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Research Article

Lifestyle and Nutritional Determinants of Anaemia Among Young Adults in Abia State: An Analytical Evaluation

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Abstract

Background: Anaemia remains a major public health concern in low- and middle-income countries, particularly among young adults whose dietary habits and lifestyles are rapidly changing. In southeastern Nigeria, limited data exist on how everyday behaviors and nutritional patterns shape anaemia risk in this age group. This study evaluated the prevalence of anaemia and examined lifestyle and nutritional determinants among young adults in Abia State, Nigeria.

Methods: A cross-sectional study was conducted among 348 young adults aged 18–35 years who were permanent residents of Umuahia. Participants were selected using a multistage sampling technique. Data were collected with a structured interviewer-administered questionnaire covering sociodemographics, lifestyle behaviors, dietary intake using a food frequency questionnaire, and medical history. Anthropometric measurements were taken, and venous blood samples were analyzed for haemoglobin concentration using an automated hematology analyzer. Anaemia was defined using WHO cutoffs. Data were analyzed with SPSS version 25 using descriptive statistics, chi-square tests, correlation analysis, and multivariable logistic regression. Statistical significance was set at $p < 0.05$.

Results: The mean age of participants was 25.74 ± 4.89 years, with females constituting 54.9%. The overall prevalence of anaemia was 38.8%, with 45.2% of cases classified as mild, 38.5% as moderate, and 16.3% as severe. Significant associations were observed between anaemia and sex, meal skipping, physical activity level, citrus fruit intake, and consumption of tea or coffee with meals. Haemoglobin levels showed positive correlations with BMI, vegetable intake, physical activity, and sleep duration. In multivariable analysis, being female (AOR = 1.88), frequently skipping meals (AOR = 2.41), low physical activity (AOR = 1.67), low vegetable intake (AOR = 2.09), and consuming tea or coffee with meals (AOR = 1.54) independently predicted anaemia.

Conclusion: Anaemia is highly prevalent among young adults in Umuahia and is strongly linked to modifiable lifestyle and dietary behaviors. Female sex, poor meal patterns, low physical activity, inadequate vegetable intake, and practices that inhibit iron absorption significantly increase anaemia risk. Interventions that promote regular balanced meals, increased intake of iron-rich and iron-enhancing foods, and healthier lifestyle practices are essential to reduce the burden of anaemia in this population.

Kew Words: anaemia; young adults; lifestyle factors; nutritional risk; iron intake

Introduction

Anaemia remains a profound global health concern that affects people across all ages, but its impact on young adults is often under-recognized [1].

Defined by the World Health Organization (WHO) as a condition in which haemoglobin concentration falls below the level necessary to meet physiological needs, anaemia reflects an underlying imbalance between red blood cell production and destruction or loss of blood [2].

While multiple factors contribute to its development, nutrient deficiencies, especially iron deficiency, stand out as the most common causes worldwide. Inadequate intake of iron and other micronutrients such as folate, vitamin B12, and vitamin A directly limits haemoglobin synthesis, leading to weakened oxygen transport capacity in the blood and impaired physical function. Infections and chronic diseases also play a significant role by interfering with nutrient absorption and red blood cell production, further exacerbating the condition [3].

The burden of anaemia in sub-Saharan Africa is particularly high due to the interplay of nutritional, infectious, socioeconomic, and environmental determinants. In Nigeria, a country with one of the largest and youngest populations on the continent, anaemia is a pressing public health challenge. National data indicate alarmingly high prevalence rates among children and women; the burden across other age groups, including adolescents and young adults, is less well documented but remains substantial. Approximately half of anaemia cases globally are attributed to iron deficiency, but other factors, including chronic infections such as malaria and intestinal parasites, hereditary conditions like haemoglobinopathies, and deficiencies in other vitamins and minerals, play important roles in shaping risk profiles [4].

Young adults occupy a unique life stage marked by physiological growth, increasing autonomy in lifestyle choices, and evolving dietary patterns. These characteristics make this group especially vulnerable to anaemia when their nutritional needs are not met. Studies conducted in university and community settings outside Nigeria demonstrate that poor dietary habits, irregular meal patterns, and low intake of iron-rich foods such as meat, eggs, and dark green leafy vegetables are consistently linked to higher anaemia risk among young adults. Frequent consumption of nutrient-poor "junk" foods, skipping breakfast, and inadequate dietary diversity reduce overall micronutrient intake and lower the availability of bioavailable iron and other essential nutrients required for red blood cell production [5].

