

## PERCEPTION OF STAFF AND STUDENTS OF TERTIARY INSTITUTIONS IN OYO TOWN ON NUTRITION EDUCATION AS A CORRELATE FOR NATIONAL DEVELOPMENT

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### Abstract

*The cross-sectional study assessed the perception of 300 staff and students who were willing to participate from five main tertiary institutions in Oyo town on nutrition education as a correlate for national development. The tertiary institutions included: Atiba University, Ajayi Crowther University, Emmanuel Alayande University of Education, Federal College of Education (FCEsp.) and Federal School of Surveying (FSS). Five objectives and five research questions with one null hypothesis were set for the study. Simple random sampling of participants represents various demographics and experiences using in-person interview schedule and structured questionnaires. Descriptive statistics and regression analysis were used to establish correlation in order to identify the strength and significance of relationships between nutrition education and development metrics. Findings show moderately positive relationship between nutrition education and national development at  $r = .7$ . It was recommended that partnerships between tertiary institutions, Ministry of Health, National Orientation Agency and community-based organisations would enhance nutrition education initiatives. In addition, increasing awareness on healthy eating at household levels would reduce malnutrition, healthcare costs and diet-related diseases. Nutrition education awareness in academic community would enable informed food choices, while intentional consumption of indigenous foods in season would encourage social ties, support sustainable agricultural practices and resource management for food security and environmental sustainability to strengthen local economies.*

**Keywords:** *Nutrition Education, National Development, Public Health, Food Security, Dietary Behaviour*

### Introduction

Nutrition is a critical part of health, wellbeing and development; hence it is a fundamental driver of national development as a reflection of her progress and as a decisive factor in her economic and social trajectory. Nutrition education conceptually refers to the process of providing individuals and communities with the knowledge, skills and motivation necessary to make informed food choices and adopt healthy dietary behaviours. It encompasses educational strategies that promote understanding of food, nutrients and their relationship to health and well-being. According to the United States Department of Agriculture (2024, 2026), nutrition education aims to improve food choices, dietary practices, and overall health outcomes by equipping individuals with practical food and nutrition knowledge. Contento and Koch (2020) described

nutrition education as a multidisciplinary approach that integrates public health, behavioural science, and food systems to foster long-term healthy eating behaviours within communities. Most nutrition programmes often involve schools, healthcare institutions, community organizations and media platforms in disseminating nutritional knowledge. Nutrition is strongly linked to brain development and cognitive performance, especially among children and adolescents. Adequate nutrition improves concentration, memory, and learning ability, which ultimately enhances educational outcomes. Individuals with higher levels of education tend to consume healthier foods and maintain better dietary practices compared to those with lower educational attainment thus contributing to the development of skilled human capital needed for national growth.

Nutrition education programmes can help address micronutrient deficiencies by improving knowledge about nutrient-rich foods and healthy eating practices. Early prevention of non-communicable diseases has important implications for future nutrition-related interventions addressing the risky eating patterns and unhealthy food in various communities, school canteens and campuses. Nigeria is experiencing a rapid transition in nutrition from traditional to westernized processed, high sugar and fat dense processed foods. It is not limited to teaching individuals about food but also involves empowering communities to make sustainable dietary choices that enhance health and productivity. Nutrition education has undergone a considerable transformation over the last 50 years from simple dietary guidelines to complex interventions addressing behavioural change, food environments and cultural dietary practices to meet up with societal values, technological innovation and global health perspectives (Nor, et al., 2024). From the 70s, with focus primarily on basic dietary knowledge to combat prevalent health issues and enhance public health, to current era emphasising personalised nutrition, sustainability, expanded scope and fundamental shift in approach and methodologies against the backdrop of shifting societal perspectives on health, wellness, and dietary habits. In 1980s, there was a gradual shift towards more nuanced aspects of nutrition, including the role of micronutrients and the importance of balanced diets in preventing chronic diseases (Petrikova, et al., 2023). The period from 1970 to 2023 marked a significant era in nutrition education, mirroring broader societal shifts in attitudes toward health, wellness, and dietary habits (Nor, et al., 2024).

