http://dx.doi.org/10.18623/rvd.v23.6668

ANALYSIS OF ADULT DIETARY HABITS AND NUTRITIONAL WELL-BEING IN UMUAHIA METROPOLIS: IMPLICATIONS FOR EDUCATIONAL PRACTICE, COMMUNITY HEALTH, EDUCATIONAL MANAGEMENT, AND COUNSELLING SERVICES

ANÁLISE DOS HÁBITOS ALIMENTARES E DO BEM-ESTAR NUTRICIONAL DE ADULTOS NA MÉTROPOLIS DE UMAHIA: IMPLICAÇÕES PARA A PRÁTICA EDUCACIONAL, A SAÚDE COMUNITÁRIA, A GESTÃO EDUCACIONAL E OS SERVIÇOS DE ACONSELHAMENTO

Article received on: 1/16/2026
Article accepted on: 4/15/2026

Onwumere Michael*
*Alex Ekwueme Federal University, Ndufu-Alike Ikwo, Ebonyi State, Nigeria
Orcid: https://orcid.org/0000-0003-4984-3642
onwumeremichael@gmail.com

Modebelu N. Melody**
**Faculty of Science Education, Buse, Zambia
Orcid: https://orcid.org/0000-0002-5519-2973
modebelumelody@gmail.com

Nkiru Edith Obande-Ognuinya*
*Alex Ekwueme Federal University, Ndufu-Alike Ikwo, Ebonyi State, Nigeria
nkeiruedithobande@gmail.com

David Onyemaechi Ekeh***
***Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria
davidonyemaechiekeh@gmail.com

Kelechi Chinemerem Mezieobi*
*Alex Ekwueme Federal University, Ndufu-Alike Ikwo, Ebonyi State, Nigeria
kelechichinemerem@gmail.com

Peter Okwoeze Omogo*
*Alex Ekwueme Federal University, Ndufu-Alike Ikwo, Ebonyi State, Nigeria
peterokwoeze@gmail.com

Mpamugo Onyebuchi Vitalis*
*Alex Ekwueme Federal University, Ndufu-Alike Ikwo, Ebonyi State, Nigeria
mpamugoonyebuchivitalis@gmail.com

Uchendu Ijeoma A.***
***Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria
uchenduijeoma@gmail.com

Ojemuyide Chidiebere C.*
*Alex Ekwueme Federal University, Ndufu-Alike Ikwo, Ebonyi State, Nigeria
ojemuyidechidiebere@gmail.com

Alo Chinyere Ada*
*Alex Ekwueme Federal University, Ndufu-Alike Ikwo, Ebonyi State, Nigeria
alochinyereada@gmail.com

Edwin Idenyi Otozi*
*Alex Ekwueme Federal University, Ndufu-Alike Ikwo, Ebonyi State, Nigeria
edwinidenyiotozi@gmail.com

Ngele Cletus Ezeoke*
*Alex Ekwueme Federal University, Ndufu-Alike Ikwo, Ebonyi State, Nigeria
chidiebereduru@gmail.com

Olubukola Abosede Foyewa*
*Alex Ekwueme Federal University, Ndufu-Alike Ikwo, Ebonyi State, Nigeria
olubukolaabosedefoyewa@gmail.com

Onwusi Clara Amoge*
*Alex Ekwueme Federal University, Ndufu-Alike Ikwo, Ebonyi State, Nigeria
onwusiclaraamoge@gmail.com

Ngozi Theresa Nwudu*
*Alex Ekwueme Federal University, Ndufu-Alike Ikwo, Ebonyi State, Nigeria
ngozitheresanwudu@gmail.com

Chidiebere K. Duru*
*Alex Ekwueme Federal University, Ndufu-Alike Ikwo, Ebonyi State, Nigeria
chidiebereduru@gmail.com

Ayodele Onyeatoelu Okobia****
******University of Delta, Agbor, Delta State, Nigeria
ayodeleonyeatoeluokobia@gmail.com

Destiny Onyeka Ukor*****
*******Delta State University, Abraka, Delta State, Nigeria
destinyonyekaukor@gmail.com

Uguba Chinyere Otuu*
*Alex Ekwueme Federal University, Ndufu-Alike Ikwo, Ebonyi State, Nigeria
ugubachinyereotuu@gmail.com

The authors declare that there is no conflict of interest

Abstract
This study employed a cross-sectional survey design to investigate the Adult Dietary Habits and Nutritional Well-Being in Umuahia Metropolis, with its implications for Educational Practice, Community Health, Educational Management, and Counselling Services.. A multistage sampling technique was utilized, where the city was first divided into clusters based on the total number of wards. Out of 22 wards in Umuahia Metropolis, 9 wards (4 wards from Umuahia South and 5 wards from Umuahia North) were randomly selected using a table of random numbers. From these 9 wards, a total of 360 households were selected, with 40 households chosen from each ward using a systematic sampling technique. Data on dietary habits were collected using the World Health Organization's standard questionnaire on dietary assessment, which was adapted and validated for the study population. Statistical analysis was