Lifestyle behaviors further compound nutritional risks. Tobacco smoking, excessive alcohol consumption, and sedentary behavior have been associated with anaemia-related biomarkers in adult populations, reflecting how broader lifestyle patterns influence iron metabolism and haemoglobin levels. Young adults who adopt unhealthy lifestyles may therefore experience a cumulative risk that goes beyond simple dietary inadequacies, affecting both their short-term well-being and long-term health [5].

Within the Nigerian context, although most research has focused on children, pregnant women, and women of reproductive age, such findings highlight probable parallels in risk factors among young adults [6].

Nutritional insufficiencies driven by low dietary diversity, limited access to micronutrient-rich foods, and socioeconomic constraints prevalent in many regions of Nigeria are all likely to influence anaemia risk among youth transitioning into adulthood. Evidence from neighbouring countries and from broader reviews of anaemia risk factors underscores the importance of identifying how local dietary patterns and lifestyle behaviors shape anaemia prevalence in this demographic [7].

In Abia State, located in southeastern Nigeria, the cultural, social, and economic environments shape food practices and lifestyle behaviors among young adults [8].

Urbanization, shifts toward energy-dense, nutrient-poor diets, and varied lifestyle choices create a context in which nutritional and lifestyle risk factors may converge, increasing susceptibility to anaemia. However, there is limited localized research that examines how these determinants interact specifically among young adults in this setting. Understanding these dynamics is crucial given that young adults represent the workforce and future parents whose health influences economic productivity, cognitive performance, and intergenerational wellbeing. This study, therefore, aims to fill gaps in knowledge by systematically evaluating the lifestyle and nutritional risk factors associated with anaemia among young adults in Abia State. It focuses on capturing dietary patterns, meal frequency, consumption of iron-rich foods, and lifestyle behaviors including physical activity and substance use, while considering socio-demographic variables that shape health outcomes in this group. Such insights are essential for designing targeted public health strategies and nutritional interventions that improve haemoglobin status, strengthen resilience against anaemia, and enhance overall health among young adults in Nigeria.

Materials And Methods

Study Design

This research was conducted using a cross-sectional study design to assess lifestyle and nutritional factors associated with anaemia among young adults. The cross-sectional approach allowed us to measure exposure (risk factors) and outcome (anaemia status) at a single point in time, providing a snapshot of the prevalence of anaemia and how it relates to dietary and lifestyle behaviors in the study population.

Study Area

The study took place in Umuahia, the capital city of Abia State, Nigeria. Umuahia is predominantly urban and semi-urban, with a diverse population that includes students, workers, and young adults engaged in various occupations. The city offers a representative setting for examining lifestyle and dietary patterns among young adults in a typical southeastern Nigerian environment.

Study Population

The target population consisted of young adults aged 18 to 35 years who were permanent residents of Umuahia. Eligible participants included both males and females who consented to participate, lived in the area for at least six months, and were available during the data collection period. Individuals with known chronic diseases (like sickle cell disease, chronic kidney disease, or diagnosed cancer) or those currently on treatment for anaemia were excluded to reduce confounding from underlying medical conditions.

Sample Size Determination

The minimum sample size was calculated using the Cochran's formula for cross-sectional studies according to the methodology outlined by Onyemereze et al. [9]:

$$n = \frac{\mathbf{Z^2(Pq)}}{\mathbf{e^2}}$$

The formula components are defined as follows:

- *n* represents the minimum required sample size.

- *Z* is set at 1.96, corresponding to a 95% confidence level.
- *P* denotes the prevalence of anaemia in adults in Nigeria.
- *e* signifies the allowable margin of error, fixed at 5% (0.05).
- q = 1 - p

A recent study conducted by Azinge et al. [4] reports the prevalence of anaemia in adults in Nigeria as 28.9%

P = 28.9% = 0.289

q = 1 – 0.289

= 0.711

$$n = \frac{(1.96)^2(0.289 \times 0.711)}{(0.05)^2}$$

$$n = \frac{3.8416 \times (0.205)}{0.0025}$$

$$n = \frac{0.7894}{0.0025} = 315.75$$

Although the initially calculated minimum sample size was 316, it was increased to 348 to accommodate an anticipated 10% rate of non-response.

