, 2016; Kouamé *et al*, 2017; Omage

and Omage, 2018; Onuoha *et al*, 2017 and Oyesanya *et al*, 2022).

The glycemic index obtained from this study was 56.36±8.4, which ranked medium. Ayodele and Godwin (2010) in their study reported the glycemic of boiled unripe plantain as 64.94, which also ranked medium. However, Madu *et al* (2018) research findings revealed that the glycemic index of boiled unripe plantain (*Musa paradisiaca*) was 96.5, which was ranked high. In addition, Madu *et al* (2018) concluded that boiled unripe plantain has more promising control effect on blood glucose level and could be better used in the management of metabolic disorder such as diabetes mellitus. Oluwajuyitan and Ijarotimi (2019) found the glycemic index of unripe plantain flour dough to be low (42.95). In the study of Akinlotan *et al* (2016), the experiment result revealed the glycemic index of plantain blend was lower than that of cocoyam blend. In addition, Madu *et al* (2018) experimental result showed that the glycemic index of boiled unripe plantain (96.5) was lower than that of boiled cocoyam (97.3). This shows that plantain can be effective in the management of glycemic control.

Conclusion and Recommendation

The glycemic index of meal from unripe plantain is ranked medium and could make it a diet that will be moderately effective in the management of diabetes. Meal from unripe plantain should be promoted for both therapeutic and non-therapeutic purposes. In addition, Further research should assess the effect of processing methods on glycemic index of meal from unripe plantain and also, improving the protein and fat content of meal from unripe plantain to make it suitable in making complementary foods for infants.

Acknowledgement

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Notes from Websites Reviews by O.E. Oyewole

Diet 911: After You Overeat

What to do after you've blown your calorie budget?

Holiday parties, gourmet meals, and celebratory dinners can easily get a little (or a lot) more decadent than you expected. Let's face it: Everyone blows his or her calorie budget every now and then.

Do you need to worry? Is that old dieter's saying, "a moment on the lips, forever on the hips" really true? And what should you do next?

Here's what medical experts, registered dietitians, and weight management specialists say about the damage done by one-time splurges and their tips for getting back on track.

The good news is, one meal is not going to ruin you if you eat sensibly and exercise regularly the rest of the time and get back to your routine, experts say. You need to eat 3,500 calories to gain one pound of body fat, so it's unlikely that a single overindulgence will show up on the scale.

"We call these 'taking time-outs,' and we all take them," says Rebecca S. Reeves, DrPH, RD, assistant professor at Baylor College of Medicine in Houston. "No one is perfect in their eating habits. What we have to learn is that we are giving ourselves permission to do this, and as soon as it's over, we should go back to the eating plan we normally follow. This does not give us permission to continue to overeat and binge."

The problem is, overeating is not a one-time affair for most Americans, says cardiologist Allen Dollar, MD, chief of cardiology at Grady Memorial Hospital and assistant professor of medicine at Emory University School of Medicine in Atlanta.

"Most people overeat somewhere between 500 and 1,500 calories every single day," Dollar says. "If they don't consciously think about their dietary intake every day, they will be overweight."

Don't Beat Yourself Up

Too many dieters throw in the towel after a splurge, says Kathleen M. Laquale, PhD, a licensed nutritionist, athletic trainer, and associate professor at Bridgewater State University in Massachusetts.

"You may feel defeated and say, 'Oh I blew my diet, and I'll just eat the whole Christmas season and the heck with it," Laquale says. "When you do overindulge, don't be self-deprecating. You overeat for one day; let's get back on track again. Let's be more conscious of our portion sizes the next day."

Think of Your Diet Over the Course of Several Days

It's typical to eat more sensibly during the week and take in more calories on the weekend, says Joan Salge Blake, MS, RD, clinical associate professor at Boston University.

So if you eat more calories than you should at a party on a weeknight, consider that one of your "weekend" days and compensate for it accordingly.

"In other words, you had a party on a Tuesday, and that party was quite fun and it almost became like a Saturday," Salge Blake says. "Just make sure that the days that come after that festive occasion reflect more of the structured Monday-through-Thursday eating pattern, rather than the weekend."

Resume Sensible Eating

You may be tempted to compensate for the extra calories by skipping meals the next day. But skipping breakfast or lunch will only leave you hungry and at risk for pigging out later.

Salge Blake recommends cutting back throughout the day with a series of small meals packed with fiber-rich fruits and vegetables:

- Wait until you're hungry. Then have a light breakfast such as a bowl of low-fat yogurt and berries.
- Mid-morning snack: A piece of fruit and an ounce of low-fat cheese
- Lunch: A big salad with lean protein such as fish or chicken, or a whole-wheat pita pocket with lettuce and tuna or turkey
- Afternoon snack: A cup of vegetable soup and an orange
- Dinner: A piece of fish and plenty of vegetables

Skip the Scale

After a feast, your weight is bound to be inflated. That's not because of an increase in body fat, but because of water retention brought on by the excess salt you likely ate.

Weighing yourself will only make you feel defeated. Salge Blake tells clients to weigh themselves on Fridays, when they're likely to weigh their lowest.

Stick to Your Normal Exercise Routine

Compensating for the extra calories by over-exercising will leave you burned out or worse, Laquale says.

"If you overload and do more than your regular routine, you could strain a muscle, you could hurt a joint. So muscle soreness may set in. Then you can't exercise," she says. "So now we're into your third day, and you're tight all over and you're still feeling down because you overate, so it creates a vicious cycle."

Track What You Eat

Setting a caloric goal for the day and recording what you eat keeps you conscious of what you're eating, Dollar says. There are many calorie-counting web sites and mobile applications to choose from, including WebMD's Food & Fitness Planner.

The only way to win the game "is to be meticulous about your total calories for the week," Dollar says. "If you don't stay on top of things, you'll slowly and subtly lose the battle. You have to be conscious every time your hand goes from a plate to your mouth."

HEART ATTACKS AND WATER!

How many folks do you know who say they don't want to drink anything before going to bed because they'll have to get up during the night?

Heart Attack and Water...Any link? Something else I didn't know ... I asked my Doctor why people need to urinate so much at night time. My Cardiologist reveals that gravity holds water in the lower part of the body when I'm upright. When you lie down and the lower body (legs, etc) seeks level with the kidneys, it is then that the kidneys remove the water because it is easier. This then answers my question...

