

Dietary Patterns, Weight Perception and Lifestyle Behaviors among Adolescents in Public and Private Secondary Schools in Umuahia South Local Government Area, Abia State, Nigeria

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ABSTRACT

Adolescence, defined as the period between 10 and 19 years of age, represents a critical stage of growth and development during which adequate nutrition is essential for optimal physical, cognitive, and psychosocial health. This study aimed to assess the dietary patterns and nutritional status of adolescents attending public and private secondary schools in Umuahia South Local Government Area (LGA), Abia State, Nigeria. An analytical cross-sectional study was conducted among 399 adolescents selected using a multistage sampling technique. Data were collected using a structured questionnaire incorporating a Food Frequency Questionnaire (FFQ) and anthropometric measurements, and analyzed using IBM SPSS Statistics version 27.0. Most respondents were aged 13–15 years (44.9%) and female (52.1%). Dietary practices were characterized by frequent breakfast skipping, with 19.0% skipping breakfast almost daily and 23.3% doing so three to four times weekly, mainly because of insufficient time in the morning (28.3%). Frequent consumption of energy-dense snacks was observed, with 25.8% consuming snacks more than once daily, while 32.8% consumed starchy staples such as Garri five to six times weekly. Sedentary behavior was also common, with 16.8% reporting no day of at least 60 minutes of physical activity per week and 59.4% spending three or more hours daily on recreational screen time. Although 47.4% perceived their body weight as normal, 31.6% perceived themselves as overweight or obese compared with 21.1% who perceived themselves as underweight. No statistically significant association was observed between father's educational level and breakfast skipping ($\chi^2 = 20.58$, $df = 18$, $p = 0.301$) or between sex and weight-control practices ($\chi^2 = 5.75$, $df = 5$, $p = 0.331$). The findings indicate that unhealthy dietary practices and sedentary lifestyles are common among adolescents in the study area and underscore the need for comprehensive school-based nutrition education, promotion of regular physical activity, and strengthened school nutrition policies to encourage healthier dietary behaviors.

Keywords: Adolescents; dietary patterns; nutritional status; food frequency questionnaire; secondary schools; Nigeria



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INTRODUCTION

Adolescence, commonly defined as the period between 10 and 19 years of age, is a biologically and socially important stage of life characterized by rapid physical, cognitive, emotional, and psychosocial development (World Health Organization [WHO], 2024; Mastorci et al., 2024). Adequate nutrition during this period is essential for optimal growth, pubertal development, immune competence, academic performance, and long-term health outcomes, as dietary habits established during adolescence often persist into adulthood (Samad et al., 2024; Carducci et al., 2025). In addition, dietary exposures during adolescence contribute substantially to future cardiometabolic risk, including obesity, hypertension, diabetes mellitus, and cardiovascular diseases (Carducci et al., 2025).

In Nigeria, adolescent nutrition remains a major public health concern because undernutrition, micronutrient deficiencies, overweight, and obesity coexist within the same population, creating the double and, in some settings, triple burden of malnutrition (Abubakar et al., 2024; Gabriel et al., 2024). Recent national evidence indicates that adolescents' diets are largely dominated by cereals, grains, and other starchy foods, while the consumption of fruits, vegetables, animal-source foods, and other micronutrient-rich foods remains inadequate (Abubakar et al., 2024). Similarly, UNICEF (2023) reported that approximately 7.3 million adolescent girls and women of reproductive age in Nigeria were undernourished, while more than half experienced anemia, highlighting the continuing burden of poor nutrition among adolescents and young women.