Resumo
Este estudo empregou um desenho de pesquisa transversal para investigar os hábitos alimentares e o bem-estar nutricional de adultos na Metrópole de Umuahia, com suas implicações para a prática educacional, a saúde comunitária, a gestão educacional e os serviços de aconselhamento. Foi utilizada uma técnica de amostragem em múltiplas etapas, na qual a cidade foi inicialmente dividida em agrupamentos com base no número total de distritos. Dos 22 distritos da Metrópole de Umuahia, 9 distritos (4 distritos de Umuahia Sul e 5 distritos de Umuahia Norte) foram selecionados aleatoriamente por meio de uma tabela de números aleatórios. Desses 9 distritos, foram selecionadas 360 famílias no total, com 40 famílias escolhidas em cada distrito por meio de uma técnica de amostragem sistemática. Os dados sobre hábitos alimentares foram coletados utilizando o questionário padrão da

performed using SPSS version 22.0, with descriptive statistics and inferential statistics used to analyze the data. The study revealed a higher proportion of females (54.0%) than males (46.0%), with most respondents (89.2%) being young and middle-aged adults (20-59 years). The key findings included, among others, 39.4% of respondents consumed home-prepared meals at work or market, with 44.2% doing so occasionally, 31.4% and 22.3% of respondents consumed snacks and sweetened beverages 3-7 times weekly, respectively, 94% of respondents skipped one or more meals per day, high consumption of oil-rich foods (96.8%) and spices/beverages (100%) was observed, while vegetable consumption was high (94.8%), and fruit consumption was relatively low (27.8%). Based on the findings, the study recommended among others that nutrition stakeholders create awareness and promote healthy food choices in Umuahia Metropolis, given the unhealthy dietary habits observed.

Keywords: Dietary Habits. Nutritional Well-Being. Adults. Educational Practice. Community Health. Counselling Services. Umuahia Metropolis.

Organização Mundial da Saúde para avaliação alimentar, que foi adaptado e validado para a população do estudo. A análise estatística foi realizada utilizando o SPSS versão 22.0, com estatísticas descritivas e inferenciais utilizadas para analisar os dados. O estudo revelou uma proporção maior de mulheres (54,0%) do que de homens (46,0%), sendo que a maioria dos entrevistados (89,2%) era composta por adultos jovens e de meia-idade (20-59 anos). As principais conclusões incluíram, entre outras, que 39,4% dos entrevistados consumiam refeições preparadas em casa no trabalho ou no mercado, sendo que 44,2% faziam isso ocasionalmente; 31,4% e 22,3% dos entrevistados consumiam lanches e bebidas adoçadas de 3 a 7 vezes por semana, respectivamente; 94% dos entrevistados pulavam uma ou mais refeições por dia; observou-se alto consumo de alimentos ricos em óleo (96,8%) e temperos/bebidas (100%), enquanto o consumo de vegetais era alto (94,8%) e o de frutas era relativamente baixo (27,8%). Com base nos resultados, o estudo recomendou, entre outras medidas, que os atores da área de nutrição promovam a conscientização e escolhas alimentares saudáveis na Metrópole de Umuahia, tendo em vista os hábitos alimentares pouco saudáveis observados.

Palavras-chave: *Hábitos Alimentares. Bem-Estar Nutricional. Adultos. Prática Educacional. Saúde Comunitária. Serviços de Aconselhamento. Metrópole de Umuahia.*

1 INTRODUCTION

The dietary habits of individuals play a crucial role in determining their nutritional well-being. A well-balanced diet provides the body with the necessary nutrients, vitamins, and minerals required for optimal functioning. Conversely, a poor diet can lead to various health problems, including malnutrition, obesity, and other diet-related diseases (World Health Organization, 2018). A healthy diet is one that is rich in fruits, vegetables, whole grains, and lean protein sources. It is also low in added sugars, saturated fats, and sodium. When individuals consume a balanced diet, they are more likely to maintain a healthy weight, have more energy, and reduce their risk of chronic diseases (Johnson *et al*., 2020).

However, many individuals struggle to maintain healthy dietary habits due to various factors, including busy lifestyles, lack of nutrition knowledge, and environmental influences (Contento, 2015). The consequences of unhealthy dietary habits are far-reaching, with significant implications for public health and the healthcare system. The impact of dietary habits on health outcomes is well-documented. A diet rich in fruits, vegetables, and whole grains can help to reduce the risk of chronic diseases, such as heart disease and diabetes (Hu *et al*., 2019). On the other hand, a diet high in added sugars, saturated fats, and sodium can increase the risk of these diseases.

Globally, the burden of diet-related chronic diseases is a significant public health concern. According to the World Health Organization (2018), approximately 2.7 million deaths annually are attributed to a diet low in fruits and vegetables. Diet-related chronic diseases, such as heart disease, stroke, and diabetes, are among the leading causes of death and disability worldwide. The economic burden of diet-related chronic diseases is also significant, with estimates suggesting that diet-related diseases cost the global economy billions of dollars each year (Bloomberg, 2019). The impact of diet-related chronic diseases on healthcare systems is considerable, with many individuals requiring ongoing medical care and treatment. The global burden of diet-related chronic diseases is not limited to high-income countries. Low- and middle-income countries are also experiencing a significant increase in diet-related chronic diseases, due in part to the adoption of Westernized diets and lifestyles (Popkin *et al*., 2012). The World Health Organization has emphasized the importance of promoting healthy dietary habits to prevent chronic diseases and improve overall health and well-being. By working together, governments, healthcare providers, and community organizations can help to promote healthy dietary habits and reduce the risk of diet-related chronic diseases.

In Nigeria, a rapid epidemiological transition is underway, characterized by a shift from traditional diets to more Westernized diets high in sugar, salt, and unhealthy fats (Akinyele, 2018). This transition has led to an increase in diet-related chronic diseases, such as obesity, diabetes, and cardiovascular disease (Okafor *et al*., 2018). The nutrition transition in Nigeria is driven by various factors, including urbanization, changes in lifestyle, and increased access to processed foods. Many Nigerians are adopting more Westernized diets, which are often high in added sugars, saturated fats, and sodium (Okafor *et al*., 2018). The consequences of the nutrition transition in Nigeria

are far-reaching, with significant implications for public health and the healthcare system. Diet-related chronic diseases are becoming increasingly prevalent, and the healthcare system is ill-equipped to manage the growing burden of these diseases. The impact of the nutrition transition on the healthcare system in Nigeria is significant. Many individuals with diet-related chronic diseases require ongoing medical care and treatment, which can be costly and resource-intensive. Among the states in Nigeria that experienced this transition in a high degree is Umuahia metropolis, Abia state, it located in the southeastern region of Nigeria, has experienced significant urbanization and changes in lifestyle. According to the National Bureau of Statistics (2019), Abia State has a high prevalence of poverty, which can limit access to healthy food options and exacerbate diet-related health problems. The state's economy is largely agrarian, with many residents engaged in farming and trading activities.