Correct time to drink water...from A Cardiac Specialist! Drinking water at a certain time maximizes its effectiveness on the body:

2 glasses of water after waking up - helps activate internal organs

1 glass of water 30 minutes before a meal - helps digestion

1 glass of water before taking a bath - helps lower blood pressure

1 glass of water before going to bed - avoids stroke or heart attack

I can also add to this... studies have shown that water at bed time will also help prevent night time leg cramps if you are a candidate. Your leg muscles are seeking hydration when they cramp and wake you up.

Dr. Virend Somers, is a Cardiologist from the Mayo Clinic, who is a lead author of the report in the July 29, 2008 issue of the Journal of the American College of Cardiology reveals the following: Most heart attacks occur in the day, generally between 6A.M. and noon. Having one during the night, when the heart should be most at rest, means that something unusual has happened. Somers and his colleagues have been working for a decade to show that sleep apnoea (a brief pause in breathing) is to blame.

1. If you take an aspirin or a baby aspirin once a day, take it at night. The reason: Aspirin has a 24-hour "half-life"; therefore, if most heart attacks happen in the wee hours of the morning, the Aspirin would be strongest in your system.

2. FYI, Aspirin lasts a really long time, (when it gets old, it smells like vinegar).

3. Why keep Aspirin by your bedside? It's about Heart Attacks. There are other symptoms of a heart attack, besides the pain on the left arm. One must also be aware of an intense pain on the chin, as well as nausea and lots of sweating; however, these symptoms may also occur less frequently.

4. **Note:** There may be NO pain in the chest during a heart attack. The majority of people (about 60%) who had a heart attack during their sleep did not wake up. However, if it occurs, the chest pain may wake you up from your deep sleep. If that happens, immediately dissolve two aspirins in your mouth and swallow them with a bit of water.

   Afterwards: - Seek help urgently - Phone a neighbour or a family member who lives very close by.- Say "heart attack!" - Say that you have taken 2 Aspirins. Take a seat on a chair or sofa near the front door, and wait for their arrival (especially if you live alone) and ...DO NOT LIE DOWN!

Posted by: Dr OyewoleOE

Menopause Diet

Definition
A menopause diet is a diet recommended for the special nutritional needs of women undergoing menopause and usually includes foods rich in **calcium** and **vitamin D**.

Origins
Between the ages of 45 and 55 women experience changes to their body that are associated with menopause, the time in a woman's life when her period stops. It is a normal change in a woman's body and menopause is considered reached when a woman has not had a period for 12 months in a row. It marks the permanent end of fertility. Leading up to menopause, a woman's ovaries stop producing eggs, and her body slowly starts making less and less of the hormones estrogen and progesterone. As the ovaries become less functional and produce less of these hormones, the body responds accordingly. The density of the bone also begins to decrease in women during the fourth decade of life. However, that normal decline in bone density is accelerated during menopause. As a consequence, both age and menopause act together to decrease bone mass and bone density (**osteoporosis**). As a result, women are between 2 and 7 times more likely than men to suffer a bone fracture, the risk increasing with age and after menopause. Another consequence of getting older is that the digestive system becomes less efficient and digestion takes longer. After menopause, women are also more vulnerable to heart disease. Weight increases also seem to coincide with menopause. They are not believed to result from menopause itself, but rather to result from a slower **metabolism** and decreased energy expenditures due to lower activity levels. All of these changes that happen to women during menopause lead to different nutritional needs and nutrition for the changing female body during those years is accordingly focused on recommending foods that benefit the bones and the heart, while controlling weight. Overall, the American Dietetic Association (ADA) recommends that older

Signs and symptoms of menopause
- Changes in periods (they may be shorter or longer, heavier or lighter, or have more or less time in between)
- Hot flashes
- Night sweats
- Trouble sleeping through the night
- Vaginal dryness
- Mood changes
- Hair loss or thinning on the head, more hair growth on the face

Although menopause itself is the time of a woman's last period, symptoms can begin several years before that in a stage called peri-menopause. Menopause and peri-menopause affect every woman differently. (Illustration by GGS Information Services/Thomson Gale.)
Women should have additional intake of nutrients such as calcium, **vitamins** D and B$_{12}$ while increasing consumption of dairy foods, especially skim or low-fat milk and yogurt, to help with these extra nutrient needs.

Description
There is a consensus among health practitioners that a healthy diet containing a wide variety of foods will be good for women's health and well-being during menopause. It is also considered a time to lower fat and increase fruit and vegetable intake to help maintain weight, and to ensure a daily intake of low-fat dairy products to keep bones strong. Women who suffer from specific menopausal symptoms should consult a physician for personal dietary advice. For most women, a menopause diet is considered healthy if it follows these guidelines:

- Increase calcium. The way to reduce the loss of calcium from the bones is primarily to increase the intake of calcium from food. The recommended daily allowance (RDA) for calcium is 1200mg/day for women over 50. Eating and drinking 2 to 4 servings of dairy products and calcium-rich foods a day will help ensure that a woman is getting enough calcium in the daily diet.

Calcium is found in dairy products, clams, sardines, broccoli and legumes.

- Increase iron intake. Eating at least 3 servings of iron-rich foods a day will help ensure that an adequate amount of iron is present in the daily diet. Iron is found in lean red meat, poultry, fish, eggs, leafy green vegetables, nuts and enriched grain products.
- Obtaining enough fiber. Foods high in fiber include whole-grain breads, cereals, pasta, rice, fresh fruits and vegetables.
- Eating fruits and vegetables. At least 2 to 4 servings of fruits and 3 to 5 servings of vegetables should be included in the daily diet.
- Include essential fatty acids (EFAs) in the diet. EFAs are found in nuts, seeds and oily fish. The best EFAs are those from the omega-3 and omega-6 families, which are found in pumpkin seeds, oily fish, walnuts, linseeds, dark green vegetables and oils such as sesame, walnut, soya and sunflower.
- Drinking plenty of water. At least eight 8-ounce glasses of water a day are recommended.
- Reducing high-fat foods. According to the National Academy of Sciences, the recommended daily calorie intake is 2,000 for women. Fat should provide 30% or less of this total. Saturated fat should be limited to less than 10% of the total daily calories because it raises blood cholesterol and increases the risk of heart disease. Saturated fat is found in fatty meats, whole milk, ice cream and cheese.
- Moderate use of sugar and salt. Too much sodium in the diet is linked to high blood pressure. Also, smoked, salt-cured and charbroiled foods contain high levels of nitrates, which have been linked to cancer.
- Limiting alcohol intake. Alcohol consumption should be limited to one or fewer drinks per day (3 to 5 drinks per week maximum) as alcohol can make hot flushes worse.