The most recent developments have been characterised by growing emphasis on personal nutrition and sustainable dietary practices as a more holistic approach for individual genetic profiles, environmental sustainability and long-term impact of dietary choices on health and the planet. The advent and subsequent proliferation of digital technology have revolutionised nutrition education research and practice. Integrating the internet, mobile applications, and later, machine learning and big data analytics have opened new avenues for delivering personalised nutrition education and conducting large-scale, real-time data analysis. These technological advancements have enhanced the reach and efficacy of nutrition education programmes and enabled researchers to explore novel aspects of dietary behaviours and preferences (Nursiah, 2024).

National development refers to the improvement of economic, social, political and health conditions of a country, resulting in increased quality of life for citizens. Development indicators often include improvements in education, health, productivity, food security and economic growth. Human capital development is a major driver of national development and healthy populations are more productive, innovative and capable of contributing to economic growth. Nutrition plays a critical role in this process because adequate nutrition enhances physical health, cognitive development and labour productivity.

Nutrition education contributes to national development through several mechanisms, including improved health outcomes, increased productivity, enhanced cognitive development, and reduced healthcare costs. Nutrition education plays a crucial role in preventing diet-related diseases such as obesity, diabetes, cardiovascular diseases, and micronutrient deficiencies. Educational programmes that teach individuals about balanced diets and healthy lifestyles can significantly reduce these health risks. Nutrition education study in Ghana demonstrated that structured nutrition lessons significantly improved students' nutrition knowledge and increased fruit consumption among primary school children. Also, nutrition

education interventions among overweight and obese schoolchildren significantly improved nutritional knowledge and attitudes following educational programmes. Improved public health contributes directly to national development by reducing healthcare costs, increasing workforce productivity, and improving life expectancy. Nutrition education particularly targeted at caregivers and women, often influence household dietary practices. Rural women with increased nutrition knowledge, improved dietary diversity and healthier consumption patterns within households after the intervention.

Nutrition education serves as a key correlate for national development by enhancing dietary behaviours, informing policy reforms, and reducing the burdens of non-communicable diseases particularly in low-income and middle-income countries where malnutrition imposes significant economic costs. Nutrition education programme improves nutrition knowledge and attitude towards dietary intake (Kupolati, et al., 2019). The role of nutrition education in fostering healthier populations, supporting workforce productivity and integrating it into national planning frameworks cannot be overemphasised.

Evidence-based models for food-insecure populations particularly in Nigeria, shows more than 25 million are at risk of hunger, hence, multidimensional approaches that combine agriculture, social protection and economic empowerment are germane for scoring interventions on theory, format and equity to guide feeding networks. Nutrition education significantly impacts public health in several ways as a crucial tool for improving public health by fostering healthier eating habits, reducing disease prevalence, and enhancing the overall well-being of communities. Nutrition education enhances public awareness about the importance of healthy dietary habits that can lead to improved nutrition among individuals and communities. Promoting the knowledge of proper nutrition, would reduce the rates of malnutrition, obesity, and various diet-related diseases such as diabetes and heart disease. Nutrition education is vital for maternal and child health in encouraging proper nutrition during pregnancy and early childhood for better growth and development outcomes. Healthier diets result in better cognitive functions and physical performance, for more effective and productive populace.

The importance of multisectoral action by governmental and non-governmental institutions, in delivering public health and nutrition intervention cannot be overemphasised. Compulsory training of food vendors in food hygiene and nutrition education before being allowed to work in school canteens, and the integration of nutrition education sensitization into school healthcare activities. Acceptance of the intervention programmes that are context-appropriate and culturally sensitive. Integrating educational talks on nutrition and physical activity, sports environment, staff health, and chronic disease and diabetes awareness. Some intervention may not significantly improve diet quality for children because of insufficient rigor in its implementation, scarcity of data during its development and inadequate reports of such programmes. Another major challenge in implementing nutrition intervention is the context of the double burden of malnutrition in the coexistence of undernutrition and overnutrition, especially in a wide socio-economic setting with disparities. Teaching of nutrition education modules in class is affected by time constraints to teachers.