Dietary pattern refers to the habitual combination, quantity, variety, and frequency of foods and beverages consumed over time (Vepsäläinen & Lindström, 2024). Among adolescents, unhealthy dietary patterns commonly include breakfast skipping, frequent consumption of energy-dense snacks and sugar-sweetened beverages, poor dietary diversity, and inadequate intake of fruits and vegetables (Olatona et al., 2023; Abubakar et al., 2024). Evidence from Lagos State demonstrated poor dietary habits and low dietary diversity among adolescents, with overweight and obesity affecting 13.4% and 7.0% of participants, respectively (Olatona et al., 2023). Furthermore, a recent meta-analysis reported that breakfast skipping was associated with significantly increased odds of overweight and obesity among children and adolescents, suggesting that irregular meal patterns may contribute to adverse nutritional outcomes (Wang et al., 2023). Socioeconomic factors also play an important role in shaping adolescent dietary behavior and nutritional status. Household income, parental education, school type, food prices, and the school food environment influence access to nutritious foods and ultimately affect dietary quality and nutritional outcomes (Afe et al., 2023; Hähnel et al., 2025; Samad et al., 2024). Nigerian studies

comparing adolescents attending public and private schools have reported differences in nutritional outcomes according to socioeconomic context, although the magnitude and direction of these differences remain inconsistent across settings (Afe et al., 2023).

Despite these advances, recent systematic reviews indicate that adolescent nutrition research in Nigeria remains largely limited to localized school-based studies, with few studies judged to have a low risk of bias and no nationally representative evidence currently available (Gabriel et al., 2024; Abubakar et al., 2024). Furthermore, many existing studies have focused primarily on either dietary practices or nutritional status in isolation, with relatively limited attention given to the combined assessment of dietary patterns, lifestyle behaviors, and nutritional status among adolescents attending both public and private secondary schools within the same population. Evidence from Umuahia South Local Government Area is particularly scarce, despite ongoing urbanization and changing dietary behaviors that may influence adolescent nutritional outcomes. Consequently, context-specific evidence is required to inform school-based nutrition programs, community interventions, and policy decisions aimed at improving adolescent health in the study area.

METHODOLOGY

Study Design

An analytical cross-sectional study design was adopted for this study. Cross-sectional studies measure exposure and outcome variables simultaneously within a defined population at a single point in time and are appropriate for estimating prevalence, describing population characteristics, and examining associations between variables without establishing causal relationships (Pérez-Guerrero et al., 2024). This design was considered appropriate because it enabled the assessment of dietary patterns and nutritional status among adolescents attending public and private secondary schools in Umuahia South Local Government Area, while also facilitating comparisons across sociodemographic groups and the examination of associations between selected study variables.

Study Location

The study was conducted in Umuahia South Local Government Area (LGA), Abia State, Nigeria, with its administrative headquarters at Apumiri in Ubakala. The LGA comprises urban and semi-rural communities, including Ubakala, Nsirimo, Ahiaukwu, Umuopara, and Ohiya, and has a mix of public and private secondary schools serving adolescents from diverse socioeconomic backgrounds. The area is experiencing increasing

urbanization and changes in dietary and lifestyle patterns, making it an appropriate setting for assessing dietary patterns and nutritional status among school-going adolescents and for generating evidence to inform school- and community-based nutrition interventions.

Study Population

The target population comprised male and female adolescents aged 10–19 years enrolled in public and private secondary schools in Umuahia South Local Government Area, Abia State. The accessible population consisted of eligible adolescents attending the selected secondary schools included in the study. Students were eligible if they were between 10 and 19 years of age, enrolled in one of the selected schools, present during data collection, and willing to participate in the study. Written informed consent was obtained from parents or guardians where applicable, while assent was obtained from participating adolescents. Adolescents with known chronic medical conditions that could independently affect nutritional status or growth, and those who did not provide the required consent or assent, were excluded from the study.

Sample Size Determination

The sample size for the study was determined using the Taro Yamane formula for finite populations (Yamane, 1967):

$$n = \frac{N}{1 + N(e)^2}$$

Where:

- n = required sample size;
- N = total population of eligible adolescents in the selected secondary schools; and
- e = margin of error (0.05).

Assuming an estimated population of 20,000 eligible adolescents, the sample size was calculated as follows:

$$n = \frac{20,000}{1 + 20,000(0.05)^2}$$

$$n = \frac{20,000}{1 + 50}$$

$$n = \frac{20,000}{51} = 392.2 \approx 392$$

To improve representativeness and account for possible non-response, the sample size was increased to 399 participants, which constituted the final sample for the

study.