Sampling Procedure

A multistage sampling technique was used to recruit participants:

1. **Stage One:** Umuahia was stratified into major residential zones.
2. **Stage Two:** From each zone, communities were selected randomly.
3. **Stage Three:** Within communities, households were selected by systematic sampling.
4. **Stage Four:** From households, eligible young adults were identified and invited to participate, ensuring a balanced representation of gender and age groups.

Data Collection Instruments

Data were collected using a structured interviewer-administered questionnaire developed specifically for this study. The questionnaire had four sections:

- **Section A:** Socio-demographic information (age, sex, education, occupation).
- **Section B:** Lifestyle behaviors (smoking, alcohol consumption, physical activity, sleep patterns).
- **Section C:** Dietary intake and nutritional habits (frequency of consumption of iron-rich foods, fruits, vegetables, tea/coffee, use of supplements).
- **Section D:** Medical and menstrual history (for females), including self-reported symptoms of anaemia.

The questionnaire was pretested on 20 young adults in a similar setting outside the main study area to check clarity, relevance, and reliability. Necessary adjustments were made before the full data collection.

Assessment of Nutritional Intake

Dietary intake was assessed using a semi-quantitative food frequency questionnaire (FFQ). Participants were asked how often they consumed key food groups over the previous month, particularly foods high in iron (e.g., red meat, leafy greens, legumes) and foods known to inhibit iron absorption (e.g., tea, coffee). Responses were categorized into daily, weekly, occasionally, or never. A nutritionist reviewed the FFQ responses to classify participants into adequate or inadequate dietary patterns relative to recommended dietary guidelines for iron intake.

Foods were categorized into:

- Iron-rich foods (red meat, liver, green leafy vegetables, legumes).
- Foods that enhance iron absorption (citrus fruits, tomatoes).
- Foods that inhibit iron absorption (tea, coffee, high-phytate grains).

Portion sizes were estimated using local measures and food models to improve accuracy.

Anthropometric Measurements

Anthropometric data were collected to assess nutritional status:

- Height was measured with a portable stadiometer to the nearest 0.1 centimetre.
- Weight was measured using a calibrated digital scale to the nearest 0.1 kilogram.
- Body mass index (BMI) was calculated as weight in kilograms divided by height in meters squared (kg/m^2).

Measurements were taken following standard procedures with participants barefoot and wearing light clothing.

Assessment of Lifestyle Factors

Lifestyle behaviors were assessed using standardized questions adapted from validated instruments:

- **Physical Activity:** Measured using the short form of the International Physical Activity Questionnaire (IPAQ). Responses were grouped into low, moderate, or high activity levels.
- **Alcohol Use:** Participants reported frequency and quantity of alcohol consumption.
- **Smoking:** Participants were classified as current smokers, former smokers, or never smokers.
- **Sleep Patterns:** Average hours of sleep per night were recorded to explore associations with anaemia.

Measurement of Haemoglobin Levels

A certified phlebotomist collected venous blood samples (5 mL) from participants into ethylenediaminetetraacetic acid (EDTA) tubes. Samples were transported under cold chain conditions to a certified laboratory. Haemoglobin concentration was measured using an automated hematology analyzer calibrated daily according to the manufacturer's instructions.Anaemia was defined based on World Health Organization criteria: haemoglobin <13.0 g/dL for males and <12.0 g/dL for females. Severity levels were further categorized as mild, moderate, or severe following standard cutoff points.

Data Quality Control

To ensure quality and consistency, data collectors received two days of training on the questionnaire and ethical conduct. The questionnaire was pretested. Daily review meetings were held to check for completeness and accuracy. The hemoglobinometer was calibrated daily before use.

Ethical Considerations

Written informed consent was obtained from every participant. Confidentiality was maintained by assigning unique codes instead of using personal identifiers. Participants found to be anaemic were referred to a local health facility for appropriate care.