Significant improvements in nutrition knowledge have been reported in several school-based nutrition education and physical activity interventions among adolescents in Sub-Saharan African countries. Nutritional education programme leading to revision of national school health and hygiene policy for science curriculum and nutrition taught in schools. Efficient and sustainable policies such as a National School Nutrition Program with evidence-based and culturally sensitive guidelines for nutrition in schools improved healthy eating habits in children and adolescents. Several empirical studies have demonstrated the positive impact of nutrition education on public health and development outcomes. Mangwane, et al. (2024) reported that nutrition education interventions significantly improved nutrition knowledge and dietary behaviour among women in rural communities. Mogre, et al. (2024) found that nutrition education significantly increased knowledge and fruit consumption intervention among schoolchildren in Ghana. Selamat, et al. (2025) demonstrated that structured nutrition education programmes improved knowledge and attitudes among overweight and obese children, highlighting the importance of early nutrition education in promoting healthy lifestyles.

Despite considerable literature on nutrition education and its individual effects on health outcomes, fewer studies specifically analysed explicit links between nutrition education and broader outcomes in national development. Many existing studies may lack focus on specific cultural or regional contexts,

making it difficult to apply them to other settings since nutrition education vary by culture. Several challenges still emanate to limit the effectiveness of nutrition education programmes in many developing countries. The challenges include: implementation barriers like limited funding for public health education programmes, teacher readiness, addressed via professional development and resource strategies, low literacy levels among populations, cultural food practices that resist dietary change, inadequate integration of nutrition education into school curricula and lack of trained nutrition educators among others. Meanwhile, addressing these challenges require collaboration between governments, educational institutions, health organizations, and community leaders (Kahsay, et al., 2020).

The relationship between nutrition education and national development can be explained using Human Capital Theory which suggests that investments in education and health improve productivity and economic potential of individuals. Nutrition education contributes to human capital development by improving physical health, cognitive ability, and work capacity. As a result, individuals become more productive and capable of contributing to national economic growth. Health Belief Model or Social Cognitive Theory is a foundational cognitive framework designed to predict health-related behaviours by focusing on individual perceptions of threat or benefits (Alyafei & Easton-Carr, 2024).

Nutrition education has evolved from a specialised field to intersect with various disciplines like psychology, technology, environmental studies, and political science. This interdisciplinary approach has enriched the field, offering comprehensive insights and solutions to complex nutritional challenges. Moreover, the field has increasingly adopted a global perspective, moving beyond a Western-centric view with recognition and appreciation of diverse dietary patterns, cultural influences and nutritional challenges faced by different populations across the globe. Such global approach has been instrumental in developing more inclusive and culturally sensitive strategies. The impact of nutrition education on national health outcomes has reduced malnutrition and related diseases by improving public health and healthcare costs. It has promoted economic development by enhancing productivity due to better nutrition. Economic return on investment in nutrition education programmes and social development has witnessed women empowerment through improved knowledge. Development of community resilience and social cohesion has reduced barriers to effective nutrition education, such as cultural beliefs, lack of resources, and access to information. One cannot undermine the role of schools and community programmes in disseminating nutrition knowledge, lifelong health literacy and linkage to better decision-making.

This present study is expected to provide a comprehensive model that connects nutrition education with outcomes in health, economics, and social development using empirical evidence between nutrition education and various aspects of national development. It purposes to offer actionable recommendations for policymakers to integrate nutrition education more effectively into local and national development strategies, using cultural contexts to shape nutrition education's that is adapted to different regions.

