

NUTRITIONAL KNOWLEDGE AMONG SCHOOL ADOLESCENTS IN ILORIN, KWARA STATE, NIGERIA

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Abstract

Adolescence is a vital stage of growth that requires adequate nutritional knowledge to support healthy development and prevent diet-related health issues. This study assessed the level of nutritional knowledge among school adolescents in Ilorin West Local Government Area (LGA), Kwara State, Nigeria. The objectives were to determine whether nutritional knowledge differs based on (i) school type (ii) gender. A descriptive survey research design was employed. The study population consisted of 44,987 school adolescents from both public and private secondary schools in Ilorin West LGA. A sample of 413 students was selected through multistage sampling techniques involving stratified, proportionate, random, and convenience sampling. A validated, researcher-designed questionnaire was used to collect data. Reliability was confirmed using the split-half method. Data was analyzed using inferential statistics of t-test at 0.05 level of significance. Findings revealed that there was a significant difference in nutritional knowledge based on school type ($t = 27.23, p < 0.001$), with private school students scoring higher than those in public schools; there was no significant difference in nutritional knowledge based on gender ($t = 1.12, p > 0.05$). The study concluded that while adolescents possess a fair understanding of basic nutrition, disparities exist based on school type. It recommended that targeted nutrition education be strengthened, especially in public schools, and that school curricula integrate practical nutrition education to support informed dietary choices among adolescents.

Introduction

Adolescence represents a critical phase of growth and development that places high demands on nutritional intake to support physical, cognitive, and psychosocial maturation. Optimal nutrition during this stage is essential for achieving full developmental potential and preventing both immediate and long-term health complications (World Health Organization [WHO], 2023). However, in many low- and middle-income countries, including Nigeria, adolescents are increasingly exposed to unhealthy dietary patterns, driven by poor nutritional knowledge, environmental factors, and limited access to nutrition education (UNICEF, 2022; Ogunba et al., 2022). As adolescents begin to make more independent food choices, their level of nutritional literacy becomes a significant determinant of their dietary habits and overall well-being (González-Rábago et al., 2021).

Nutritional knowledge refers to an individual's understanding of food, nutrients, and the relationship between diet and health. It includes awareness of dietary guidelines, food groups, nutrient sources, and the consequences of poor nutrition (AIBlooshi et al., 2021). Among adolescents, this knowledge is essential for establishing healthy dietary behaviors during a life stage marked by increased autonomy and vulnerability to peer and media influence (González-Rábago et al., 2021). Adolescents with sound nutritional knowledge are more likely to engage in healthier eating patterns, such as increased fruit and vegetable intake

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and reduced consumption of sugary and processed foods (Nguyen et al., 2021; Ogunba et al., 2022).

Studies in Nigeria have revealed considerable disparities in adolescents' nutritional knowledge across different socio-economic contexts and school types (Adeomi et al., 2020; Nnamani et al., 2021). Adeomi et al., (2020) and Nnamani et al., (2021) also linked the disparities in nutritional knowledge to factors such as school type, parental education, socioeconomic background, and gender. Sadegholvad et al., (2020) further reported that while some adolescents demonstrated some levels of awareness of nutrition knowledge, many lack the practical skills to apply this knowledge in real-life food choices.

School type whether public or private serves as a proxy indicator for variations in educational quality, school environment, and socioeconomic status. In Nigeria, private schools typically have more resources, smaller class sizes, and structured curricula that integrate health and nutrition education more effectively than public schools (Nnamani et al., 2021; Odeyemi et al., 2022). Consequently, students in private schools are often better informed about nutrition and are more likely to practice healthy eating habits.

Several studies have established a significant difference in nutritional knowledge and dietary behaviour based on school type. For instance, Adeomi et al. (2020) found that private school students scored significantly higher in nutrition-related assessments compared to their peers in public institutions. Similarly, Nguyen et al. (2021) observed that adolescents attending better-resourced schools in Vietnam exhibited healthier dietary patterns, highlighting the global relevance of school context as a determinant of adolescent nutrition. In the Nigeria precisely, studies have revealed that students in private schools often have higher nutritional knowledge due to better educational resources and structured health programs, whereas public school students may face challenges stemming from underfunded health education systems (Onabanjo et al., 2019; Odeyemi et al., 2022). Despite this growing body of evidence, there remains a gap in localized studies examining the nutritional knowledge of adolescents in Ilorin West LGA, a region undergoing rapid urbanization and dietary transition.