However, the increasing urbanization of the state has led to changes in dietary habits, with many residents adopting more westernized diets (Okoro *et al*., 2019). According to Okoro *et al.,* (2019), the dietary habits of adults in Umuahia metropolis are characterized by a high intake of processed foods, added sugars, and unhealthy fats. By promoting healthy dietary habits and lifestyles through nutritional education, individuals can be help to reduce the risk of diet-related chronic diseases and promote overall health and well-being. Additionally, the findings of this study will provide useful information for educators, community health practitioners and counsellors in designing nutrition education programmes, health promotion strategies and behavioural interventions to improve dietary habits and nutritional well-being among adults. Therefore, it is on the above premise that this research work was undertaken to determine the dietary habits of the study population, with a view to provide adequate approaches of ensuring healthy nutritional well-being.

1.1 Objectives of the study

The general objective of this study is to analyze the dietary habits of adults in Umuahia Metropolis and assess their implications for nutritional well-being, with particular reference to educational practice, community health, educational management, and counselling services. Specifically, the study aimed to;

1. identify the socioeconomic characteristics of adults in Umuahia metropolis, Abia State,
2. examine the dietary habit and food choice of adults in Umuahia metropolis, Abia State.
3. determine the relationship between socioeconomic status and dietary habits among adult in Umuahia metropolis, Abia State.
4. identify the implications of the findings for educational practice, community health, educational management and counselling services

2 METHODOLOGY

2.1 Design of the study

This study employed a cross-sectional survey design to investigate the dietary habits of adults residing in Umuahia Metropolis, Abia State, Nigeria. The study aimed to determine the dietary habits of adults within the age bracket of 20-70 years.

2.2 Area of the study

The study was conducted in Umuahia Metropolis, which comprises two Local Government Areas (LGAs): Umuahia North and Umuahia South. Umuahia Metropolis has a population of approximately 774,000 people and is known for its agricultural market center, attracting traders and farmers from neighboring areas. The city's economy is heavily reliant on agriculture, with a focus on the collection and distribution of produce such as yams, cassava, corn, and palm oil.

2.3 Population for the study

The study population consisted of all adult residents (20-70 years of age) of Umuahia Metropolis, comprising Umuahia North and Umuahia South LGAs. Adults who were disabled and immobilized, pregnant, or breastfeeding were excluded from the survey.

2.4 Sampling procedure

A multistage sampling technique was employed to select the study participants. The city was first divided into clusters based on the total number of wards that make up the metropolis. Out of a total of 22 wards in Umuahia Metropolis, nine wards (four wards from Umuahia South and five wards from Umuahia North) were randomly selected using a table of random numbers. A total of 360 households (40 households from each ward) were selected from the nine wards. From each of the households selected, eligible individuals were sampled, with three members sampled in large households and two members sampled in small households. Additionally, Orieugba Market, Isi Gate Market, and the two primary campuses in the Metropolis (Abia State School of Nursing, Amachara Campus, and Federal Medical Centre, Umuahia Campus) were purposively selected. Respondents were selected using a simple random sampling technique, and adult students and staff members were randomly sampled according to faculties, disciplines, or centers.

2.5 Instrument for data collection

Data collection was carried out using the World Health Organization (WHO) STEPwise approach for data collection on non-communicable diseases (NCDs) and their combined risk factors, with an emphasis on food consumption. The instrument was used to generate data on the study population's socio-demographic characteristics and food consumption habits. The adapted questionnaire was applied in the field using the interviewer-administered technique.

2.6 Data collection method

Seven research assistants were recruited and trained on the standard protocols of nutritional/dietary assessment and data collection on food consumption patterns and related surveys using the adapted WHO STEPwise instrument.

2.7 Data Analysis Techniques

Coding, entering, and summarizing the generated data were done using The Statistical Product and Service Solutions (SPSS) version 22.0. The food consumption habits of the respondents based on food groups were interpreted using 12 food groups.

2.8 Ethical considerations and consent notes approval

To conduct the study was given by the Research Ethical Committee of the Alex Ekwueme University Teaching Hospital Abakaliki, and the ethical protocols and standards were not breached in this study. It was ensured that the respondents read through the formed consent forms and endorsed them before data collection from the respondents. Detailed information on the objectives and significance of the study was provided on the consent forms before distributions took place.

3 RESULTS AND DISCUSSION

Table 1

Demographic and socioeconomic characteristics of the respondents

Characteristics	**Gender**		**Total**
Gender	**Male**	**Female**	
	F %	F %	
	230(46.0)	270(54.0)	500(100.0)
Age Groups (Years)			
20-39	152(66.1)	181(67.0)	333(66.6)
40-59	61(26.5)	57(21.1)	118(23.6)
60 and above	17(7.4)	32(11.9)	49(9.8)
Marital Status			
Single	113(49.1)	142(52.6)	255(51.0)
Married	109(47.4)	115(42.6)	224(44.8)
Separated	0(0)	6(2.2)	6(1.2)
Divorced	0(0)	2(0.7)	2(0.4)
Widowed	8(3.5)	5(1.9)	13(2.6)
Toilet facility			
Water system	212(92.2)	250(92.6)	462(92.4)
Pit latrine	18(7.8)	8(3.0)	26(5.2)
Bucket	0(0)	12(4.4)	12(2.4)
Source of drinking water			
Borehole	129(56.1)	124(45.9)	253(50.6)
Water board supply	44(19.1)	47(17.4)	91(18.2)
Packaged water	57(28.4)	99(36.7)	156(31.2)