Sampling Technique

A multistage sampling technique was employed. First, three wards were selected from Umuahia South LGA by simple random sampling: Ubakala A, Nsirimo, and Ubakala B. Second, one public and one private secondary school were selected from each of the three wards, giving a total of six schools. Third, eligible adolescents aged 10–19 years were identified within the selected schools. Finally, proportionate quota sampling was used to select the required number of respondents from each school so that the final sample reflected the distribution of students across the participating schools.

Instrument for Data Collection

Data were collected using a structured questionnaire and anthropometric measurement sheet. The questionnaire covered socio-demographic characteristics, dietary habits, meal patterns, and frequency of food consumption. A semi-quantitative food frequency questionnaire was used because FFQs are commonly applied in adolescent dietary studies to capture usual intake patterns across food groups and eating Behaviors (Samad et al., 2024). Standardized equipment was used to obtain respondents' height and weight measurements for the assessment of nutritional status.

Validity of Instrument

Content validity of the questionnaire was established through review by the researcher's supervisor, who examined the items for clarity, relevance, and adequacy in relation to the study objectives and research questions.

Reliability of Instrument

Reliability was established using the test-retest method. The finalized questionnaire was pretested among 20 participants in Umunwanwa Central School in Ohiaocha Ward, who had characteristics similar to the study population but were not included in the main survey. The same instrument was administered again after two weeks, and the responses were correlated to assess stability and internal consistency.

Ethical Considerations

Ethical approval was obtained from Abia State University before the study commenced. Permission was also sought from relevant school authorities. Participation was voluntary, and confidentiality was maintained throughout the study. Adolescents were informed about the purpose of the study, and assent as well as parental or guardian consent was obtained where applicable.

Table 1: Sociodemographic characteristics of respondents

Variables	Frequency	Percentage (%)
Age		
10-12 years	87	21.8
13-15 years	179	44.9
16-19 years	133	33.3
Sex		
Male	191	47.9
Female	208	52.1
Current Class		
JSS 1	69	17.3
JSS 2	67	16.8
JSS 3	63	15.8
SSS 1	67	16.8
SSS 2	69	17.3
SSS 3	64	16.0
Mother's Education Level		
No formal education	23	5.8
Primary school	67	16.8
Secondary school (JSS/SSS)	143	35.8
NCE / OND / Diploma	87	21.8
University Degree (BSc / HND)	61	15.3
Postgraduate Degree (MSc / PhD)	13	3.3
I don't know	5	1.3
Father's Education Level		
No formal education	19	4.8
Primary school	53	13.3
Secondary school (JSS/SSS)	131	32.8
NCE / OND / Diploma	93	23.3
University Degree (BSc / HND)	79	19.8
Postgraduate Degree (MSc / PhD)	21	5.3
I don't know	3	0.8
Total	399	100.0

Source: Field Survey, 2026

Method of Data Collection

The researcher and trained research assistants visited the selected schools on scheduled dates to administer the questionnaire directly to eligible students. The purpose of the study was explained clearly, questions were clarified where necessary, and completed instruments were checked on site for completeness. At the same visit, anthropometric measurements were taken in an organized and private manner to ensure accuracy and confidentiality.

Data Analysis

Data collected from the questionnaires and anthropometric measurements were coded, entered, cleaned, and analysed using the Statistical Package for the Social Sciences (SPSS) version 27.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics, including frequencies and percentages, were used to summarize respondents' socio-demographic characteristics, dietary habits, food consumption patterns, perceived body weight, weight-

control practices, physical activity, sedentary Behavior, and nutritional status. The findings were presented using frequency tables and accompanying narrative descriptions. Inferential analysis was performed using the Chi-square test of independence to examine the association between selected categorical variables, including father's educational level and breakfast-skipping frequency, as well as sex and weight-control practices. Statistical significance was set at $p < 0.05$.