Since it has been shown that there is a direct relationship between the lack of estrogen after menopause and the development of osteoporosis, it is believed that the onset of osteoporosis can be delayed by taking supplements of calcium and vitamin D. The National Institute of Aging (NIA) recommends taking these two supplements if the diet cannot provide them in sufficient amounts. Consultation with a health practitioner is highly recommended as excessive intake may cause adverse effects.

- Calcium: Some sources recommend 1500mg/day for postmenopausal women not taking hormone replacement therapy. Maximum dose to avoid adverse effects (kidney problems) is 2000mg/day.
- Vitamin D: The RDA for vitamin D is 10mg/day for women aged 51-69 and 15p,g for women aged 70+. Vitamin D is present in fortified milk and cereals, salmon, cod liver oil, and other foods. Vitamin D deficiency is not uncommon in the elderly and those with little sun exposure. Maximum recommended is 50(j,g to avoid vitamin D toxicity.

In some cases, a physician may also recommend Vitamin B_{12} and folic acid supplements. The RDA for vitamin B_{12} is 2.4µday for women. Vitamin B_{12} is present in liver, kidney, fish, poultry, eggs and milk, and in B_{12}-fortified foods. The RDA for folic acid is 180(j,g/day for women. It is found in juices spinach, asparagus, and green leafy vegetables.

Function
A menopause diet is a nutritious diet designed not only to minimize all the additional medical health risks of menopause and general aging, but also to lower both physical and mental symptoms of menopausal life. These commonly include hot flashes and skin flushing, night sweats, insomnia and mood swings and irritability.

Benefits
Precautions
Supplements and prescription drugs have a lot in common. Both are used in an attempt to improve health. But "natural" remedies marketed as "dietary" supplements

unfortunately do not have a Patient Package Insert, the document, required by the U.S. Food and Drug Administration (FDA) for all marketed prescription medications, that provides vital information on how to take a drug safely, identify its negative side effects, and avoid potentially dangerous interactions with other drugs. Before considering nutritional supplements for menopause, it is advised to proceed with caution and consult a healthcare provider prior to using any supplement.

In their 40s and 50s, women often gain weight, and they sometimes attribute this gain to menopause. Midlife weight gain appears to be mostly related to aging and lifestyle, but menopause also contributes to the problem. In general, fewer calories are needed after midlife because less energy is expended. Whether weight gain is linked to menopause itself and/or age, the available studies show that weight gain around menopause years can be prevented by exercise and diet, by minimizing fat gain and maintaining muscle, thus reducing body size and burning more calories.

Risks

Nowadays, numerous menopause diets and supplements including mega vitamin supplements and medicinal creams are commercially advertised as the cure-all for menopause and its symptoms. While some may contribute to feeling good, there is a risk of adverse side effects associated with supplements taken above recommended level and a lot of uncertainty concerning their interactions with medications and hormone replacement therapy. This is why following a simple, well-balanced diet is presently considered the best way to reduce menopause symptoms and chances of developing some of the complications that go along with menopause, the two most serious being accelerated osteoporosis and heart disease. The advantage of following a varied diet that includes calcium and vitamin D is that there are no risks associated with it, provided that the general health of a woman is good.

Research and general acceptance

There is broad consensus among women's health practitioners that a healthy diet combined with regular

QUESTIONS TO ASK YOUR DOCTOR

- How will my body change with menopause?
- What kinds of dietary adjustments should I make?
- Can you recommend a menopause diet?
- Are there any specific foods that I should avoid?
- Is it safe to take dietary supplements to help my menopause symptoms?
- I'm finding it harder to lose weight now that I'm older. Does it have anything to do with menopause?
- As I go past menopause, how can my diet help me achieve the best possible health?
- I suffer from hot flashes at night that keep me from sleeping. Are there any dietary approaches that can help me have a good night's sleep?
- Are there certain foods that you could suggest to help with menopause symptoms?
- What foods are recommended to slow down osteoporosis?
- I really dislike dairy products. Is there a way to obtain calcium in other foods or as supplements?
- I use hormone replacement therapy. Should I have a special diet?

Physical exercise really does make a difference to alleviate the symptoms and side-effects of menopause.

Calcium and vitamin D supplements in healthy postmenopausal women have been shown to provide a modest benefit in preserving bone mass and prevent hip fractures in certain groups including older women but do not prevent other types of fractures or color-ectal **cancer**, according to the results of a major clinical trial, part of the Women's Health Initiative (WHI). While generally well tolerated, the supplements are associated with an increased risk of kidney stones.

Many women also believe that **soy** foods and the phytoestrogens they contain can alleviate menopausal symptoms but research has shown that their benefits are mild if they occur at all. When phytoestrogens act as estrogens, they are much weaker than the estrogen produced in humans. Published studies mostly indicate that increased

consumption of phytoestrogens (soy, linseed) by postmenopausal women is no more effective than placebo (wheat diet) for reducing hot flushes. Despite conflicting study results, evidence strongly suggests that soy can help reduce total and LDL cholesterol levels.

Agencies as diverse as the American Dietetic Association (ADA), the American College of Obstetricians and Gynecologists (ACOG), the American Academy of Family Physicians (AAFP) and the U.S. Food and Drug Administration (FDA) have issued findings on the following supplements and nutrients in the context of menopause:

- Glucosamine. Current evidence suggests that a potential benefit exists with little risk, even at doses of 1,500 mg/day in nondiabetic, nonpregnant women. The product should not be used by those at risk

Prostate Cancer Kills, Dear Men Stop Eating These Four Foods in Excess to Avoid Being a Victim

Studies have shown that the primary cause of death in males is prostate disease. Even though it may seem tough, it is really disappointing that so many people fail to notice the obvious signs of prostate disease. When people mistakenly believe they have a different condition, they contact their local pharmacy and begin treating the side effects or a completely unrelated illness that has nothing to do with the hidden problem. The University of California at San Francisco Medical Center suggests that you may be able to prevent prostate cancer or slow the progression of it by maintaining certain diets.