Data Management and Analysis

Collected data were entered into SPSS version 25 for analysis. Descriptive statistics (mean, standard deviation, frequencies, and percentages) were used to describe participant characteristics, nutritional intake, and lifestyle behaviors. Associations between anaemia status and risk factors were examined using: Chi-square tests for categorical variables, Independent t-tests for continuous variables, Logistic regression analysis to identify predictors of anaemia, adjusting for potential confounders. Statistical significance was set at $p < 0.05$.

Results

A total of 348 respondents participated in the study. Most were aged 23 to 27 years (34.77%), followed by those aged 18 to 22 years (27.59%). Females slightly outnumbered males (54.89% vs 45.11%), and the majority were single (71.55%). Most respondents had a tertiary education (64.08%), and 40.52% were employed, while 37.93% were students (Table 1).

Regarding lifestyle behaviours, three-quarters had never smoked (75.00%), about half reported alcohol consumption (49.71%), and many engaged in moderate physical activity (42.24%). Nearly half slept 6 to 8 hours per night (47.99%), and meal skipping was common, with 48.56% reporting they sometimes skipped meals (Table 2). In terms of dietary intake, fish and seafood were the most frequently consumed iron-rich foods (53.74%), followed by green leafy vegetables (49.14%), beans and legumes (44.83%), and eggs (40.80%). Daily intake of red meat and organ meat was lower at 28.16% and 11.78%, respectively (Table 3). For foods affecting iron absorption, 57.76% consumed tomatoes daily, 45.69% consumed citrus fruits daily, while 36.49% reported taking tea or coffee with meals. About one quarter used supplements (26.72%) (Table 4).

More than half of the respondents reported frequent tiredness (52.59%), while 41.95% experienced frequent headaches, and 37.07% reported dizziness or light-headedness. Paleness was noticed by 31.90% of participants (Table 5). The mean age of respondents was 25.74 ± 4.89 years, with a mean BMI of 22.64 ± 3.91 kg/m². The overall mean haemoglobin level was 12.41 ± 1.67 g/dL, with males having a higher mean value than females (Table 6). Based on WHO criteria, 38.79% of the respondents were anaemic, while 61.21% were non-anaemic (Figure 1). Among those with anaemia, 45.19% had mild anaemia, 38.52% had moderate anaemia, and 16.30% had severe anaemia (Figure 2).

Significant associations were observed between anaemia status and sex, meal skipping, physical activity level, citrus fruit intake, and tea or coffee taken with meals ($p < 0.05$). Alcohol consumption was not significantly associated with anaemia (Table 7). Haemoglobin level showed positive correlations with BMI, vegetable intake, physical activity, and sleep duration (Table 8).

In the logistic regression model, female sex, frequent meal skipping, low physical activity, low vegetable intake, and taking tea or coffee with meals were significant predictors of anaemia. Female respondents had almost twice the odds of being anaemic compared with males, while those who often skipped meals or had low vegetable intake had more than double the odds of anaemia (Table 9).

Variable	Frequency (n = 348)	Percentage (%)
Age Group (years)		
18–22	96	27.59
23–27	121	34.77
28–32	87	25.00
33–35	44	12.64
Sex		
Male	157	45.11
Female	191	54.89
Marital Status		
Single	249	71.55
Married	84	24.14
Separated/Divorced/Widowed	15	4.31
Education Level		
Primary	21	6.03
Secondary	104	29.89
Tertiary	223	64.08
Employment Status		
Student	132	37.93
Employed (full/part)	141	40.52
Self-employed	51	14.66
Unemployed	24	6.90

Table 1: Socio-Demographic Characteristics of Respondents

Variable	Frequency (n = 348)	Percentage (%)
Smoking Status		
Current smoker	49	14.08
Former smoker	38	10.92
Never smoked	261	75.00
Alcohol Consumption		

Yes	173	49.71
No	175	50.29
Physical Activity (IPAQ)		
Low	109	31.32
Moderate	147	42.24
High	92	26.44
Sleep Duration		
< 6 hours	121	34.77
6–8 hours	167	47.99
> 8 hours	60	17.24
Meal Skipping		
Never	102	29.31
Sometimes	169	48.56
Often	77	22.13

Table 2: Lifestyle Behaviours of Respondents

Food Item (Daily Consumption)	Frequency (n)	Percentage (%)
Red meat	98	28.16
Liver/organ meat	41	11.78
Fish/seafood	187	53.74
Eggs	142	40.80
Beans/legumes	156	44.83
Green leafy vegetables	171	49.14