RESULTS

A total of 399 adolescents participated in the study. The largest proportion of respondents (44.9%) were aged 13–15 years, followed by those aged 16–19 years (33.3%) and 10–12 years (21.8%). Females accounted for 52.1% of the respondents, while males constituted 47.9%. The distribution of respondents across class levels was relatively even, with JSS 1 and SSS 2 each accounting for 17.3% of the sample. Most respondents reported that their mothers (35.8%) and fathers (32.8%) had attained secondary school education (Table 1).

Table 2: Dietary Habits and Meal Skipping Patterns

Variables	Frequency	Percentage (%)
Frequency of Missing Breakfast		
Never	109	27.3
1-2 times a week	121	30.3
3-4 times a week	93	23.3
Almost every day	76	19.0
Frequency of Missing Lunch		
Never	167	41.9
1-2 times a week	139	34.8
3-4 times a week	57	14.3
Almost every day	36	9.0
Frequency of Missing Dinner		
Never	243	60.9
1-2 times a week	89	22.3
3-4 times a week	41	10.3
Almost every day	26	6.5
Main Reason for Skipping Breakfast		
I don't have enough time in the morning	113	28.3
I don't feel hungry in the morning	87	21.8
I am trying to control or lose weight	31	7.8
There is no food available to eat at home	47	11.8
I prefer to use the money for other things	33	8.3
I don't like the food available for breakfast	21	5.3
I do not skip breakfast	67	16.8
Frequency of Eating Snacks		
I do not eat snacks	23	5.8
1-2 times a week	79	19.8
3-4 times a week	111	27.8
Once a day	83	20.8
More than once a day	103	25.8
Total	399	100.0

Source: Field Survey, 2026**Table 3:** Frequency of food consumption among adolescents

Food/Drink Item	Never or <1/mth	1-3 times/mth	1-2 times/week	3-4 times/week	5-6 times/week	1 time/day	2+ times/day
STARCHY STAPLES / GRAINS							
Boiled Yam	23	61	103	119	59	27	7
Pounded Yam	47	109	121	83	29	9	1
Garri (Eba)	9	21	49	103	131	69	17
Cassava Fufu (Akpu)	33	59	89	101	79	31	7
Boiled Rice	7	13	33	107	139	73	27
Jollof / Fried Rice	11	43	97	113	89	37	9
Bread	13	29	67	93	101	71	25
Plantain (Boiled/Roasted)	53	89	109	87	43	13	5
Fried Plantain (Dodo)	37	79	113	99	51	17	3
Noodles (e.g., Indomie)	17	39	83	109	89	49	13
Spaghetti / Macaroni	21	57	119	103	69	23	7
Pap / Akamu / Ogi	49	73	97	89	53	31	7
Average	26.7 (6.7%)	56.0 (14.0%)	90.0 (22.6%)	100.5 (25.2%)	77.7 (19.5%)	37.5 (9.4%)	10.7 (2.7%)
SOUPS AND STEWS							
Egwusi Soup	19	47	101	113	79	33	7
Ogbono Soup	31	63	109	97	69	23	7
Okra Soup	29	71	113	93	61	27	5
Bitterleaf (Onugbu) Soup	59	93	107	79	43	13	5
Oha / Ora Soup	53	89	111	83	47	13	3
Nsala (White) Soup	83	109	97	63	31	11	5
Banga Stew (Ofe Akwu)	103	123	93	51	19	7	3
Two tomato Stew	9	17	43	99	137	71	23
Average	48.3 (12.1%)	76.5 (19.2%)	96.8 (24.3%)	84.8 (21.3%)	60.8 (15.2%)	24.8 (6.2%)	7.3 (1.8%)
PROTEINS (ANIMAL)							
Beef / Goat Meat	17	31	89	113	101	39	9
Chicken / Turkey	67	133	103	59	27	9	1
Fresh Fish	23	49	101	117	73	29	7
Dried / Smoked Fish	31	53	109	113	69	19	5
Egg (boiled or fried)	29	61	113	101	63	27	5
Crayfish (in food)	7	11	23	69	133	109	47
Average	29.0 (7.3%)	56.3 (14.1%)	89.7 (22.5%)	95.3 (23.9%)	77.7 (19.5%)	38.7 (9.7%)	12.3 (3.1%)