The following food selections could increase your risk of developing prostate disease:

1. Consuming large amounts of dairy products may increase your risk of developing prostate cancer. According to research published in the Journal of Nutrition, drinking whole milk may increase the risk of progression to fatal prostate cancer. Skim and low-fat milks also increase the risk of low-grade stages of the disease. Try to limit dairy consumption. At the very least, stick to fat-free and low-fat varieties, as they can be healthier for your prostate.

Aim to eat less of these foods:
- whole milk
- full fat cheeses
- full fat yogurts
- full fat butter
- full fat cream cheese
- full fat ice cream

2. Large amounts of alcohol consumption may put you at higher risk of developing prostate cancer. Researchers, using data from more than 10,000 men participating in the Prostate Cancer Prevention, uncovered that heavy alcohol drinkers were twice as likely to be diagnosed with advanced prostate cancer as moderate drinkers. Heavy drinkers are defined as those who consume more than two bottles/drinks a day or more than 10 drinks a week.

3. A diet high in meat, particularly if it's cooked well-done, may be associated with an increased risk of developing prostate cancer. This may be due to heterocyclic amines (HCAs). These are carcinogens found in cooked meat. HCAs have been linked to the development of several cancers.

    HCAs are compounds formed during high temperature cooking such as broiling or grilling. The World Health Organization suggests that both red and processed meats may be associated with increased risk of developing prostate cancer. Pork, hamburger or cow, sheep wieners and franks are instances of red meats that have been overcooked.
    This food is especially significant in the improvement of prostate disease in hereditarily helpless men, or at least, men with a family background of prostate malignant growth.

4. Saturated fats have been linked to heart disease, but their association with prostate cancer is still a tentative. Some studies have found a link between saturated fat intake and risk for advanced prostate cancer, but not all studies have confirmed these findings. While more studies are needed, reducing your intake of saturated fats may benefit your prostate and your overall health, since it creates more room for fiber and nutrient-dense plants.

Posted by: Oyewole OE

What are haemorrhoids?

A precise definition of haemorrhoids does not exist, but they can be described as masses or clumps ("cushions") of tissue within the anal canal that contain blood vessels and the surrounding, supporting tissue made up of muscle and elastic fibres. The anal canal is the last four centimetres through which stool passes as it goes from the rectum to the outside world. The anus is the opening of the anal canal to the outside world.

Although most people think haemorrhoids are abnormal, they are present in everyone. It is only when the haemorrhoidal cushions enlarge that haemorrhoids can cause problems and be considered abnormal or a disease.

Prevalence of haemorrhoids

Although haemorrhoids occur in everyone, they become large and cause problems in only 4% of the general population. Haemorrhoids that cause problems are found equally in men and women, and their prevalence peaks between 45 and 65 years of age.

Anatomy of haemorrhoids

The arteries supplying blood to the anal canal descend into the canal from the rectum above and form a rich network of arteries that communicate with each other around the anal canal. Because of this rich network of arteries, haemorrhoidal blood vessels have a ready supply of arterial blood. This explains why bleeding from haemorrhoids is bright red (arterial blood) rather than dark red (venous blood), and why bleeding from haemorrhoids occasionally can be severe. The blood vessels that supply the haemorrhoidal vessels pass through the supporting tissue of the haemorrhoidal cushions.

The anal veins drain blood away from the anal canal and the haemorrhoids. These veins drain in two directions. The first direction is upwards into the rectum, and the second is downwards beneath the skin surrounding the anus. The dentate line is a line within the anal canal that denotes the transition from anal skin (anoderm) to the lining of the rectum.

Formation of haemorrhoids

If the haemorrhoid originates at the top (rectal side) of the anal canal, it is referred to as an **internal haemorrhoid**. If it originates at the lower end of the anal canal near the anus, it is referred to as an **external haemorrhoid**. Technically, the differentiation between internal and external haemorrhoids is made on the basis of whether the haemorrhoid originates above or below the dentate line (internal and external, respectively).

As discussed previously, haemorrhoidal cushions in the upper anal canal are made up of blood vessels and their supporting tissues. There usually are three major haemorrhoidal cushions oriented right posterior, right anterior, and left lateral. During the formation of enlarged internal haemorrhoids, the vessels of the anal cushions swell and the supporting tissues increase in size. The bulging mass of tissue and blood vessels protrudes into the anal canal where it can cause problems. Unlike with internal haemorrhoids, it is not clear how external haemorrhoids form.

It is not known why haemorrhoids enlarge. There are several theories about the cause, including inadequate intake of fibre, prolonged sitting on the toilet, and chronic straining to have a bowel movement (constipation). None of these theories has strong experimental support. Pregnancy is a clear cause of enlarged haemorrhoids though, again, the reason is not clear. Tumors in the pelvis also cause enlargement of haemorrhoids by pressing on veins draining upwards from the anal canal.

One theory proposes that it is the shearing (pulling) force of stool, particularly hard stool, passing through the anal canal that drags the haemorrhoidal cushions downward. Another theory suggests that with age or an aggravating condition, the supporting tissue that is responsible for anchoring the haemorrhoids to the underlying muscle of the anal canal deteriorates. With time, the haemorrhoidal tissue loses its mooring and slides down into the anal canal.

One physiological fact that is known about enlarged haemorrhoids that may be relevant to understanding why they form is that the pressure is elevated in the anal sphincter, the muscle that surrounds the anal canal and the haemorrhoids. The anal sphincter is the muscle that allows us to control our bowel movements. It is not known, however, if this elevated pressure precedes the development of enlarged haemorrhoids or is the result of the haemorrhoids. Perhaps during bowel movements, increased force is required to force stool through the tighter sphincter. The increased shearing force applied to the haemorrhoids by the passing stool may drag the haemorrhoids downward and enlarge them.