Table 3: Dietary Intake (Iron-Rich Foods – FFQ)

Variable	Frequency (n = 348)	Percentage (%)
Citrus fruits (Daily)	159	45.69
Tomatoes (Daily)	201	57.76
Tea/Coffee with Meals	127	36.49
High-phytate foods (Daily)	139	39.94
Supplement Use (Any)	93	26.72

Table 4: Consumption of Foods That Enhance/Inhibit Iron Absorption

Symptom	Frequency (n = 348)	Percentage (%)
Frequent tiredness	183	52.59
Dizziness/light-headedness	129	37.07
Shortness of breath	98	28.16
Frequent headaches	146	41.95
Paleness noticed	111	31.90

Table 5: Self-Reported Anaemia-Related Symptoms.

Variable	Mean ± SD
Age (years)	25.74 ± 4.89
Weight (kg)	63.82 ± 11.47
Height (m)	1.68 ± 0.09
BMI (kg/m²)	22.64 ± 3.91
Male Haemoglobin (g/dL)	**13.02 ± 1.54**
Female Haemoglobin (g/dL)	**11.89 ± 1.63**
Overall Haemoglobin (g/dL)	**12.41 ± 1.67**

Table 6: Anthropometric and Clinical Characteristics (Mean ± SD)

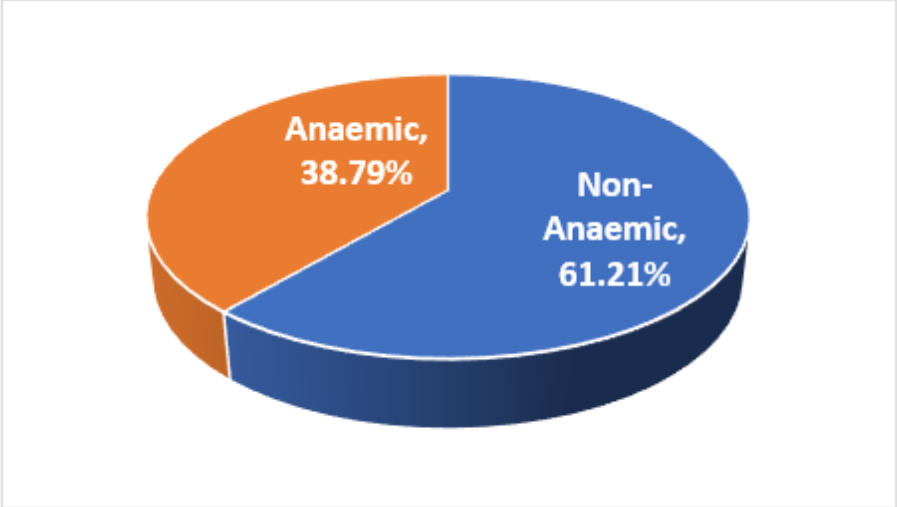

Figure 1: Prevalence of Anaemia

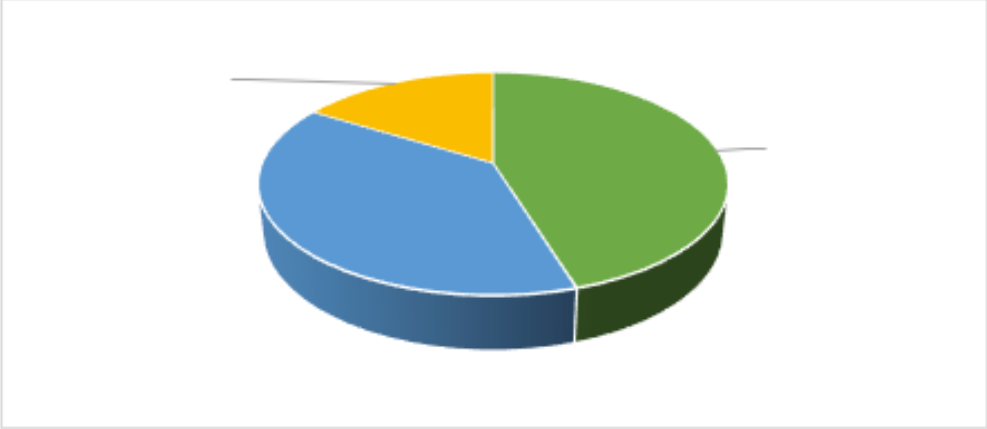

Figure 2: Severity of Anaemia

Variable	χ^2	df	p-value
Sex vs Anaemia	9.82	1	0.002
Meal skipping vs Anaemia	14.67	2	0.001
Physical activity vs Anaemia	7.94	2	0.019
Citrus fruit intake vs Anaemia	11.21	1	0.001
Tea/coffee with meals vs Anaemia	6.87	1	0.009
Alcohol consumption vs Anaemia	2.31	1	0.128

p-values < 0.05 are statistically significant

Table 7: Association Between Anaemia and Selected Risk Factors

Variables	Hb Level	BMI	Veg Intake	Physical Activity	Sleep Hours
Hb Level	1.000	0.231**	0.314**	0.219**	0.147*
BMI	0.231**	1.000	0.178*	0.201*	0.092
Vegetable Intake	0.314**	0.178*	1.000	0.166*	0.118
Physical Activity	0.219**	0.201*	0.166*	1.000	0.131*
Sleep Hours	0.147*	0.092	0.118	0.131*	1.000

* p < 0.05 ** p < 0.01

Table 8: Correlation Matrix of Key Continuous Variables

Predictor	AOR	95% CI	p-value
Female sex	1.88	1.22–2.91	0.004
Skipping meals often	2.41	1.49–3.89	<0.001
Low physical activity	1.67	1.08–2.58	0.021

Low vegetable intake	2.09	1.33–3.28	0.002
Tea/coffee with meals	1.54	1.01–2.37	0.047

p-values < 0.05 are statistically significant

Table 9: Logistic Regression Predicting Anaemia

Discussion

Anaemia remains a major public health concern among young adults in Nigeria, with lifestyle and dietary practices increasingly influencing nutritional health outcomes. Understanding modifiable risk factors within this age group is essential for developing effective prevention strategies. In this study, we explored how lifestyle and nutritional behaviours contribute to anaemia among young adults