PROTEINS (PLANT)							
Beans (Porridge/Cooked)	19	41	103	119	79	31	7
Moi-Moi (Bean pudding)	37	73	121	103	49	13	3
Akara (Bean cake)	43	83	119	93	47	11	3
Okpa (Bambara nut pudding)	59	97	113	79	37	11	3
Ukwa (Breadfruit)	113	137	89	43	13	3	1
Two groundnuts (Peanuts)	23	59	97	101	73	37	9
Average	49.0 (12.3%)	81.7 (20.5%)	107.0 (26.8%)	89.7 (22.5%)	49.7 (12.5%)	17.7 (4.4%)	4.3 (1.1%)
VEGETABLES							
Leafy greens in soup (Ugu, etc.)	11	29	83	117	103	47	9
Garden Egg (raw or in sauce)	67	93	109	73	41	13	3
Cabbage / Salad	109	127	93	47	17	5	1
Average	62.3 (15.6%)	83.0 (20.8%)	95.0 (23.8%)	79.0 (19.8%)	53.7 (13.5%)	21.7 (5.4%)	4.3 (1.1%)
FRUITS							
Orange / Tangerine	31	63	113	101	61	23	7
Mango	73	109	103	67	33	11	3
Pineapple	89	113	107	59	23	7	1
Pawpaw	79	103	111	69	29	7	1
Banana	41	79	119	93	47	17	3
Apple	63	107	113	71	33	9	3
Native Pear (Ube)	67	103	111	73	31	11	3
Star Apple (Udara)	83	117	109	61	23	5	1
Watermelon	53	97	119	83	37	9	1
Average	64.3 (16.1%)	99.0 (24.8%)	111.7 (28.0%)	75.2 (18.8%)	35.2 (8.8%)	11.0 (2.8%)	2.6 (0.6%)
SNACKS (PROCESSED/FRIED)							
Biscuits / Cookies	13	33	79	103	97	53	21
Cake / Doughnuts	31	67	113	101	59	21	7
Meat Pie / Egg Roll / Buns	23	53	107	113	73	23	7
Chin Chin / Puff Puff	19	47	93	109	89	31	11
Average	21.5 (5.4%)	50.0 (12.5%)	98.0 (24.6%)	106.5 (26.7%)	79.5 (19.9%)	32.0 (8.0%)	11.5 (2.9%)
BEVERAGES							
Soft Drinks (Coke, Fanta, etc.)	17	39	93	107	83	43	17
Packaged Fruit Juice	43	89	117	89	47	11	3
Malt Drinks	37	79	119	103	49	9	3
Milk / Yoghurt	27	59	103	113	67	23	7
Zobo Drink	33	69	113	101	57	21	5
Water (Sachet or Bottled)	3	7	13	33	69	103	171
Average	26.7 (6.7%)	57.0 (14.3%)	93.0 (23.3%)	91.0 (22.8%)	62.0 (15.5%)	35.0 (8.8%)	34.3 (8.6%)