Gender also plays a complex role in shaping adolescents' nutritional attitudes, knowledge, and behaviors. While some studies report no significant gender differences in nutritional knowledge (Ibrahim et al. 2019; Akoto & Kumah, 2020; Tariq et al., 2021,) inversely suggested that females often demonstrate higher nutrition awareness, possibly due to greater interest in body image, health, and wellness. Culturally influenced expectations and roles may also contribute to gender-specific food preferences and consumption patterns. Olumakaiye and Ajayi (2019) found that Nigerian female adolescents were more likely to consume fruits and vegetables and less likely to consume fast foods compared to males. These findings suggest that while access to nutritional information may be similar across genders, the application of that knowledge may differ due to gendered motivations and social influences. This study therefore, seeks to assess the level of nutritional knowledge among school adolescents in Ilorin West LGA, Kwara State, with a particular focus on how variables such as school type and gender may influence nutritional awareness. The findings are intended to inform targeted interventions that promote healthful dietary behaviors during adolescence, a period pivotal for shaping lifelong health outcomes.

Statement of the Problem

Adolescents are in a critical period of growth that demands proper nutrition for optimal physical, cognitive, and emotional development. However, in many developing countries, including Nigeria, adolescents often exhibit poor dietary habits due to inadequate nutritional knowledge, increasing exposure to unhealthy food environments, and limited access to health education. Studies have shown that nutritional knowledge plays a key role in shaping food choices, yet many adolescents lack the practical understanding required to make

informed decisions, particularly in low-resource settings (González-Rábago et al., 2021; UNICEF, 2022).

Despite the growing body of research on adolescent nutrition, localized data on the nutritional knowledge of school adolescents in Ilorin West Local Government Area (LGA) remain sparse. There is a need to understand whether differences exist in nutritional knowledge based on school type and gender, especially as private schools are often better resourced and may offer more structured health education compared to public schools. While some studies suggest that females may have higher nutritional awareness, others report no significant gender differences, indicating the need for context-specific investigations (Ibrahim et al., 2019; AlBlooshi et al., 2021).

The absence of current, localized data in Ilorin West LGA creates a gap in evidence needed to guide targeted interventions and educational programs aimed at promoting adolescent health. Therefore, this study seeks to assess the level of nutritional knowledge among school adolescents in Ilorin West, and to determine whether school type and gender significantly influence this knowledge. Addressing this gap is essential for informing effective, inclusive, and equitable nutrition education strategies in the region.

Research Question

1. What is the level of nutritional knowledge of school adolescents in Ilorin West LGA, Kwara State?

Research Hypotheses

- H₀₁:** School adolescents in Ilorin West LGA, Kwara State do not possess significant nutritional knowledge.
- H₀₂:** There is no significant difference in the level of nutritional knowledge among school adolescents in Ilorin West LGA, Kwara State based on school type.
- H₀₃:** There is no significant difference in the level of nutritional knowledge of school adolescents in Ilorin West LGA, Kwara State based on gender.

Methodology

This study adopted a descriptive survey research design to assess the nutritional knowledge among school adolescents in Ilorin West Local Government Area (LGA) of Kwara State, Nigeria. The population of the study comprised 44,987 secondary school students enrolled in both public and private schools within the LGA. A total of 413 students were selected through a multistage sampling technique involving stratified, proportionate, simple random, and convenience sampling methods.

The main instrument for data collection was a structured, self-administered questionnaire divided into two sections: demographic data and items on nutritional knowledge. The questionnaire was validated for face and content validity by experts in the Department of Health Promotion and Environmental Health Education, Faculty of Education, University of Ilorin. A reliability coefficient of 0.82 was obtained using the split-half method, yielding a high reliability coefficient. Ethical approval was obtained, and participation was voluntary and anonymous.

Data collected were analyzed using mean rating and percentage to answer the research question and independent samples t-test to test the hypotheses at a 0.05 level of significance. The methodological approach ensured a robust investigation of the differences in nutritional knowledge based on school type and gender.

Results

Research Question 1: What is the level of nutritional knowledge of school adolescents in Ilorin West LGA, Kwara State?