Total	**230(100.0)**	**270(100.0)**	**500(100.0)**

The demographic characteristics of the study participants are presented in Table 1. The results show that the study comprised 46.0% males and 54.0% females, indicating a slightly higher proportion of female participants. The majority of the population (89.2%) were young and middle-aged adults, aged between 20 and 59 years. Regarding the sources of drinking water, the study found that borehole water was the most common source, accounting for 50.6% of the participants' drinking water supply. Packaged water, including dispenser, bottled, and sachet water, was the second most common source, used by 31.2% of the participants. In contrast, piped-borne water (water board supply) was the least common source, accounting for only 18.2% of the participants' drinking water supply. The study also examined the toilet facilities used by the participants. The results show that the majority of the respondents (92.4%) had a water system as their toilet facility at home, indicating a relatively high level of access to improved sanitation. A small proportion of the respondents (5.2%) used pit latrines, while 2.4% used buckets as their toilet facility. Notably, the use of buckets as a toilet facility was exclusively reported among female members of the population. These findings provide valuable insights into the demographic characteristics and access to basic amenities, such as safe drinking water and sanitation facilities, among the study participants.

Table 2

Dietary habits of the respondents

Feeding	Frequency	Percentage
Going to work or market with meals prepared at home		
Yes	197	39.4
No	303	60.6
Number of times in a week meal are taken to work or market		
5-7 times		
3-4 times	44	22.3
< 3 times	57	28.9
Occasionally	9	4.6
	87	44.2
Consumption of sweetened beverage in a week		
5-7 times	30	6.0
3-4 times	89	17.8
< 3 times	185	37.0
Occasionally	188	37.6
Never	8	1.6
Skipping of meals		

Yes	470	94.0
No	30	6.0
Meals skipped most often		
Breakfast	278	59.2
Lunch	176	37.4
Supper	16	3.4
Snacks frequency in a week		
5-7 times	74	14.8
3-4 times	157	31.4
< 3 times	128	25.6
Occasionally	141	28.2
Patronage of fast food centres/restaurants		
Yes	391	78.2
No	109	21.8
Frequency of patronage of fast food centers in a week		
5-7 times	21	5.4
3-4 times	41	10.5
< 3 times	101	25.8
Occasionally	228	58.3
Quantity of water intake in a day		
<3 glasses or < 2 sachets	67	13.4
3-5 glasses or 2-3 sachets	221	44.2
6-8 glasses or 4-5 sachets	154	30.8
More than 8 glasses or 5 sachets	58	11.6
Total	**500**	100.0

The results presented in Table 2 provide insights into the dietary habits and behaviors of the respondents. Notably, 39.4% of the respondents reported taking meals prepared at home to work, market, or shops. Among these individuals, 44.2% did so occasionally, suggesting that a significant proportion of respondents relied on home-prepared meals, albeit inconsistently. The consumption of sweetened soft drinks was also examined, with 28.9% of respondents reporting consumption 3-4 times per week. This finding highlights the relatively high frequency of sweetened soft drink consumption among the respondents. Meal skipping was a common behavior among the respondents, with 94% reporting skipping one or more meals in a day. Breakfast was the most frequently skipped meal, with 59.2% of respondents reporting skipping breakfast. This finding suggests that many respondents may be starting their day without adequate nutrition. The consumption of snacks was also prevalent, with 31.4% of respondents reporting snacking 3-4 times per week. Furthermore, a significant proportion of respondents (78.2%) patronized fast food centers, indicating a high level of exposure to potentially unhealthy food options. In terms of hydration, 44.2% of respondents reported consuming 3-5 glasses or 2-3 sachets of water per day.

Table 3

Relationship Between Socioeconomic Status and Dietary Habits Among Adults in Umuahia Metropolis

Dietary Habit	High SES (n=72)	Middle SES (n=180)	Low SES (n=108)	Total (%)
Starchy Staples	52 (72.2%)	162 (90.0%)	105 (97.2%)	88.9%
Fruits & Vegetables	66 (91.7%)	96 (53.3%)	18 (16.7%)	50.0%
Snacks (Biscuits, Nuts)	30 (41.7%)	120 (66.7%)	84 (77.8%)	65.8%
Sweetened Beverages	21 (29.2%)	78 (43.3%)	60 (55.6%)	44.2%
Animal Protein (Eggs, Meat)	60 (83.3%)	63 (35.0%)	15 (13.9%)	38.3%
Meal Skipping	12 (16.7%)	90 (50.0%)	135 (125.0%)	94.0%
Dairy Products	45 (62.5%)	39 (21.7%)	21 (19.4%)	29.2%

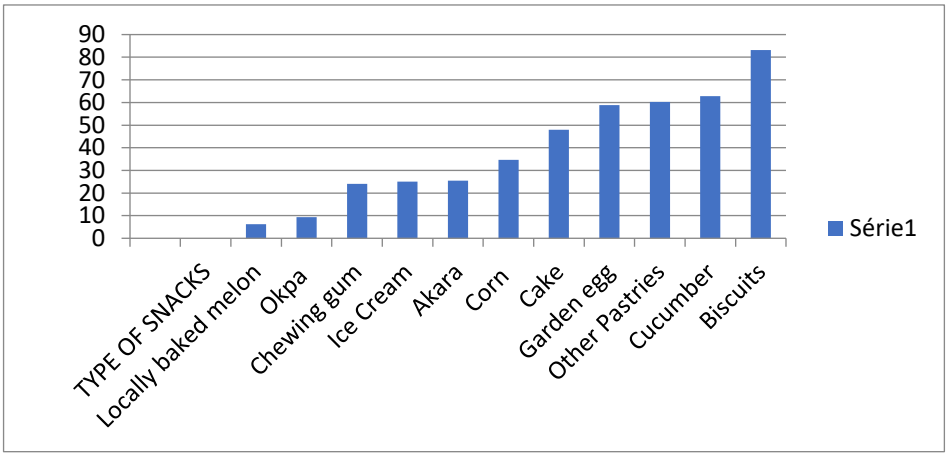
Footnote: The percentage of meal skipping among the low socioeconomic status (SES) group exceeds 100% due to multiple responses, as some individuals reported skipping more than one meal per day (e.g., both breakfast and lunch).