Source: Field Survey, 2026

Regarding meal-skipping practices, 27.3% of respondents reported never skipping breakfast, while 30.3% skipped breakfast one to two times per week, 23.3% skipped breakfast three to four times per week, and 19.0% skipped breakfast almost every day. Lunch and dinner were skipped less frequently, with 41.9% and 60.9% of respondents, respectively, reporting that they never skipped these meals. The most commonly reported reason for skipping breakfast was lack of time in the morning (28.3%), followed by not feeling hungry (21.8%). Approximately one-quarter of respondents (27.8%) consumed snacks three to four times per week, while 25.8% consumed snacks more than once daily (Table 2). The food frequency questionnaire showed that boiled rice (59.9%), garri (54.4%), and bread (49.4%) were the most frequently consumed starchy staples (≥ 5 times/week). Tomato stew was the most frequently consumed soup (57.9%), while banga stew was the least consumed, with 56.6% reporting never or rare consumption. Crayfish (72.4%) was the most frequently consumed animal-source protein, whereas beans (29.3%) were the most frequently consumed plant protein. Leafy vegetables were consumed at least five times weekly by 39.8% of respondents, while fruit consumption was generally low, with nearly half reporting never or rare consumption of pineapple (47.6%) and star apple (50.1%). Among beverages, sachet or

bottled water was the most frequently consumed (86.0%), whereas 35.8% consumed soft drinks at least five times per week (Table 3). Taste was reported as the most important factor influencing snack choice by 35.8% of respondents, followed by price (22.3%) and how filling the snack was (18.3%). Nearly half of the respondents (47.4%) perceived their body weight as being about the right weight, while 24.3% considered themselves a little overweight and 7.3% very overweight. In contrast, 15.3% perceived themselves as a little underweight and 5.8% as very underweight. Regarding weight-control practices during the previous month, 43.4% reported taking no action to control their weight, whereas 21.8% reported eating less food, 13.3% intentionally skipped meals, 10.3% avoided fatty or sugary foods, 9.3% increased physical activity, and 2.0% used diet pills, special teas, or other weight-loss products (Table 4). With respect to transportation to school, 45.9% of respondents used public transportation, 39.3% walked or rode a bicycle, and 14.8% travelled by private car or school bus. Regarding physical activity, 14.5% of respondents reported being physically active for at least 60 minutes on all seven days of the preceding week, whereas 16.8% reported no day of at least 60 minutes of physical activity. Daily recreational screen time was reported as three to four hours by 32.3% of respondents

Table 4: Nutritional perceptions and weight control behaviors

Variables	Frequency	Percentage (%)
Most Important Factor Choosing Snacks		
The taste	143	35.8
The price (how cheap it is)	89	22.3
How filling it is	73	18.3
If my friends are also having it	39	9.8
If it is healthy or nutritious	27	6.8
Availability (it's the main thing sold)	28	7.0
Description of Current Body Weight		
Very underweight	23	5.8
A little underweight	61	15.3
About the right weight	189	47.4
A little overweight	97	24.3
Very overweight	29	7.3
Weight Control Measures (Past Month)		
I have not done anything to control my weight	173	43.4
Tried to eat less food in general	87	21.8
Skipped meals on purpose	53	13.3
Avoided fatty or sugary foods and drinks	41	10.3
Increased my physical activity or exercise	37	9.3
Used diet pills, special teas, or other weight-loss products	8	2.0
Total	399	100.0

Source: Field Survey, 2026**Table 5:** Physical activity and sedentary behavior

Variables	Frequency	Percentage (%)
Mode of Transport to School		
I walk or ride a bicycle	157	39.3
I take public transport (bus, keke, okada)	183	45.9
I am dropped by a private car or school bus	59	14.8
Days Physically Active (60+ mins)		
0 days	67	16.8
1 day	43	10.8
2 days	59	14.8
3 days	71	17.8
4 days	47	11.8
5 days	33	8.3
6 days	21	5.3
7 days	58	14.5
Daily Screen Time (Non-School Work)		
Less than 1 hour	49	12.3
About 1-2 hours	113	28.3
About 3-4 hours	129	32.3
More than 4 hours	108	27.1
Total	399	100.0

Source: Field Survey, 2026**Table 6:** Association between Selected Sociodemographic Characteristics and Health Behaviors

Variables Tested	Chi-Square (χ^2)	Degrees of Freedom (df)	p-value	Interpretation
Father's education vs. breakfast skipping	20.58	18	0.301	Not significant
Sex vs. weight-control measures	5.75	5	0.331	Not significant

Note: $p < 0.05$ was considered statistically significant.

and more than four hours by 27.1%, while 28.3% reported one to two hours and 12.3% reported less than one hour per day (Table 5). The association between father's educational level and breakfast-skipping frequency was not statistically significant ($\chi^2 = 20.58$, $df = 18$, $p = 0.301$).