As the anal cushion of an internal haemorrhoid continues to enlarge, it bulges into the anal canal. It may even pull down a portion of the lining of the rectum above, lose its normal anchoring, and protrude from the anus. This condition is referred to as a **prolapsing internal haemorrhoid**. In the anal canal, the haemorrhoid is exposed to the trauma of passing stool, particularly hard stools associated with constipation. The trauma can cause bleeding and sometimes pain when stool passes. The rectal lining that has been pulled down secretes mucus and moistens the anus and the surrounding skin. Stool also can leak onto the anal skin. The presence of stool and constant moisture can lead to anal itchiness (pruritus ani), though itchiness is not a common symptom of haemorrhoids. The prolapsing haemorrhoid usually returns into the anal canal or rectum on its own or can be pushed back inside with a finger, but it prolapses again with the next bowel movement.

Less commonly, the haemorrhoid protrudes from the anus and cannot be pushed back inside, a condition referred to as **incarceration of the haemorrhoid**. Incarcerated haemorrhoids can have their supply of blood shut off by the squeezing pressure of the anal sphincter, and the blood vessels and cushions can die, a condition referred to as gangrene. Gangrene requires medical treatment.

For convenience in describing the severity of internal haemorrhoids, many physicians use a grading system:

- **First-degree haemorrhoids:** Haemorrhoids that bleed but do not prolapse.
- **Second-degree haemorrhoids:** Haemorrhoids that prolapse and retract on their own (with or without bleeding).
- **Third-degree haemorrhoids:** Haemorrhoids that prolapse but must be pushed back in by a finger.
- **Fourth-degree haemorrhoids:** Haemorrhoids that prolapse and cannot be pushed back in. Fourth-degree haemorrhoids also include haemorrhoids that are thrombosed (containing blood clots) or that pull much of the lining of the rectum through the anus.

In general, the symptoms of external haemorrhoids are different than the symptoms of internal haemorrhoids.
External haemorrhoids can be felt as bulges at the anus, but they usually cause few of the symptoms that are typical of internal haemorrhoids. This is perhaps, because they are low in the anal canal and have little effect on the function of the anus, particularly the anal sphincter. External haemorrhoids can cause problems, however, when blood clots inside them. This is referred to as thrombosis. Thrombosis of an external haemorrhoid causes an anal lump that is very painful (because the area is supplied by somatic nerves) and often requires medical attention. The thrombosed haemorrhoid may heal with scarring and leave a tag of skin protruding from the anus. Occasionally, the tag is large, which can make anal hygiene (cleaning) difficult or irritate the anus.
Most individuals who have haemorrhoids discover them in one of several ways. They either feel the lump of an external hemorrhoid when they wipe themselves after a bowel movement, note drops of blood in the toilet bowl or on the toilet paper, or feel a prolapsing haemorrhoid (protruding from the anus) after bowel movements. Severe anal pain may occur when an external haemorrhoid thromboses or a prolapsing internal haemorrhoid becomes gangrenous.

Symptoms of anal discomfort and itching may occur, but anal conditions other than haemorrhoids are more likely to cause these symptoms than haemorrhoids. (Haemorrhoids often get a "bum rap" for such symptoms since both haemorrhoids and other anal conditions are common and may occur together. For example, up to 20% of individuals with haemorrhoids also have anal fissures.)

By the history of symptoms, the physician can suspect that haemorrhoids are present. Although the physician should try his or her best to identify the hemorrhoids, it is perhaps more important to exclude other causes of hemorrhoid-like symptoms that require different treatment. These other causes - anal fissures, fistulae, perianal (around the anus) skin diseases, infections, and tumors - can be diagnosed on the basis of a careful examination of the anus and anal canal. If necessary, scrapings of the anus to diagnose infections and biopsies of the perianal skin to diagnose skin diseases can be done.

External hemorrhoids appear as a bump and/or dark area surrounding the anus. If the lump is tender, it suggests that the hemorrhoid is thrombosed. Any lump needs to be carefully followed, however, and should not be assumed to be a hemorrhoid since there are rare cancers of the perianal area that may masquerade as external hemorrhoids.

The diagnosis of an **internal hemorrhoid** is easy if the hemorrhoid protrudes from the anus. Although a rectal examination with a gloved finger may uncover an internal hemorrhoid high in the anal canal, the rectal examination is more helpful in excluding rare cancers that begin in the anal canal and adjacent rectum. A more thorough examination for internal hemorrhoids is done visually using an anoscope. An anoscope is a three-inch long, tapering, metal or clear plastic hollow tube approximately one inch in diameter at its viewing end. The anoscope is lubricated and inserted into the anus, through the anal canal, and into the rectum. As the anoscope is withdrawn, the area of the internal hemorrhoid(s) is well seen.

Straining by the patient, as if they are having a bowel movement, may make the hemorrhoid(s) more prominent. Anoscopy also is a good way for diagnosing anal fissures.

At times, indirect anoscopy may be helpful. Indirect anoscopy uses a special mirror for visualizing a patient's anus while the patient is seated and straining on a toilet. Indirect anoscopy allows the doctor to see the effects of gravity and straining on the anus. For example, the physician may be able to determine if what is prolapsing is a hemorrhoid, rectal lining, a rectal polyp, or the rectum itself (a condition called procidentia in which the rectum turns inside out and protrudes from the anus).

Whether or not hemorrhoids are found, if there has been bleeding, the colon above the rectum needs to be examined to exclude important causes of bleeding other than hemorrhoids. Other causes include, for example, colon cancer, polyps, and colitis (inflammation of the rectum and/or colon). This examination can be accomplished by either flexible sigmoidoscopy or colonoscopy, procedures that allow the doctor to examine approximately one-third or the entire colon, respectively.

What is the treatment for hemorrhoids?
Hemorrhoids are treated with a variety of measures including over-the-counter medicine (creams, lotions, gels, pads, wipes, etc.), procedures (sclerotherapy, rubber band ligation, etc.), and surgery.

Diet
It is believed generally that constipation and straining to have bowel movements promote hemorrhoids and that hard stools can traumatize existing hemorrhoids. It is recommended, therefore, that individuals with hemorrhoids soften their stools by increasing the fiber in their diets. Fiber is found in numerous foodstuffs including fresh and dried fruits, vegetables, grains, and cereals. Generally 20-30 grams per day of fiber are recommended whereas the average American diet contains less than 15 grams of fiber. Supplemental fiber (psyllium, methylcellulose, or calcium polycarbophil)

also may be used to increase the intake of fiber. Stool softeners and increased drinking of liquids also may be recommended. Nevertheless, there is no strong, scientific support for the benefits of fiber, liquids, or stool softeners.