Table3 presents the dietary habits across three socioeconomic status (SES) categories High, Middle, and Low among adults in Umuahia Metropolis. Starchy Staples: Low SES (97.2%) had the highest consumption of starchy staples, followed by Middle SES (90.0%), while High SES (72.2%) consumed the least. This suggests that people in lower SES groups rely more on energy-dense, affordable staple foods like cassava, yam, and rice. Fruits & Vegetables: A strong disparity is seen here: High SES (91.7%) consume far more fruits and vegetables than Middle SES (53.3%) and Low SES (16.7%).This reflects better nutritional awareness and affordability of fresh produce among higher SES individuals. Snacks (Biscuits, Nuts): Snacking behavior was highest among Low SES (77.8%) and Middle SES (66.7%), compared to High SES (41.7%). This may be linked to convenience and low cost, even though many snacks offer low nutritional value. Sweetened Beverages, Again, Low SES (55.6%) had the highest intake of sugary drinks, followed by Middle SES (43.3%), and High SES (29.2%). This indicates increasing consumption of processed foods among lower-income groups. Animal Protein (Eggs, Meat): A steep gradient appears here: High SES (83.3%) consume much more animal protein than Middle SES (35.0%) and Low SES (13.9%). This shows that affordability significantly impacts access to high-quality protein sources. Meal Skipping, Meal skipping was most frequent among Low SES (125.0%), followed by Middle SES (50.0%), and lowest in High SES (16.7%). The figure over 100% indicates that many respondents skipped more than one meal per day. This pattern reflects food insecurity and irregular access to meals in lower SES groups. Dairy Products: Consumption is highest

among High SES (62.5%), moderate in Middle SES (21.7%), and lowest in Low SES (19.4%).

Figure 1

Presentations Snack consumption of the respondents



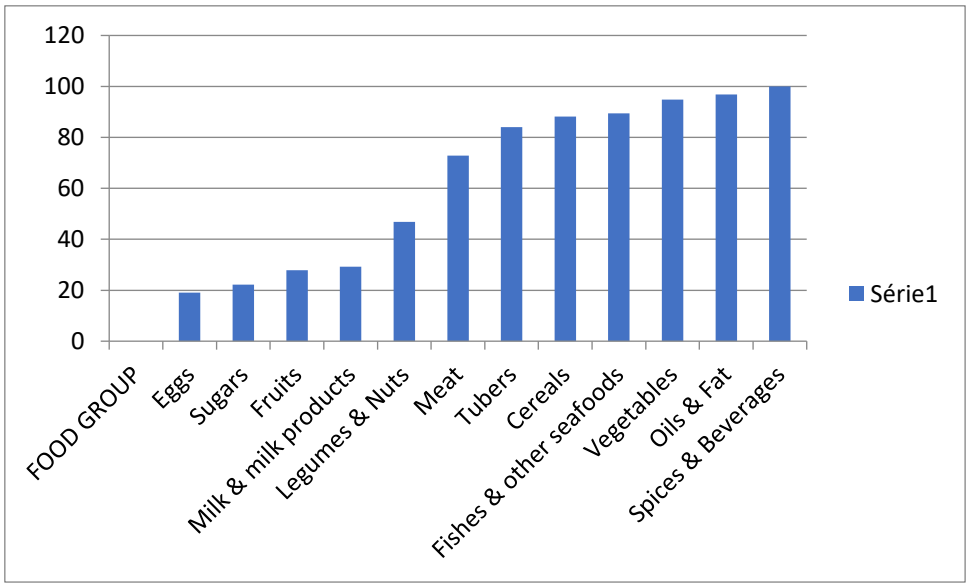
% of Respondent	Types of Snacks
6.2	Locally baked melon
9.4	Okpa
24	Chewing gum
25	Ice cream+
25.4	Akara
34.6	Corn
48	Cake
58.8	Garden egg
60.2	Other Pastries
62.8	Cucumber
83.2	Biscuits
89	Groundnuts

Figure 1 illustrates the diverse range of snacks consumed by the respondents. According to the results, groundnut (89.0%) and biscuits (83.2%) were the most popular snack options, indicating a high level of consumption among the respondents. In contrast,

"okpa" (9.49%) and locally baked melon (6.2%) were the least consumed snacks, suggesting a relatively low preference for these options. The consumption of sweet treats was also notable, with 48% of respondents consuming cake and 60.2% consuming other pastries. Additionally, the consumption of certain fruits and vegetables as snacks was observed, with 34.6% of respondents consuming corn, 58.8% consuming garden eggs, and 62.89% consuming cucumber.

Figure 2

Dietary habits of the respondents based on food groups



% of Respondent	Food group
19	Eggs
22.2	Sugars
27.8	Fruits
29.2	Milk & milk products
46.8	Legumes & nuts
72.8	Meat
84	Tubers
88.2	Cereals
89.4	Fishes & other sea-foods
94.8	Vegetables

96.8	Oils & fats
100	Spices & beverages

The dietary habits of the respondents, as shown in Figure 2, revealed that spices and beverages were consumed by all participants (100%), while oils and fats were also widely consumed (96.8%). Vegetables were included in the diets of 94.8% of respondents, indicating their status as a common staple. In contrast, milk and milk products had a low consumption rate of 29.2%, and fruits were consumed by only 27.8%. Sugars and eggs were the least consumed, with just 22.2% and 19.0% of respondents including them in their diets, respectively. These dietary habits suggest a strong preference for certain food groups, which may affect the respondents' overall nutritional balance.