### **Purpose of the Study**

- i. Assess the level of nutritional knowledge and practices of respondents
- ii. Evaluate the impact of nutrition on the health outcome of respondents
- iii. Explore their perception on the impacts of nutrition education on national development
- iv. Identify barriers to effective nutrition education in the study area
- v. Assess the awareness, engagement and participation of the respondents

### **Methods**

The study implored a cross-sectional study design to obtain data from respondents in five selected tertiary institutions in Oyo town, which consists of three Universities (Atiba University, Ajayi Crowther University, Emmanuel Alayande University of Education) a college of education (Federal College of Education (FCEsp.) and a professional institution (The Federal school of Surveying). In-person interview schedule using structured questionnaire was done.

To obtain quantitative data from the respondents. Stratified sampling of participants represents various demographics and experiences. In-person interview schedule using structured questionnaire was done. The study employed the use of descriptive statistics to correlations and identify the strength and significance of relationships between nutrition education and development metrics.

Five tertiary institutions in Oyo metropolis were selected using purposive sampling technique for selecting the institution while this study sample size of 300 respondents from both staff and students who were willing to participate in order to assess their levels of nutrition education and correlate these with indicators of national development. Stratified sampling ensured a diverse pool of participant that represents various demographics and experiences.

Permission was taken from respondents before interview, while participants included in the study were those that willingly agreed and gave their consent.

A pilot test was done with a small sample size of respondent outside the selected study area. Reliability of the instrument was assessed using Cronbach alpha's coefficient to determine its internal consistency, the item was scaled at .79 indicating adequate reliability.

The study employed the use of descriptive statistics such as: frequency, percentage and cumulative percentage, and Inferential statistics to establish correlations in order to identify the strength and significance of relationships between nutrition education and development metrics.

## Results and Discussion of Findings

**Table 1**  
*Demographic Profile of Respondents*

<b>Distribution of Respondents by Age</b>	<b>Frequency (f)</b>	<b>Percentage (%)</b>	<b>Cumulative (%)</b>
18 – 24 years	145	48.3	48.3
25 – 34 years	87	29.0	77.3
35 – 44 years	38	12.7	90.0
45 – 54 years	18	6.0	96.0
55 – 64 years	8	2.7	98.7
65 years and above	4	1.3	100.0
<b>Total</b>	<b>300</b>	<b>100.0</b>	—
<b>Respondents by Gender</b>	<b>Frequency (f)</b>	<b>Percentage (%)</b>	<b>Cumulative (%)</b>
Male	162	54.0	54.0
Female	138	46.0	100.0
<b>Total</b>	<b>300</b>	<b>100.0</b>	—
<b>Respondents by Education</b>	<b>Frequency (f)</b>	<b>Percentage (%)</b>	<b>Cumulative (%)</b>
No formal education	6	2.0	2.0
Primary education	14	4.7	6.7
Secondary education	38	12.7	19.4
Tertiary education (Univ./Col.)	228	76.0	95.4
Other	14	4.7	100.1
<b>Total</b>	<b>300</b>	<b>100.0</b>	—
<b>Respondents by Household Size</b>	<b>Frequency (f)</b>	<b>Percentage (%)</b>	<b>Cumulative (%)</b>
1 – 2 members	48	16.0	16.0
3 – 4 members	107	35.7	51.7
5 – 6 members	98	32.7	84.4
7 or more members	47	15.7	100.1
<b>Total</b>	<b>300</b>	<b>100.0</b>	—

n = 300

The demographic data in Table 1 reveals that the study population was predominantly youthful, with 48.3% of respondents aged between 18 and 24 years and an additional 29.0% falling within the 25–34 age distribution. This skew toward younger respondents is consistent with the institutional setting of the study, as undergraduate students and postgraduate staff typical of Nigerian tertiary institutions.

Cumulatively, over three-quarters of respondents (77.3%) were below 35 years of age, suggesting that the study captures a population at a critical formative stage in the development of long-term dietary behaviours.