Diarrhea is believed to aggravate the symptoms of hemorrhoids and it is recommended that diarrhea be controlled with fiber and anti-motility drugs.

Over-the-counter medications for hemorrhoids

Many over-the-counter products are sold for the treatment of hemorrhoids. These often contain the same drugs that are used for treating anal symptoms such as itching or discomfort. There are few studies showing that they do anything for hemorrhoids. They probably only reduce the symptoms of hemorrhoids. It is possible, however, that their effectiveness relates to their treatment of anal conditions other than hemorrhoids, for example, idiopathic anal itching, that often accompany hemorrhoids.

Products used for the treatment of hemorrhoids are available as ointments, creams, gels, suppositories, foams, and pads. Ointments, creams, and gels - when used around the anus - should be applied as a thin covering. When applied to the anal canal, these products should be inserted with a finger or a "pile pipe." Pile pipes are most efficient when they have holes on the sides as well as at the end. Pile pipes should be lubricated with ointment prior to insertion. Suppositories or foams do not have advantages over ointments, creams, and gels.

Most products contain more than one type of active ingredient. Almost all contain a protectant in addition to another ingredient. Only examples of brand-name products containing one ingredient in addition to the protectant are discussed below.

Local anesthetics: Local anesthetics temporarily relieve pain, burning, and itching by numbing the nerve endings. The use of these products should be limited to the perianal area and lower anal canal. Local anesthetics can cause allergic reactions with burning and itching; therefore, if burning and itching increase with the application of anesthetics, they should be discontinued. Local anesthetics include:

- Benzocaine 5% to 20% (Americaine Hemorrhoidal, Lanacane Maximum Strength, Medicone)
- Benzyl alcohol 5% to 20%
- Dibucaine 0.25% to 1.0% (Nupercainal)
- Dyclonine 0.5% to 1.0%
- Lidocaine 2% to 5%
- Pramoxine 1.0% (Fleet Pain-Relief, Procto Foam Non-steroid, Tronothane Hydrochloride)
- Tetracaine 0.5% to 5.0%

Vasoconstrictors: Vasoconstrictors are chemicals that resemble epinephrine, a naturally occurring chemical. Applied to the anus, vasoconstrictors make the blood vessels become smaller, which may reduce swelling. They also may reduce pain and itching due to their mild anesthetic effect. Vasoconstrictors applied to the perianal area - unlike vasoconstrictors that are taken orally or by injection - have a low likelihood of causing serious side effects, such as high blood pressure, nervousness, tremor, sleeplessness, and aggravation of diabetes or hyperthyroidism.

Vasoconstrictors include:

- Ephedrine sulfate 0.1% to 1.25%
- Epinephrine 0.005% to 0.01%
- Phenylephrine 0.25% (Medicone Suppository, Preparation H, Rectacaine)

Protectants: Protectants prevent irritation of the perianal area by forming a physical barrier on the skin that prevents contact of the irritated skin with aggravating liquid or stool from the rectum. This barrier reduces irritation, itching, pain, and burning. There are many products that are themselves protectants or that contain a protectant in addition to other medications. Protectants include:

- Aluminum hydroxide gel
- Cocoa butter
- Glycerin
- Kaolin
- Lanolin
- Mineral oil (Balneol)
- White petrolatum
- Starch
- Zinc oxide or calamine (which contains

zinc oxide) in concentrations of up to 25% Cod liver oil

- or shark liver oil if the amount of vitamin A is 10,000 USP units/day.

Astringents: Astringents cause coagulation (clumping) of proteins in the cells of the perianal skin or the lining of the anal canal. This action promotes dryness of the skin, which in turn helps relieve burning, itching, and pain.
Astringents include:
- Calamine 5% to 25%
- Zinc oxide 5% to 25% (Calmol 4, Nupercainal, Tronolane)
- Witch hazel 10% to 50% (Fleet Medicated, Tucks, Witch Hazel Hemorrhoidal Pads)

Antiseptics: Antiseptics inhibit the growth of bacteria and other organisms. However, it is unclear whether antiseptics are any more effective than soap and water.
Examples of antiseptics include:
- Boric acid
- Hydrastis
- Phenol
- Benzalkonium chloride
- Cetylpyridinium chloride
- Benzethonium chloride
- Resorcinol

Keratolytics: Keratolytics are chemicals that cause the outer layers of skin or other tissues to disintegrate. The rationale for their use is that the disintegration allows medications that are applied to the anus and perianal area to penetrate into the deeper tissues.
The two approved keratolytics used are:
- Aluminum chlorhydroxy allantoinate (alcloxa) 0.2% to 2.0%
- Resorcinol 1% to 3%

Analgesics: Analgesic products, like anesthetic products, relieve pain, itching, and burning by depressing receptors on pain nerves.
Examples of analgesics include:
- Menthol 0.1% to 1.0% (greater than 1.0% is not recommended)
- Camphor 0.1% to 3% (greater than

3% is not recommended)
- Juniper tar 1% to 5%

Corticosteroids: Corticosteroids reduce inflammation and can relieve itching, but their chronic use can cause permanent damage to the skin. They should not be used for more than short periods of a few days to two weeks. Only products with weak corticosteroid effects are available over-the-counter. Stronger corticosteroid products that are available by prescription should not be used for treating hemorrhoids.

Surgery
The vast majority of patients with symptom-causing hemorrhoids are able to be managed with non-surgical techniques. In the practice of a surgeon adept at managing hemorrhoids non-operatively, it is estimated that less than 10% of patients require surgery if the hemorrhoids are treated early.

Dilation: Forceful dilation of the anal sphincter by stretching the anal canal has been used to weaken the anal sphincter, the assumption being that the increased sphincter pressure is responsible for the hemorrhoids. Unfortunately, the dilation frequently damages the sphincter itself and many patients become incontinent or unable to control their stool after dilation. For this reason, dilation is rarely used to treat hemorrhoids.