Similarly, there was no statistically significant association between sex and weight-control practices ($\chi^2 = 5.75$, $df = 5$, $p = 0.331$). These findings indicate that the variables examined were not significantly associated at the 5% level of significance (Table 6).

DISCUSSION

The present study assessed the dietary patterns, food consumption habits, perceived nutritional status, and lifestyle Behaviors of adolescents attending public and private secondary schools in Umuahia South Local Government Area, Abia State. The findings provide insight into the dietary practices and health-related Behaviors of school-going adolescents within the study area and were interpreted in relation to existing evidence from Nigeria and other settings. The discussion is presented according to the study objectives and research questions.

Research Question 1: What are the demographic characteristics of adolescents in secondary schools in Umuahia South Local Government Area, Abia State?

The study population consisted predominantly of adolescents aged 13–15 years, with a relatively balanced sex distribution and a high proportion of parents having attained at least secondary education. The age distribution reflects the typical composition of secondary school populations in Nigeria and is comparable with previous school-based studies among adolescents (Olatona et al., 2023). The relatively high educational attainment of parents may be expected to improve awareness of healthy nutrition and lifestyle practices. However, previous studies have shown that parental education alone does not necessarily translate into healthier dietary Behaviors among adolescents, as food choices are also influenced by household income, food availability, peer influence, convenience, and the school food environment (Samad et al., 2024; Hähnel et al., 2025). This suggests that improving adolescent nutrition requires interventions beyond parental educational attainment alone.

Research Question 2: What are the dietary patterns and food consumption habits of adolescents in secondary schools in Umuahia South Local Government Area, Abia State?

The findings demonstrate that breakfast skipping was common among the respondents, with lack of time and poor morning appetite being the most frequently reported reasons. Breakfast skipping among adolescents has been widely reported in previous studies and is associated with unhealthy dietary Behaviors and poorer overall diet quality (Hovdenak et al., 2024). The present findings therefore reinforce existing evidence that irregular meal consumption remains an important dietary concern among adolescents. Food consumption patterns showed frequent consumption of starchy staples such as rice, garri, and bread, while fruits and vegetables were consumed less frequently. Crayfish was the most frequently consumed animal-source protein, whereas beans represented the

most commonly consumed plant protein. Processed snacks and sugar-sweetened beverages were also consumed regularly by a considerable proportion of respondents. These findings are consistent with previous Nigerian studies reporting diets dominated by cereals and starchy foods, inadequate consumption of fruits and vegetables, and increasing consumption of processed foods among adolescents (Abubakar et al., 2024; Olatona et al., 2023). Such dietary patterns may reduce dietary diversity and compromise nutrient adequacy if sustained over time. The absence of a statistically significant association between father's educational level and breakfast-skipping Behavior suggests that breakfast consumption may not be determined solely by parental educational attainment. Previous studies have similarly reported that breakfast skipping is influenced by multiple factors, including time constraints, appetite, household routines, and the school environment (Hovdenak et al., 2024). Consequently, interventions aimed at promoting regular breakfast consumption should target both households and schools rather than focusing exclusively on socioeconomic characteristics.

Research Question 3: What are the nutritional perceptions and weight-control Behaviors of adolescents in secondary schools in Umuahia South Local Government Area, Abia State?

Nearly half of the respondents perceived their body weight as being about the right weight, although approximately one-third perceived themselves as overweight or very overweight. In addition, many respondents reported engaging in weight-control practices such as reducing food intake, intentionally skipping meals, avoiding fatty foods, and increasing physical activity. These findings indicate that body weight and body image are important concerns among adolescents within the study population. Furthermore, respondents reported relatively high levels of recreational screen time, while only a small proportion achieved the recommended 60 minutes of daily physical activity throughout the week. Similar Behavioral patterns have been reported in previous studies, which found that prolonged sedentary Behavior and inadequate physical activity frequently coexist with unhealthy dietary practices among adolescents (Mandic et al., 2024; Samad et al., 2024).