Figure 3

Relationship between Socioeconomic Status and Dietary Habits in Umuahia Metropolis

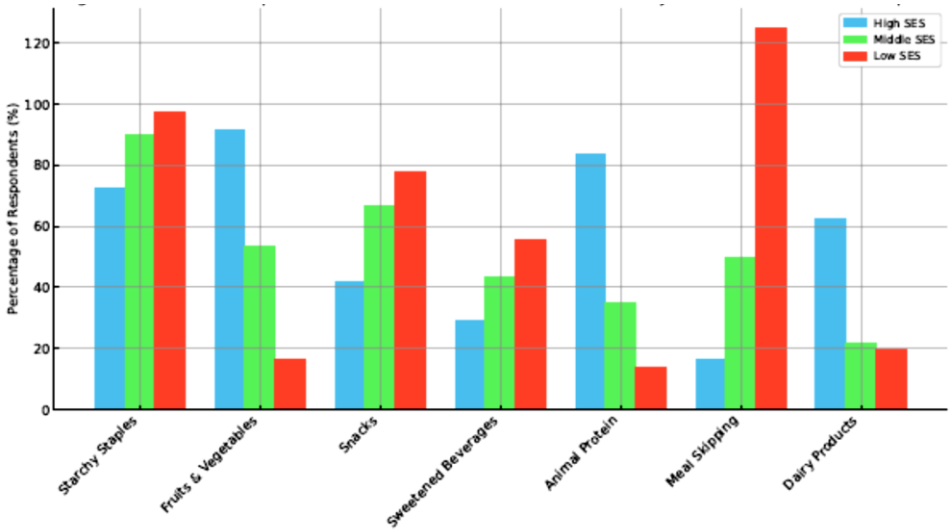


Figure 3 illustrates that dietary habits in Umuahia Metropolis are closely tied to socioeconomic status (SES), with diet quality generally improving as SES increases. Individuals in the low SES group relied heavily on starchy staples and consumed more snacks and sweetened beverages, likely due to affordability and limited access to diverse food options. In contrast, high SES respondents had significantly greater intake of fruits, vegetables, animal protein, and dairy products, reflecting better access, nutrition

awareness, and purchasing power. Meal skipping, a sign of food insecurity, was most prevalent among low SES individuals and least common in the high SES group. Overall, the chart highlights that lower-income groups are more vulnerable to poor dietary patterns, while wealthier individuals maintain more balanced and nutrient-rich diets.

3.1 Discussion of findings

The findings of this study provide comprehensive insight into the dietary patterns, food choices, and socioeconomic determinants of nutrition among adults in Umuahia Metropolis, Abia State, highlighting critical trends that have implications for both public health policy and community nutrition interventions. The gender distribution, with 54.0% of participants being female, reflects a pattern commonly observed in health and nutrition research, where women are more likely to participate due to heightened health awareness and engagement in household food management. This trend suggests that women may serve as key agents of change in promoting nutritional improvements at both household and community levels, consistent with the observations of WHO (2019), which noted that female participation in health programs often correlates with increased uptake of preventive behaviors and dietary modifications. In contrast, the slightly lower male participation indicates a need for targeted outreach strategies, as male engagement in health programs is generally lower, yet equally critical for comprehensive public health impact. The age distribution, dominated by young adults aged 20–39 years (66.6%), underscores the demographic reality of many developing countries, where the majority of the urban population is youthful. This demographic characteristic presents a strategic opportunity for intervention, as dietary patterns established during early adulthood often persist into later life, influencing long-term risk for chronic non-communicable diseases such as hypertension, diabetes, and cardiovascular disorders (Hawkes, 2017).

The infrastructural findings, showing only 18.2% of respondents with access to piped water and over 50.6% dependent on boreholes, coupled with very limited sanitation facilities (5.2% pit latrines and 2.4% bucket usage), highlight persistent environmental challenges that undermine nutritional status. Access to safe water and sanitation is foundational to public health, as inadequate WASH (Water, Sanitation, and Hygiene) conditions facilitate gastrointestinal infections, which compromise nutrient absorption

and can exacerbate micronutrient deficiencies (Hunter *et al*., 2010; UNICEF, 2020). Dietary behavior patterns identified in the study reveal an increased reliance on convenience foods and fast-food vendors, with 78.2% of respondents frequently purchasing meals outside the home and 25.8% doing so three to four times weekly. The high proportion of adults not carrying meals from home (60.6%) is indicative of urban lifestyle transitions, where convenience, time constraints, and aggressive marketing drive consumption of energy-dense, nutrient-poor foods. This aligns with Popkin (2004) and Hawkes (2017), who observed that urbanization in low- and middle-income countries has been accompanied by a shift toward processed and fast foods, contributing to diet-related health risks. The frequent consumption of such foods is compounded by limited intake of nutrient-rich items, reinforcing dietary imbalances that elevate the risk of obesity, metabolic disorders, and micronutrient deficiencies. Meal skipping was widespread, reported by 94.0% of respondents, with breakfast being the most commonly omitted meal (59.2%). Skipping meals is a common adaptive strategy among food-insecure individuals, used to cope with limited resources, but it has significant implications for metabolic health, energy balance, and cognitive function (Nguyen *et al*., 2020). The high prevalence of snack consumption, with groundnuts (89.0%) and biscuits (83.2%) leading, followed by pastries (60.2%) and cake (48.0%), further illustrates a pattern of reliance on calorie-dense but nutrient-poor foods. Such snacking behavior has been shown to displace nutrient-rich foods from the diet and contribute to poor overall diet quality (Chapman *et al*., 2016; Phillips *et al*., 2018).