Doppler ligation: Recently, the use of a special, illuminated anoscope with a Doppler probe that measures blood flow has enabled doctors to identify the individual artery that fills the hemorrhoidal vessels. The doctor then can tie off (ligate) the artery. This causes the hemorrhoid to shrink. The Doppler probe is expensive, and seems may offer little advantage over rubber band ligation.

Sphincterotomy: Occasionally, the internal portion of the anal sphincter is partially cut in an attempt to reduce the pressure of the sphincter within the anal canal. This procedure is rarely used alone, and there is concern about incontinence (loss of control) of stool as a potential complication.

Hemorrhoidectomy: Non-operative treatment is preferred because it is associated with less pain and fewer complications than operative treatment. Surgical removal of hemorrhoids (hemorrhoidectomy) usually is reserved for patients with third- or fourth-degree hemorrhoids.

During hemorrhoidectomy, the internal hemorrhoids and external hemorrhoids are cut out. The wounds left by the removal may be sutured (stitched) together (closed technique) or left open (open technique). The results with both techniques are similar. At times, a proctoplasty also is done. A proctoplasty extends the removal of tissue higher into the anal canal so that redundant or prolapsing anal lining also is removed.

Postsurgical pain is a major problem with hemorrhoidectomy. Potent pain medications (narcotics) usually are required. The addition of nonsteroidal antiinflammatory drugs (NSAIDs) such as ketorolac (Toradol), celecoxib (Celebrex), valdecoxib (Bextra) enhances the relief of pain, yet patients still do not return to work for 2-4 weeks.

Several other complications may occur following hemorrhoidectomy. Urinary retention (difficulty urinating) occurs in about 5% of patients. Although retention almost always is transient, it may require catheterization (insertion of a tube) to empty the bladder. Delayed bleeding or hemorrhage 7 to 14 days after surgery occurs in 1%-2% of patients. Narrowing of the anus due to scarring, formation of fissures, and infection (1% of patients) also may occur. Incontinence of stool (inability to control the passage of stool) is uncommon unless the anal sphincter is damaged. Finally, blood clots may form in external hemorrhoids following surgery if they are not removed.

Stapled hemorrhoidectomy: This is the newest surgical technique for treating hemorrhoids, and it has rapidly become the treatment of choice for third-degree hemorrhoids. Stapled hemorrhoidectomy is a misnomer since the surgery does not remove the hemorrhoids but, rather, the abnormally lax and expanded hemorrhoidal supporting tissue that has allowed the hemorrhoids to prolapse downward.

For stapled hemorrhoidectomy, a circular, hollow tube is inserted into the anal canal. Through this tube, a suture (a long thread) is placed, actually woven, circumferentially within the anal canal above the internal hemorrhoids. The ends of the suture are brought out of the anus through the hollow tube. The stapler (a disposable instrument with a circular stapling device at the end) is placed through the first hollow tube and the ends of the suture are pulled. Pulling the suture pulls the expanded hemorrhoidal supporting tissue into the jaws of the stapler. The hemorrhoidal cushions are pulled back up into their normal position within the anal canal. The stapler then is fired. When it fires, the stapler cuts off the circumferential ring of expanded hemorrhoidal tissue trapped within the stapler and at the same time staples together the upper and lower edges of the cut tissue.

Stapled hemorrhoidectomy, although it can be used to treat second degree hemorrhoids, usually is reserved for higher grades of hemorrhoids - third and fourth degree. If in addition to internal hemorrhoids there are small external hemorrhoids that are causing a problem, the external hemorrhoids may become less problematic after the stapled hemorrhoidectomy. Another alternative is to do a stapled hemorrhoidectomy and a simple excision of the external hemorrhoids. If the external hemorrhoids are large, a standard surgical hemorrhoidectomy may need to be done to remove both the internal and external hemorrhoids.

How to Answer "Tell Me About Yourself" Poser in an Interview

Some of us have faced this encounter before in the course of looking for jobs; appearing smartly dressed, all nervous and sweaty, seated in front of the people who will determine whether you will get the job or not. After a friendly greeting, the interview begins and they ask you to tell them about yourself. Suddenly, your tongue becomes heavy, your mouth too dry, and for some reason, you forget who you really are.

"Tell me about yourself" is often the first question asked in job interviews, and it can be a tricky one to answer. While the question may seem simple and straightforward, it can be difficult to know what to say without sounding either boastful or unprepared.

However, with a bit of preparation and practice, you can provide a strong and memorable response to this question and wow the interviewers.

The following tips will help you craft a compelling answer to "Tell me about yourself":

Keep It Brief
The interviewer does not want to know about your life story, so keep your response concise and to the point. A good rule of thumb is to give your answer in no more than two minutes.

You can start with a brief overview of what you currently do and some of your recent big achievements. Next, you can talk about your past experiences that are relevant to the job you are applying for and finally talk about what you hope to accomplish in your career in future.

Tailor Your Answer To Match The Job You Are Applying For
When answering "Tell me about yourself," focus on highlighting your relevant work experience and skills. Think about what makes you unique and how your experience aligns with the requirements of the position you're interviewing for. For example, if you're interviewing for a sales representative, talk about your experience in sales, such as your ability to create a winning sales pitch as well as some of the sales goals you were able to meet in your previous post.

Avoid Sharing Personal Information
While mentioning a few personal details, such as hobbies or interests, is okay, it is important to avoid oversharing personal information.

Try to stick to professional information that is relevant to the job you're applying for unless, of course, the interviewer asks specific questions about your personal life.

Don't Ramble
A common mistake that many interviewees often commit when asked to talk about themselves is talking at length in an inconsequential way, also known as rambling.

Try to relax and compose yourself before the interview begins so that you don't find yourself rambling on and sounding unprepared. Additionally, avoid cramming your responses before the interview and let your answers flow naturally like a conversation style.

Practise Your Response
Another way to ace the "tell me about yourself" question is to practise ahead of the interview, so you feel confident when it comes to answering the question in the interview.
You can practise in front of a mirror, a video recording, or with a friend if you are confident enough. Don't forget to time yourself to make sure you're keeping your answer brief.

Be Positive
When talking about yourself to the interviewer, be positive and enthusiastic. Talk about your achievements and successes, and show your passion for your work. Since this is the first impression you will make on the interviewer, make sure you portray yourself in the best light. This will help you to stand out from other candidates and possibly convince the interviewer that you are the best fit for their company.