in Abia State, Nigeria. Our findings revealed a substantial proportion of anaemia in this population. The overall prevalence of anaemia was nearly 39%, indicating that anaemia remains a significant public health challenge among young adults even outside the more commonly studied groups of children and pregnant women. This aligns with the global understanding that anaemia remains widespread in low- and middle-income settings, where nutritional deficiencies and lifestyle factors converge to influence iron status and haemoglobin levels [2].

Regarding socio-demographic characteristics, our sample was well-balanced by sex and dominated by young adults with tertiary education. Interestingly, female sex was significantly associated with higher odds of anaemia, which echoes findings in other populations where women, especially of reproductive age, are more prone to lower haemoglobin levels due to physiological factors such as menstrual blood loss combined with nutritional gaps. A study among Nigerian adults also found higher anaemia prevalence among females and younger age groups, underscoring the interplay between sex and nutritional status [4].

One of the strongest associations in this study was with biological sex. Female participants had significantly higher odds of being anaemic compared with males. This observation is consistent with other research suggesting that women of reproductive age often face a greater risk of iron deficiency, partly due to menstrual blood loss and increased physiological demands for iron. Similar sex disparities have been noted in studies from India and other low- and middle-income contexts where female sex was linked with a higher prevalence of anaemia compared with males [10].

The analysis of lifestyle behaviours in this study demonstrated that meal skipping, particularly frequent meal omission, was significantly linked to anaemia. This is consistent with several prior studies showing that irregular meal patterns or skipping breakfast increases the risk of lower haemoglobin status among students and young adults. For example, research among adolescents in Indonesia linked skipping breakfast with higher rates of anaemia, underscoring how habitual meal omission compromises essential iron and other micronutrient intake [11]. Similarly, a study among undergraduate students found a strong association between breakfast skipping and a higher likelihood of anaemia, likely reflecting reduced overall nutrient and iron intake when regular meals are missed [12].