Gender distribution showed a moderate male majority, with 54.0% male and 46.0% female, which does not significantly influence the findings given the relativeness between the groups. The relatively balanced gender composition strengthens the generalisability of conclusions drawn regarding gender-related nutritional practices. On education, the main group comprised of respondents with tertiary-level education 76.0%, though a notable 12.7% had only secondary education, likely reflecting the presence of students and non-academic support staff. Household size data (Table 1) indicated that a majority lived in households of between 3 and 4 members (35.7%) or 5 to 6 members (32.7%), with households of 7 or more accounting for 15.7% of the sample. Larger household sizes in Nigeria have been associated with increased nutritional vulnerability, particularly in low-income contexts (Nweke, et al., 2019).

**Research Question 1:** What is the level of nutritional knowledge and practices of respondents?

**Table 2**

*Perceived Level of Nutritional Knowledge of the Respondents*

Self-rated Level of Nutritional Knowledge	Frequency (f)	Percentage (%)	Cumulative (%)
Very high	22	7.3	7.3
High	68	22.7	30.0
Moderate	121	40.3	70.3
Low	65	21.7	92.0
Very low	24	8.0	100.0
<b>Total</b>	<b>300</b>	<b>100.0</b>	—
Nutrition Topics Respondents are Familiar with		Frequency (f)	% of Respondents
Food groups and a balanced diet		214	71.3
Nutritional needs for different age groups		156	52.0
Importance of hydration		189	63.0
Effects of malnutrition		172	57.3
Healthy cooking methods		143	47.7

n = 300

Table 2 reveals that 40.3% of respondents had moderate nutritional knowledge while 22.7% and 7.3% opted for high and very high. Equally, 29.7% of respondents exhibited low or very low. These are consistent with studies in other tertiary education context in Nigeria, which generally reported moderate to low self-assessed nutritional literacy among students and non-academic staff (Ukegbu, et al., 2017; Olumakaiye, 2013). The multiple-response item on familiar nutrition topics further contextualises these findings. The most widely recognised topic was food groups and balanced diet (71.3%), followed by the importance of hydration (63.0%) and effects of malnutrition (57.3%). In contrast, knowledge of healthy cooking methods (47.7%) and nutritional needs for different age groups (52.0%) was comparatively lower. These patterns suggest that respondents have general nutritional perceptions through formal schooling or social media. The gap between theoretical awareness and applied knowledge is a recurring theme in nutrition education literature (Contento & Koch, 2020) with direct implications on dietary behaviour change.

**Research Question 2:** What is the impact of nutrition on health outcome of Respondents?

**Table 3**

*Perceived Impact of Nutrition on Health by the Respondents*

Frequency of Cooking at Home by Respondents	Frequency (f)	Percentage (%)	Cumulative (%)
Daily	98	32.7	32.7
Several times a week	113	37.7	70.4
Once a week	54	18.0	88.4
Rarely	28	9.3	97.7
Never	7	2.3	100.0
<b>Total</b>	<b>300</b>	<b>100.0</b>	—

<b>Self-reported Dietary Habits of Respondents</b>	Frequency (f)	Percentage (%)	Cumulative (%)
Very healthy	28	9.3	9.3
Healthy	89	29.7	39.0
Average	128	42.7	81.7
Unhealthy	41	13.7	95.4
Very unhealthy	14	4.7	100.1
<b>Total</b>	<b>300</b>	<b>100.0</b>	—
<b>Frequency of using Food Labels for Shopping</b>	Frequency (f)	Percentage (%)	Cumulative (%)
Always	34	11.3	11.3
Often	67	22.3	33.6
Sometimes	89	29.7	63.3
Rarely	76	25.3	88.6
Never	34	11.3	99.9
<b>Total</b>	<b>300</b>	<b>100.0</b>	—
<b>Daily Servings of Fruits and Vegetables</b>	Frequency (f)	Percentage (%)	Cumulative (%)
0 – 1 serving	93	31.0	31.0
2 – 3 servings	112	37.3	68.3
4 – 5 servings	67	22.3	90.6
More than 5 servings	28	9.3	99.9
<b>Total</b>	<b>300</b>	<b>100.0</b>	—