Sample Response
Here is a sample answer to the question, "tell me about yourself" for someone applying for a job in Health Oriented Non-governmental Organisation.
"Sure. My name is Anne, and I have been working part-time as a Medical Sales Representative in a Healthy Lifestyle Outfit for the past two years. I graduated from XYZ University with a degree in Basic Medical Sciences. In my current role as a Medical Sales Representative, I have gained expertise in Preventive Health Communication and report writing and presentation of field reports, periodically. I look forward, as I am excited to use my skills and experience to contribute to the success of your organisation."

Adapted and posted by: OyewoleOE

Instructions to the Contributors Willing to Publish Manuscripts, Reviews, Letter to the Editors, etc. in JIDiN

JIDiN will publish articles reviewed by members of the Editorial Team and other invited experienced editors. Individual author(s) is/are invited to submit manuscript(s), which must follow the set guidelines and will be evaluated as presented below:

The manuscripts submitted to *JIDiN* must be unpublished and authored by the person(s) submitting them. The manuscripts must clearly identify the source of every item that is not original (e.g. text excerpts, illustrations, tables, etc.), and make explicit reference, whenever necessary. In the latter case, if the manuscript includes items protected by intellectual property rights, author(s) will be responsible for obtaining permission from the copyright holders.

Submission of manuscripts to *JIDiN* is a certification by the author(s) that the manuscript has not been otherwise published (in print or digital format, in Nigeria or abroad, in English or any other language), or submitted at the same time for any other type(s) of publication. Although, *JIDiN* editorial policy is to publish original manuscripts, the Executive Editorial Board may decide in exceptional cases to publish a previously published text, based on criteria of scholarly and intellectual relevance and opportuneness. In that case, the manuscript will only be published with an authorization from the owner(s) of the intellectual property rights.

Manuscripts should be submitted in English for it to be published. Quality writing and absolute clarity of tenses and illustrations are essential requirements for acceptance of manuscripts for publication.

Guidelines for the Manuscript's Layout

i. Title of the Manuscript, Name(s) of the Author(s) (First name, Surname and initial), the Affiliated Institution of Author(s), E-mail Address of the Corresponding Author

ii. State the Contribution(s) of the Author(s) as stated below:

A. Author of the concept and objectives of paper
B. collection of data
C. implementation of research
D. elaborate, analysis and interpretation of data
E. statistical analysis
F. preparation of a manuscript
G. working out the literature
H. obtaining funds

Example: If there are two authors, the contributions in the manuscript should be presented thus: Oyediran Oyewole E.[A,C,D,F,H] and Mustapha Adekunle A.[B,E,G] The superscripts provide information on the contribution of the authors.

iii. Abstract (maximum of 250 words in one block paragraph)
iv. Introduction/Problem Statement and Justification
vi. Methodology
vii. Results with Tables, Charts, Pictures and Graphs
viii. Discussion and Conclusion
ix. Recommendations
x. References (APA Style. *See the example below*)

Review and decision process

The Executive Editorial Board reserves the right to publish or reject submitted manuscripts, and informs the lead/corresponding author of its decision within a reasonable time frame. This decision is supported by an evaluation of the manuscripts based on a peer-review system, carried out in two consecutive stages, which include:

a) Initial assessment will be done by the Executive Editorial Board, which decides on the manuscript's suitability for the journal. This stage will consider criteria of relevance e.g. the layout, focus and quality, defined according to the journal's editorial policy as decided by the

board, as well as the manuscript's conformity to the submission guidelines. All manuscripts that conform to these initial instructions will be considered and certified to move to the next stage of assessment.

b) Detailed evaluation of the selected manuscripts will be conducted by 2 anonymous reviewers through a double-blind peer review system. Reviewers' assessment and comments resulting from this process will be used as a basis for the final decision on the manuscript's acceptance for publication.

The Executive Editorial Board may suggest revisions to author(s), according to the recommendations made by the reviewers, and ask for a new evaluation of the revised paper in order to make the final decision on its acceptance for publication.

In the case of manuscripts submitted to the second stage of evaluation, if they are not accepted for publication, *JIDiN* Editorial Board will inform the authors of the reasons for this decision, generally attaching the reviewers' comments and sending them to the authors.

NOTE: Authors are fully responsible for the processes involved in publishing their manuscripts.

Letters to the Editor, Short reviews, reviews and review essays of books and websites

In addition to manuscripts, *JIDiN* also publishes letters to the editor, short reviews, reviews and review essays of books that are relevant to the focus of *this journal*. The contributions to this section of the Journal must conform to the formats described below.

Letters to the editor: Must not be more than 1,000 words; contains no more than one illustration and no more than five references.

Review essays

Review essays should be written in English and texts must not exceed 20,000 characters with spaces and must include:

a) Full references of the discussed submission

b) In-depth discussion of the state of the art regarding the issue(s) involved, clearly addressing the relevance and contribution of each submission to furthering the debate on those issues.

c) Personal contribution of the review essay to the elucidation of the issues involved and providing alternative ways of understanding them, etc.

Website reviews

Website reviews will be published in the journal section entitled "Virtual space". This considers critical presentations from websites with contents that are relevant to the understanding or discussion of a particular research field in Dietetics and Nutrition. Texts should be written only in British English language and must not exceed 10,000 characters with spaces and must present the website in question if possible. The website reviews should highlight its theme, usefulness, novelty and relevance from Dietetics/Nutrition critical perspectives, including its merits and/or shortcomings.

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Manuscripts should be submitted in Word file format and sent by email to: **jidineditor@gmail.com**. Texts should have no extra spaces between paragraphs, headers, or any other special formatting. Authors should explicitly acknowledge that they have read and accepted the journal's "guidelines for submission and publication of manuscripts" by simply reproducing the text below and filling in the missing data:

I, _____, author of the manuscript titled: _____, declare that:
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In the case of co-authored manuscripts, one of the authors must state that s/he is authorized by the other co-authors to act as their representative in all contacts with JIDiN Executive Editorial Board. He/she must also state, on behalf of all the authors, that they have read and accepted the journal's "guidelines for publication", reproducing the following manuscript:

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