These Behaviors are recognized risk factors for poor health and support the need for interventions that simultaneously promote healthy eating and active lifestyles. The lack of a statistically significant association between sex and weight-control practices suggests that weight-management Behaviors were reported by both male and female adolescents. This finding supports previous evidence indicating that concerns about body weight and healthy eating are increasingly relevant to adolescents regardless of sex (Samad et al., 2024).

Research Question 4: What is the prevalence of undernutrition and overnutrition among adolescents in secondary schools in Umuahia South Local Government Area, Abia State?

The present study did not objectively determine the prevalence of undernutrition or overnutrition using anthropometric measurements such as BMI-for-age. Instead, respondents reported their perceived body weight, with a greater proportion perceiving themselves as overweight or very overweight than underweight. Because these findings are based on self-perception rather than objective anthropometric assessment, they should be interpreted cautiously and should not be regarded as estimates of the true prevalence of malnutrition.

Nevertheless, previous Nigerian studies have documented the coexistence of undernutrition and overweight among adolescents, reflecting the ongoing nutrition transition in the country (Abubakar et al., 2024; Gabriel et al., 2024). The findings of the present study suggest that perceptions of body weight may warrant further investigation using standardized anthropometric measurements to establish the actual prevalence of undernutrition and overnutrition among adolescents in the study area.

Limitations of the Study

This study has some limitations that should be considered when interpreting the findings. First, the cross-sectional study design limits the ability to establish causal relationships between dietary Behaviors and the factors examined. Second, dietary habits, meal-skipping practices, physical activity, and body weight perceptions were based on self-reported information and may therefore be subject to recall and social desirability biases. Third, the study was conducted among adolescents attending selected secondary schools in Umuahia South Local Government Area, which may limit the generalizability of the findings to adolescents in other settings. Finally, nutritional status was assessed using respondents' self-perceived body weight rather than standardized anthropometric measurements; therefore, the findings relating to body weight should be interpreted with caution and should not be considered estimates of the true prevalence of undernutrition or overnutrition.

Conclusion

This study demonstrated that meal skipping, particularly breakfast skipping, frequent consumption of starchy foods and processed snacks, low fruit and vegetable intake, prolonged recreational screen time, and suboptimal physical activity were common among adolescents attending secondary schools in Umuahia South Local Government Area. Although nearly half of the respondents perceived their body weight as normal, a

considerable proportion reported perceptions of being either underweight or overweight and engaged in various weight-control practices. No statistically significant associations were observed between father's educational level and breakfast-skipping Behavior or between sex and weight-control practices. Overall, the findings highlight the need for school- and community-based interventions that promote healthy dietary practices, regular physical activity, and appropriate nutrition education among adolescents.

Recommendations

1. The Abia State Ministry of Education should strengthen school-based nutrition education programs that promote healthy dietary practices, regular breakfast consumption, and increased fruit and vegetable intake among adolescents.
2. School authorities should establish healthy school food policies by increasing the availability of affordable nutritious foods while limiting the routine sale of energy-dense snacks and sugar-sweetened beverages within school premises.
3. Parents and caregivers should encourage regular family meals, support healthy breakfast habits, and monitor adolescents' recreational screen time and dietary practices at home.
4. Schools should strengthen physical education programs and provide opportunities for regular participation in physical activity to encourage active lifestyles among adolescents.
5. Future studies should employ standardized anthropometric measurements, including BMI-for-age based on the World Health Organization growth reference, to determine the prevalence of undernutrition and overnutrition and identify their associated factors among adolescents in Umuahia South Local Government Area.

Conflict of Interest

The authors declare that there are no conflicts of interest regarding the publication of this study. The research received no external funding, and the authors have no financial or personal relationships that could have influenced the conduct or reporting of the study.

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