n = 300

Dietary practices and home cooking with Data on cooking frequency (Tables 3), indicate that home cooking is a common practice among the respondents. With 32.7% cooking daily and 37.7% cooking several times a week, suggest that nearly 70% of respondents engage in home-based food preparation several times weekly, which is a positive indicator for dietary quality. Home cooking is associated with healthier dietary patterns, reduced consumption of ultra-processed foods, and better nutritional outcomes (Wolfson & Bleich, 2015). However, 9.3% rarely cooked and 2.3% never cooked, representing a subgroup that likely relies on street food and campus cafeterias, in environments that are frequently characterised by nutritionally poor, high-calorie options in the Nigerian context (Olusanya, et al., 2018). Despite relatively frequent cooking habits, self-reported dietary quality presents a more concerning picture. Only 9.3% defined their diets as very healthy, and 29.7% as healthy, while 42.7% described their dietary habits as average, with combined 18.4% rating their diets as unhealthy or very unhealthy. The disconnect between cooking frequency and self-rated dietary quality indicate that cooking respondents are not necessarily taking nutritionally balanced meals, attributable to insufficient nutritional knowledge, economic constraints, limited ingredient variety or deep cultural preferences (Food and Agriculture Organization, 2020).

Table 3 also reveals low engagement with food labels; only 11.3% always read food labels and 22.3% often do so. More than a third of respondents 36.6% either rarely or never consult food labels. This aligns with wider similarity observed across West Africa, where low food label literacy is intensified by inadequate formal nutrition education or limited regulatory enforcement of labelling standards (Vorster, *et al.*, 2013). Reading of food label is a behavioural indication of nutritional literacy and health consciousness (Campos *et al.*, 2011).

Fruit and vegetable consumption for majority of the respondents fall below internationally recommended five daily servings (World Health Organization, 2019). A combined 68.3% of respondents consume between 0 and 3 servings daily, with 31.0% consuming 0-1 serving; a level constituting potential nutritional risk. Only 9.3% consume more than five servings per day. Inadequate fruit and vegetable intake has been directly associated with increased risk of non-communicable diseases including cardiovascular disease, type 2 diabetes, and certain cancers (Devirgiliis et al., 2024). This suggests that even among an educated urban population, actual dietary practices diverge significantly from evidence-based nutritional pattern that has direct consequences for good health outcomes and national development.

**Research Question 3:** What is their perception on the impacts of nutrition education on national development?

**Table 4**  
*Perception on the Importance of Nutrition Education for National Development*

<b>Importance of Nutrition in Development</b>	Frequency (f)	Percentage (%)	Cumulative (%)
Extremely important	112	37.3	37.3
Very important	98	32.7	70.0
Moderately important	61	20.3	90.3
Slightly important	18	6.0	96.3
Not important at all	11	3.7	100.0
<b>Total</b>	<b>300</b>	<b>100.0</b>	—
<b>Nutrition Influence on Economic Productivity</b>	Frequency (f)	Percentage (%)	Cumulative (%)
Strongly agree	127	42.3	42.3
Agree	98	32.7	75.0
Neutral	45	15.0	90.0
Disagree	21	7.0	97.0
Strongly disagree	9	3.0	100.0
<b>Total</b>	<b>300</b>	<b>100.0</b>	—

n = 300

Table 4 shows a positive response among participants toward the national developmental significance of nutrition education. About 70% evaluated nutrition education as either extremely or very important for national development, with only 3.7% considering it not important. This is particularly significant for participants from educated population with capacity for informed judgment on developmental issues. This relationship between nutrition, human capital development and national productivity are well-established economic development. Nutrition and Economic Productivity, with 75.0% of respondents agreeing or strongly agreeing that proper nutrition improves economic productivity and only 10.0% expressing disagreement further reinforce the objective. The 15.0% who remained neutral may reflect uncertainty about the connection of individual nutritional status to macroeconomic outcomes. The convergence on productivity and nutrition connection denotes that well-nourished individuals exhibit greater physical stamina, superior cognitive function, reduced absenteeism and lower susceptibility to preventable illnesses translating to measurable productivity at individual and aggregate level (Grantham-McGregor, et al., 2007; Horton & Steckel, 2013). This affirms that Oyo Town's tertiary institutions recognise nutrition education as foundational to national economy.