Physical activity level emerged as another important lifestyle factor in this study. Participants with low levels of physical activity were more likely to be anaemic. While the relationship between activity and anaemia is complex, other research has indicated that sedentary lifestyles and low energy expenditure can coincide with poor dietary practices and reduced micronutrient intake, further increasing anaemia risk. National and population studies have likewise underscored that limited physical activity often clusters with inadequate diet and poor health outcomes, including anaemia [5]. Though less frequently reported in anaemia research, some broader reviews on anaemia-related dietary patterns and lifestyle factors have highlighted that sedentary lifestyles coupled with poor nutrition are common features among anaemic populations, emphasizing the importance of regular activity alongside nutritional adequacy in maintaining haemoglobin levels [11].

Examining dietary intake, participants in this study varied in their consumption of iron-rich foods. Fish, green leafy vegetables, beans, and eggs featured more commonly in daily diets, yet red meat and liver consumption remained modest, which is notable given that heme iron from animal sources is typically more bioavailable and protective against iron deficiency. Studies have shown that dietary patterns with consistent intake of iron-rich foods such as meat and eggs are associated with better hemoglobin and iron status. For example, a cross-sectional study found that diets characterized by higher intakes of animal proteins were protective against anemia among children in China [13]. Furthermore, systematic reviews on Nigerian adolescents pointed to widespread inadequate intake of key nutrients, including iron and protein, underpinning the nutritional vulnerability that contributes to anemia risk [14].

Another key dietary finding in our study was the impact of foods that enhance or inhibit iron absorption. Daily citrus fruit and tomato intake, both of which enhance non-heme iron absorption via vitamin C, were comparatively common, and this likely plays a positive role in facilitating iron uptake. However, a considerable share of respondents reported drinking tea or coffee with meals. This practice has been shown in other contexts to impair iron absorption because polyphenols and tannins bind iron and reduce its bioavailability, which can exacerbate iron deficiency and contribute to anemia. For instance, work published in *Diet Factor* highlighted that regular tea or coffee consumption with meals is a significant risk factor for iron deficiency among students [15]. Scientific studies have also documented that compounds in tea, such as polyphenols and tannins, can bind non-heme iron and hinder its absorption when consumed concurrently with meals. Controlled feeding research has shown that spacing out tea intake to at least an hour after an iron-containing meal can reduce its inhibitory effect on iron absorption, highlighting the importance of timing in dietary habits [16].

Alcohol consumption did not show a significant association with anaemia in our sample. This finding mirrors some population studies where alcohol use does not emerge as a consistent independent predictor of anaemia, particularly in younger, generally healthy adult populations. The influence of alcohol on iron status may depend more heavily on quantity and pattern of consumption, which might not have been captured fully in our cross-sectional design. The self-reported symptoms in our respondents, such as tiredness, dizziness, headaches, and paleness, mirror the clinical manifestations of anaemia described in the broader literature. The World Health Organization notes that fatigue and reduced physical performance are hallmark symptoms of anaemia due to insufficient oxygen delivery to tissues [2].

Anthropometric measures indicated that our population's average BMI fell within normal ranges, and correlation analyses pointed to positive relationships between haemoglobin levels and factors such as vegetable

intake, physical activity, and BMI. These correlations align with existing evidence suggesting that overall good nutritional status and active lifestyles are supportive of better haemoglobin outcomes [17,18], though there is variability based on context and population. Importantly, the logistic regression model in this present study identified several modifiable risk factors, including frequent meal skipping, low physical activity, low vegetable intake, and tea or coffee with meals, all significantly predicting higher odds of anaemia. These predictors emphasize the multi-faceted nature of anaemia risk. Comparable cross-sectional studies among medical and undergraduate students in other settings have similarly found that nutritional and lifestyle habits are powerful determinants of anaemia prevalence, reinforcing our interpretations and the need for targeted interventions [19].

Conclusion

The findings of this study revealed that anaemia among young adults in Abia State cannot be attributed to a single factor. Rather, it reflects a complex interplay among diet quality, lifestyle behaviours, and socio-demographic factors. Integrating our results with external research illustrates that addressing anaemia in young populations requires holistic public health strategies that promote regular nutritious meals, discourage inhibitors of iron absorption at mealtimes, and encourage active lifestyles along with broader nutrition education to prevent iron and other micronutrient deficiencies. Future interventions should prioritize dietary diversification, behavioural modification, and community-based health promotion to mitigate the identified risk factors and improve haemoglobin status across this demographic.

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