Table 1: Frequency, Percentage and Mean on Nutritional Knowledge of School Adolescents in Ilorin West LGA, Kwara State

S/N	Nutritional Knowledge of Students	Yes	No	Mean	Decision
4	I understand the importance of consuming a balanced diet for overall health.	371 (89.8%)	42 (10.2%)	1.90	Significant
5	I am knowledgeable about the different food groups and their nutritional benefits.	257 (62.2%)	156 (37.8%)	1.60	Significant
6	I know how to read and understand nutritional labels on food packaging.	123 (29.8%)	290 (70.2%)	1.30	Not Significant
7	I am aware of the recommended daily intake of essential nutrients such as vitamins and minerals.	112 (27.1%)	301 (72.9%)	0.87	Not Significant
8	I feel confident in my ability to make informed food choices based on nutritional value.	229 (55.4 %)	184 (44.6%)	1.55	Significant
9	I actively seek out information about nutrition and healthy eating habits.	114 (35.7%)	299 (64.3%)	1.27	Not Significant
10	I understand the impact of poor nutrition on physical and mental well-being.	257 (50.2%)	156 (49.8%)	1.50	Significant
11	I believe that nutritional education should be a priority in school curriculum.	236 (57.1%)	177 (42.9%)	1.56	Significant
12	I feel adequately supported by my school in developing nutritional knowledge and habits.	237 (57.4%)	176 (49.8%)	1.56	Significant
13	I am motivated to maintain a healthy diet and lifestyle based on my understanding of nutrition.	312 (75.5%)	101 (24.5%)	1.75	Significant
Total		14.86			

Average mean = 1.5

The analysis of the data in Table 1 reveals that school adolescents in Ilorin, Kwara State, possess a moderate level of nutritional knowledge. A majority demonstrated significant understanding of general nutrition concepts, such as the importance of consuming a balanced diet (89.8%), knowledge of food groups (62.2%), and the impact of poor nutrition on health (50.2%). Many also expressed motivation to maintain a healthy diet and support for nutritional education in schools. However, the data also highlight notable gaps in specific areas, particularly in technical knowledge such as reading and interpreting nutritional labels (29.8%) and awareness of recommended daily nutrient intake (27.1%).

Table 2: One-Sample t-test Showing Level of Nutritional Knowledge among School Adolescents in Ilorin West LGA

Variable	N	Mean	Test Value	df	t-value	p-value	Decision
Nutritional Knowledge Score	413	1.50	1.00	412	15.86	0.000	Significant

The result in Table 2 shows that the mean nutritional knowledge score of school adolescents (Mean = 1.50) is significantly higher than the test value of 1.00. The calculated t-value of 15.86 with a p-value of 0.000 is less than 0.05. Therefore, the null hypothesis (H₀₀) is rejected. This indicates that school adolescents in Ilorin West LGA possess a significant level of nutritional knowledge.

H₀₂: There is no significant difference in the level of nutritional knowledge among school adolescents in Ilorin West LGA, Kwara State based on school type.

Table 3: Summary of the Independent t-test Statistics Showing the Difference in the Level of Nutritional Knowledge of School Adolescents in Ilorin West LGA, Kwara State Based on School Type

School Type	No	Mean	Std. Dev.	df	t	p-value	Decision
Public School	235	13.45	3.13	411	27.23	0.000	Rejected
Private School	178	18.37	7.14				

p < 0.05

The result in table 3 indicated that students in private schools (Mean = 18.37) demonstrated a higher level of nutritional knowledge compared to their counterparts in public schools (Mean = 13.45). The greater standard deviation in private schools (7.14) also indicates a wider spread of scores compared to public schools (3.13). The independent samples t-test in the table shows a calculated t-value of 27.23 and a p-value of 0.000, which is less than 0.05. Therefore, the null hypothesis (H₀₁) which states that there is no significant difference in the level of nutritional knowledge of school adolescents based on school type is rejected. This implies that school type significantly influences students' nutritional knowledge.

H₀₃: There is no significant difference in the level of nutritional knowledge of school adolescents in Ilorin West LGA, Kwara State based on gender.

Table 4: Summary of the Independent t-test Statistics Showing the Difference in Nutritional Knowledge of School Adolescents in Ilorin West LGA, Kwara State Based on Gender

Gender	No	Mean	Std. Dev.	df	t	p-value	Decision
Male	167	16.32	6.85	411	1.12	0.263	Not Rejected
Female	246	17.04	7.21				

p < 0.05

The result of the independent t-test in table 4 shows a calculated t-value of 1.12 and a p-value of 0.263, which is greater than 0.05. Consequently, the null hypothesis is not rejected, indicating that there is no statistically significant difference in the level of nutritional knowledge between male and female school adolescents in Ilorin West LGA. This suggests that both male and female students have relatively similar levels of nutritional knowledge, implying that gender is not a major factor influencing awareness or understanding of nutrition in this population.

Discussion

The findings of hypothesis one revealed that school adolescents in Ilorin West Local Government Area possess a statistically significant level of nutritional knowledge. This was established through the one-sample t-test, which showed that the mean nutritional knowledge score was significantly higher than the test value, leading to the rejection of the null hypothesis. This suggests that adolescents demonstrate an appreciable understanding of basic nutrition concepts, indicating that they are not entirely deficient in nutrition-related awareness.