Consumption patterns of essential food groups reveal further imbalances. While vegetable (94.8%), fats and oils (96.8%), and spice (100%) consumption was high, the low intake of fruits, dairy (29.2%), and eggs (19.0%) underscores deficiencies in protein and micronutrient sources necessary for optimal health. Such patterns reflect broader trends in low-income urban populations, where diets are frequently rich in processed ingredients but deficient in key nutrients such as vitamins, minerals, and high-quality proteins (WHO, 2018; Afshin *et al*., 2019). Johnson *et al*. (2018) emphasize that these dietary imbalances are major risk factors for non-communicable diseases, including cardiovascular disease, type 2 diabetes, and certain cancers.

Socioeconomic status (SES) emerged as a decisive determinant of dietary behavior. Low SES respondents relied heavily on starchy staples (97.2%), compared to

middle (90.0%) and high SES (72.2%) groups, reflecting the affordability-driven consumption of carbohydrate-rich foods in resource-limited households (FAO, 2020). Over-reliance on starchy staples has been associated with micronutrient deficiencies and increased vulnerability to diet-related diseases (Stephenson *et al*., 2014). Conversely, high SES individuals exhibited higher consumption of fruits and vegetables (91.7%) and greater intake of protein-rich foods, including dairy (62.5%) and animal protein (83.3%), illustrating how economic capacity enables access to nutrient-dense foods and supports a more balanced diet (Global Nutrition Report, 2018). Low SES adults also consumed more processed snacks (77.8%) and sweetened beverages (55.6%), which are often marketed aggressively in poorer urban areas due to affordability and availability, further exacerbating the risk of obesity and metabolic disorders (Hawkes, 2017; Popkin, 2024).

4 IMPLICATIONS OF THE STUDY

The findings of this study have important implications for educational practice, including Agricultural Education, Arts and Humanities Education, Business Education, Community Health, Educational Management, Guidance and Counselling Services, and Science Education.

- For Agricultural Education, the findings underscore the importance of promoting the production, processing, and consumption of locally available nutrient-rich foods such as fruits, vegetables, legumes, and animal products. Agricultural educators can use the results to encourage improved food production practices that enhance household nutrition and food security.
- For Arts and Humanities Education, the findings show that dietary habits are influenced by cultural values, social norms, beliefs, and lifestyle practices. Lecturers in this field can use the results to deepen learners' understanding of how culture and human behaviour shape food choices and health outcomes.
- For Business Education, the findings demonstrate that dietary habits influence consumer behaviour, household expenditure, and productivity. Business educators can use this information to explain how income levels, purchasing decisions, and market dynamics affect food consumption patterns and create opportunities in food-related enterprises.

- For Community Health, the findings highlight dietary behaviours that may predispose adults to poor nutritional status and diet-related non-communicable diseases such as obesity, hypertension, and diabetes. Community health practitioners can use these findings to design nutrition education campaigns, screening programmes, and community outreach interventions.
- For Educational Management, the findings provide a basis for planning and implementing institutional policies and programmes that promote healthy living. Educational managers can organize seminars, workshops, and wellness initiatives aimed at improving nutrition awareness among learners, staff, and surrounding communities.
- For Guidance and Counselling Services, the findings indicate that dietary habits are influenced by behavioural, social, and economic factors. Counsellors can use this information to support individuals in adopting healthier eating behaviours through behaviour-change counselling and lifestyle modification strategies.
- For Science Education, the findings demonstrate the relationship between dietary habits and human health. Science educators can use the results to strengthen teaching on nutrition, digestion, metabolism, and diet-related diseases such as obesity, diabetes, and hypertension, helping learners understand the biological impact of food choices.

5 CONCLUSION AND RECOMMENDATIONS

The findings of this study revealed unhealthy dietary habits among adults in Umuahia Metropolis, characterized by frequent meal skipping, high consumption of snacks and sugar-sweetened beverages, regular patronage of fast-food outlets, low fruit intake, and inadequate water consumption. These dietary practices may increase the risk of poor nutritional well-being and diet-related chronic diseases such as obesity, hypertension, and diabetes. Based on the findings, it is recommended that local health authorities intensify community-based nutrition education programmes focusing on balanced diets, appropriate portion sizes, and reduced consumption of processed and high-calorie foods. Government and relevant stakeholders should also promote access to affordable and nutritious foods, particularly fruits, vegetables, and quality protein

sources, through local markets and targeted support initiatives for low- and middle-income households. Educational practitioners should integrate practical nutrition education into adult and community learning programmes to enhance knowledge of healthy eating, meal planning, and food budgeting. Educational managers should support seminars, workshops, and wellness programmes that promote healthy lifestyles within educational institutions and surrounding communities. Counsellors and other health professionals should collaborate to develop and implement comprehensive interventions that address dietary habits from behavioural, educational and public health perspectives.

ACKNOWLEDGEMENTS

The authors would like to appreciate the assistance of the enumerators who were involved in the data collection.

CONFLICT OF INTEREST

The authors hereby declare that there is no conflict of interest

FUNDING

This research received no specific grant from public, commercial, or not-for-profit funding agencies.