**Research Question 4:** What are the perceived barriers to effective nutrition education in the study area?

**Table 5**  
*Perceived Barriers to Nutrition Education by Respondents*

<b>Challenges Faced in Accessing Nutrition Education</b>	Frequency (f)	%	
Lack of awareness about available programs	178	59.3	
Low literacy levels	89	29.7	
Socio-economic status	201	67.0	
Cultural beliefs and practices	134	44.7	
Time constraints	156	52.0	
Others	23	7.7	
<b>Ranking of Barriers to Nutrition Education</b>	Frequency (f)	Percentage (%)	Cumulative (%)
Socio-economic status	201	67.0	67.0
Lack of awareness about available programmes	178	59.3	126.3
Time constraints	156	52.0	178.3
Cultural beliefs and practices	134	44.7	223.0
Low literacy levels	89	29.7	252.7
Others	23	7.7	260.4

n = 300

The multiple-response data in Table 5 gives structural and socio-cultural barriers to nutrition education access and implementation. Most frequently cited barrier by the respondents was socio-economic

status (67.0%), closely followed by lack of awareness about available programmes (59.3%) and time constraints (52.0%). Cultural beliefs and practices were cited by 44.7% of respondents, while low literacy levels were mentioned by 29.7%. The prevalence of socio-economic status as a barrier is consistent with literature on health behaviour in low-income contexts (Kahsay, et al., 2020). In Nigeria, the economic climate constrains dietary choice: nutritionally dense foods like lean proteins, fresh vegetables, and whole grains are usually more expensive than energy-dense but nutrient-poor staples. Moreover, cost barriers extend beyond food access to education itself programme fees, transportation costs, and opportunity costs of attending nutritional workshops impose disproportionate burdens on lower-income staff and students (Hawkes, et al., 2017). The high response of awareness deficit (59.3%) suggests that where nutrition education programmes exist within institutional health centres, community organisations or government schemes; information dissemination may not reach target population. This calls for enhanced communication strategies including digital outreach, peer-education models and campus-based notice campaigns. Time constraints (52.0%), the third most cited barrier, reflect the competing demands of academic and professional life on the study population and point to a need for flexible, modular nutrition education delivery formats that can be integrated into existing curricula and workplace schedules. Cultural beliefs and practices are believed to be barrier to food choices in ethnic, religious, and social identity while nutritional recommendations that conflict with these preferences are frequently resisted (Vorster, et al., 2013).

**Research Question 5:** What is the level of awareness, engagement and participation of the respondents?

**Table 6**

***Community Engagement and Participation by Respondents***

<b>Distribution of Respondents by Institution</b>	Frequency (f)	Percentage (%)	Cumulative (%)
Ajayi Crowther University (ACU)	89	29.7	29.7
Atiba University (AU)	52	17.3	47.0
Emmanuel Alayande Univ. of Edu. (EAUED)	64	21.3	68.3
Federal School of Surveying (FSS)	47	15.7	84.0
Federal College of Education (Spec.) (FCEsp)	48	16.0	100.0
<b>Total</b>	<b>300</b>	<b>100.0</b>	—
<b>Awareness on Nutrition Education Programmes</b>	Frequency (f)	Percentage (%)	Cumulative (%)
Yes	134	44.7	44.7
No	166	55.3	100.0
<b>Total</b>	<b>300</b>	<b>100.0</b>	—
<b>Participation in Nutrition Education Programmes</b>	Frequency (f)	Percentage (%)	Cumulative (%)
Yes	87	29.0	29.0
No	213	71.0	100.0
<b>Total</b>	<b>300</b>	<b>100.0</b>	—

n = 300

The institutional distribution and representation of respondents (Table 6) reflects a reasonable spread sample across the five institutions, with ACU having the largest share (29.7%), followed by EAUED (21.3%), Atiba University (17.3%), FCEsp (16.0%), and FSS (15.7%). The close-proportional distribution across institutions strengthens the internal validity of the findings and ensures that results are not unduly biased toward any institutional culture or programme.