This finding is consistent with previous studies that have reported moderate to adequate levels of nutritional knowledge among adolescents. For instance, Adeomi et al. (2020) observed that Nigerian adolescents demonstrated a fair level of awareness regarding nutrition, particularly in general concepts such as balanced diet and the effects of poor nutrition. Similarly, Ogunba et al. (2022) reported that adolescents exhibited moderate nutritional knowledge, although gaps remained in specific areas such as nutrient requirements and food labeling. The observed level of knowledge in this study may be attributed to increased exposure to nutrition information through school curricula, media, and public health initiatives, as supported by González-Rábago et al. (2021), who emphasized the role of educational and community-based interventions in improving adolescents' food literacy.

However, despite the statistically significant level of knowledge, the findings also highlight existing gaps in more technical and practical aspects of nutrition. Adolescents demonstrated lower understanding in areas such as interpreting nutritional labels and recommended daily nutrient intake, suggesting that their knowledge may be more theoretical than practical. This supports the findings of Sadegholvad et al. (2020), who noted that adolescents often possess general nutrition awareness but lack the practical skills required for informed dietary decision-making. Therefore, while the current level of knowledge is encouraging, there is a need to strengthen nutrition education programmes to enhance both depth and application of knowledge among adolescents.

The findings of hypothesis two reveal a significant difference in the level of nutritional knowledge among school adolescents based on school type, with students in private schools demonstrating a higher mean nutritional knowledge score compared to their counterparts in public schools. This suggests that private school students are more likely to possess better understanding of nutrition-related information and practices than those attending public schools.

This finding is consistent with the work of Nnamani et al. (2021), who reported that students in private schools often have better access to health education resources, exposure to structured school feeding programs, and greater parental involvement in nutritional decisions. These factors collectively contribute to higher nutritional awareness. Similarly, Adeomi, Fatusi, and Klipstein-Grobusch (2020) found that disparities in the availability of nutrition education materials and the quality of school-based health programs between public and private schools in Nigeria significantly influence adolescents' nutritional knowledge.

Moreover, Odeyemi et al. (2022) observed that private schools generally have better infrastructure, smaller class sizes, and more health-related extracurricular activities, which enable more personalized and effective dissemination of nutrition-related information to students. These advantages may account for the significantly higher level of nutritional knowledge among students in private schools compared to those in public institutions.

International studies further support this pattern. For instance, Nguyen et al. (2021) found that adolescents attending well-resourced schools in Vietnam had greater nutritional literacy and healthier eating behaviors than those from under-resourced schools, indicating that school environment plays a critical role in shaping students' health knowledge.

The findings of hypothesis three showed no significant difference in the level of nutritional knowledge among school adolescents based on gender. This implies that both male

and female students in Ilorin West LGA have relatively similar levels of understanding regarding nutrition and healthy eating practices. The finding suggests that gender may not be a major determining factor in adolescents' acquisition of nutritional knowledge within this population. This outcome is in agreement with the findings of Akoto and Kumah (2020), who discovered that gender did not significantly influence nutritional knowledge among secondary school students in Ghana, indicating that both boys and girls had comparable exposure to nutrition education and dietary information. Similarly, Tariq et al. (2021) reported no significant gender differences in nutrition knowledge among adolescents in Pakistan, attributing the uniformity to school-based interventions and general awareness efforts that target all students regardless of gender.

However, this finding contrasts with studies like that of Ibrahim et al. (2019), who observed that female students tend to have slightly higher nutrition knowledge, possibly due to their greater interest in health and body image concerns, which drive them to seek more information about healthy eating. The current finding may reflect the impact of increased access to health information through school programs, mass media, and mobile technology, which provide equal learning opportunities for both genders. It also suggests that nutrition education interventions may be reaching both male and female students effectively in the study area.

Conclusion

Based on the findings of this study, the following conclusions were made:

1. School adolescents in Ilorin West LGA possess a moderate but statistically significant level of nutritional knowledge
2. School type significantly influences the nutritional knowledge of school adolescents in Ilorin West LGA, Kwara State.
3. Gender does not significantly influence the nutritional knowledge of school adolescents in Ilorin West LGA, Kwara State.

Recommendations

Based on the conclusions drawn from this study, the following recommendations were made:

1. School authorities and health educators should strengthen and expand nutrition education programmes to improve adolescents' nutritional knowledge beyond the current moderate level.
2. Targeted nutrition interventions should be implemented in public schools to address disparities in nutritional knowledge.
3. Nutrition education programmes should be gender-sensitive and inclusive to ensure equal participation among male and female students.

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