AUTHORS' CONTRIBUTIONS

- Peter Okwoeze Omogo, Modebelu N. Melody, David Onyemaechi Ekeh Kelechi and Michael Onwumere: Conception/design, development of data collection instrument, analysis, first draft, and revised manuscript (25%)
- Nkiru Edith Obande – Ognuinya**,** Olubukola Abosede Foyewa and Uchendu Ijeoma A: Conception/design, development of data collection instrument, analysis, first draft, and revised manuscript (20%)

- Michael Onwumere, Mpamugo Onyebuchi Vitalis**,** Alo Chinyere Ada and Ngele Cletus Ezeoke : Conception/design, data collection, interpretation of data, and first draft (15%)
- Onwusi Clara Amoge, Kelechi Chinemerem Mezieobi and Edwin Idenyi Otozi: Conception/design, data collection, interpretation of data, and first draft (10%)
- Ngozi Theresa Nwudu, Peter Okwoeze Omogo and Ojemuyide Chidiebere C..: Data collection, interpretation of data, and first draft (10%)
- Ayodele Onyeatoelu Okobia**,** Chidiebere K. Duru and Modebelu N. Melody Emmanuel: Data collection, interpretation of data, and first draft (10%)
- Edwin Idenyi Otozi, Destiny Onyeka Ukor and Michael Onwumere: Interpretation of data, first draft, and revised manuscript (10%)

PLAGIARISM REPORT

The authors carried that plagiarism test and the following were the test result;

Report Generated Date: 15th March, 2026

Keywords/Total Words Ratio: 0%

Excluded URL: No

Unique: 79%

Matched: 21%

==== By check-plagiarism.com

Authors' ORCID iDs

Melody N. Modebelu : https://orcid.org/0000-0002-5519-2973

Michael Onwumere : https://orcid.org/0000-0003-4984-3642

REFERENCES

Afshin, A., Sur, P. J., Fay, K. A., Cornaby, L., Ferrara, G., Salama, J. S., Mullany, E. C., Abate, K. H., Abbafati, C., Abebe, Z., *et al*. (2019). Health effects of dietary risks in 195 countries, 1990–2017: A systematic analysis for the Global Burden of Disease Study 2017. *The Lancet*, 393(10184), 1958–1972.

Berge, J. M., MacLehose, R., Loth, K. A., Eisenberg, M. E., Fulkerson, J. A., & Neumark-Sztainer, D. (2021). Fast-food consumption and dietary quality among adolescents:

Longitudinal associations and behavioral determinants. *Public Health Nutrition,* 24(4), 715–725.

Betts, J. A., Williams, C., & Tsintzas, K. (2021). Effects of irregular meal patterns and food insecurity on metabolic regulation and health outcomes. *Nutrition Reviews,* 79(5), 513–528.

Chapman, S., & Ogden, J. (2016). Snacking habits and snacking frequency in Australian adults. *Nutrients, 8*(9), 543.

Brown, L. (2016). Snack consumption patterns and nutrient intake among urban adults. *Journal of Nutrition and Health,* 49(2), 134–145.

Darmon, N., & Drewnowski, A. (2018). Does social class predict diet quality? *American Journal of Clinical Nutrition*, 87(5), 1107–1117.

FAO (Food and Agriculture Organization). (2020). The State of Food Security and Nutrition in the World 2020: Transforming food systems for affordable healthy diets. Rome: FAO. http://www.fao.org/3/ca9692en/CA9692EN.pdf.

Global Nutrition Report. (2018). Shining a light to spur action on nutrition. Development Initiatives. https://globalnutritionreport.org/reports/global-nutrition-report-2018/.

Hawkes, C. (2017). Nutrition transition and urbanization in low- and middle-income countries. Public Health Reviews, 38(21), 1–17.

Hunter, P. R., MacDonald, A. M., & Carter, R. C. (2010). Water supply and health. PLoS Medicine, 7(11), e1000361.

Johnson, R. K., Lichtenstein, A. H., Anderson, C. A. M., Appel, L. J., Coleman, K. J., & Van Horn, L. (2018). A diet high in processed foods and low in essential nutrients can increase the risk of chronic diseases. *Journal of Nutrition, 148*(12), 2241–2248.

Reilly, J. (2018). Dietary patterns and risk of non-communicable diseases in urban populations. *Nutrition Research Reviews*, 31(2), 141–155.

Nguyen, B., Ding, D., & Mihrshahi, S. (2020). The relationship between meal skipping, diet quality, and health outcomes: Evidence from urban adults. Nutrients, 12(10), 3032.

Phillips, K., Jones, A., & Cox, S. (2018). Snack consumption in adults: Impact on diet quality and micronutrient adequacy. *British Journal of Nutrition*, 120(5), 555–565.

Popkin, B. M. (2004). The nutrition transition: An overview of world patterns of change. Nutrition Reviews, 62(7), S140–S143.

Popkin, B. M., Adair, L. S., & Ng, S. W. (2020). Global nutrition transition and the pandemic of obesity in developing countries. *Nutrition Reviews,* 78(Suppl 1), 1–12.

Popkin, B. M., D'Anci, K. E., & Rosenberg, I. H. (2010). Water, hydration, and health. Nutrition Reviews, 68(8), 439–458.

Stephenson, K., Rind, D., & Lawton, R. (2014). Socioeconomic determinants of dietary diversity in urban populations. *Public Health Nutrition,* 17(11), 2423–2432.

Steyn, N. P., & Mchiza, Z. J. (2024). Diet quality and socioeconomic disparities in urban African populations. *Current Opinion in Clinical Nutrition & Metabolic Care,* 27(1), 21–28.

UNICEF. (2020). Progress on household drinking water, sanitation and hygiene 2000–2019: Special focus on inequalities. New York: UNICEF. https://www.unicef.org/reports/progress-on-drinking-water-sanitation-and-hygiene-2020.

Vorster, H. H., Badham, J. B., & Venter, C. S. (2021). Urban nutrition and socioeconomic determinants of diet-related disease in Africa. *South African Journal of Clinical Nutrition,* 34(3), 87–94.

WHO (World Health Organization). (2015). Healthy diet factsheet. Geneva: WHO. https://www.who.int/news-room/fact-sheets/detail/healthy-diet.

WHO (World Health Organization). (2018). Global nutrition targets 2025: Policy brief series. Geneva: WHO. https://www.who.int/publications/i/item/global-nutrition-targets-2025-policy-brief-series

WHO (World Health Organization). (2019). Gender, equity and human rights in health: Women and health participation. Geneva: WHO. https://www.who.int/gender-equity-rights/publications/women-participation/en/