Meanwhile, 55.3% of respondents were unaware of any nutrition education programmes in their institution, while 44.7% indicated awareness, shows that less than half of them have been reached by some form of nutritional programmes, while the other respondents within an educated urban cohort remain uninformed about available programmes, thus resonating awareness deficit. Only 29.0% of respondents reported having participated in nutrition education programme, while 71.0% never participated in any nutrition education programme. The significant gap between awareness (44.7%) and actual participation (29.0%) indicates that awareness alone is insufficient to drive engagement which aligns with Health Belief Model (Alyafei & Easton-Carr, 2024) positing that perceived susceptibility, severity, benefits and barriers jointly determine health behaviour. Respondents may be aware of programmes but deterred from

participation by the barriers identified in research question 4 particularly socio-economic constraints and time pressures. Participation level has direct implications on community-level development outcomes. Nutrition education programmes are most effective when they achieve sustained, participatory engagement beyond passive exposure (Contento & Koch, 2020).

**Hypothesis 1:** There is no relationship between nutrition education and national development.

**Table 7**

*Relationship between Nutrition Education and National Development*

Variable	$\beta$ (Co-eff)	Std.Error	t-value	p-value
Constant	1.245	.312	3.99	.000
Nutrition Knowledge	.458	.072	6.35	.000
Cooking habit	.215	.065	3.31	.001
Dietary habit	.302	.081	3.72	.000
Food label awareness	.187	.059	3.17	.002

Note. R = .712,  $r^2 = .507$ , Adjusted  $R^2 = .498$ ,  $df = 298$ ,  $p < .05$

Table 7 shows the relationship between nutrition education and national development, the null hypothesis  $H_0$  was rejected as p is less than .05. The table illustrates a moderately positive relationship between national development and nutrition education.

**Conclusion and Recommendations**

This study deduced that nutrition education remains a vital pillar for national development, better health, economic stability, education, and social progress. Its multifaceted benefits contribute to the overall advancement and well-being of any society. The low participation rates documented on this study suggest that existing programmes may not be sufficiently accessible or culturally compelling to attract and retain participants. Interventions at the tertiary level such as integrating nutrition literacy elements into general studies curricula, establishing peer nutrition ambassador programmes, or hosting institution-wide health promotion events could bridge this participation gap and translate awareness into actionable behavioural change. Community engagement must be understood within the context of Nigeria's institutional landscape. The Federal Government's National Policy on Food and Nutrition provides a framework for nutrition education at all levels, yet implementation at the tertiary institution level remains inconsistent and under-resourced (Federal Ministry of Health, Nigeria, 2016).

The study recommends that culturally adaptive curricula, multi-sector partnerships (health, agriculture, education), and high-impact interventions be prioritized to strengthen the links of nutrition education to the national development, through;

1. Strengthened institutional partnerships between tertiary institutions and the Ministry of Health, the National Orientation Agency, with community-based organisations to enhance both the spread and impact of nutrition education initiatives in settings like Oyo Town.
2. Awareness on healthy eating habits right from household and community levels to reduce the rates of malnutrition, obesity, and diet-related diseases.
3. Instigation of nutrition education awareness and community programmes without gender disparities in health and education to reduce healthcare costs
4. Sustenance of evidence-based and effective intervention policy, by providing data on public health needs and in alignment to national development goals with global nutrition targets towards the Sustainable Nutritional and Development Goals.

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