
NUTRITION EDUCATION AND HOUSEHOLDS FOOD SECURITY IN EDO STATE AMIDST NIGERIA'S UNCERTAIN TIMES

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Abstract

This study examined the levels of Nutrition Education and households' food security in Edo State amidst Nigeria's uncertain times. Three research questions were raised for the study. The study was based on survey of 445 households in 2023 and 454 households in 2024 who were the sample. Results showed that there is a rise in food insecurity between 2023 and 2024 and a significant portion of the population experience varying degrees of food insecurity. The findings also revealed that despite the high level of food insecurity, nutrition education had a notable impact on food consumption habits of the people. Recommendations on how to achieve food security include giving quality nutrition education and participatory planning involving community, cultural and government officials in design of activities, decision making to strengthen implementation, monitoring and evaluation. When these are carried out, there will be some level of hope that food security can be achieved in the state and nation at large.

Keywords: Food Security, Households, Nutrition Education.

Introduction

How to feed the world's population of over seven billion people appear to be one of the most difficult problems facing humanity today. If every member of the home has consistent opportunity to enough food, both in terms of quantity and quality, to support an active and healthy lifestyle, then the household is considered to have enough food for consumption. According to the predictions of the Food and Agriculture Organization (2021), the number of hungry people has been rising gradually since 2014 and is expected to reach 41.4 million (9.8%) by 2030, with Africa accounting for 51.5% (33.2 million) of the world's undernourished population. Nonetheless, taking into account the global population experiencing food crises, the 2020 Global Report on Food Crisis stated that around 135 million people in 55 nations and territories, with 36 African countries accounting for 73 million of these cases suffer acute food insecurity (Ayinde et al, 2020). Furthermore, given Nigeria's current difficulties in providing for the basic food needs of its populace, food security is both a fundamental goal and an expected result of development plans in the nation. The majority of Nigerians rely mostly on subsistence farming, which scarcely meets the population's food demands. Food security and nutrition conditions are getting worse despite the numerous policies, initiatives, and financial contributions made by numerous national and international organizations working in the nation.

It is a well-known fact that no nation can accomplish economic development without agricultural development (Ayinde et al, 2020). By providing an abundance of crops and livestock for (food accessibility, affordability, usage, and quality), raw materials for the processing industries, national reserves, and export, as well as meeting local consumption, food security and sustainability are achieved. The rise of food security must be maintained and sustained for Nigeria to flourish. Without a doubt, putting food on the table for atypical Nigerian requires an increase in production activities in the mining, metallurgy, and industrial sub-sectors, particularly if it encourages export (as in the case of Nigeria becoming a net exporter of urea). A sustainable economy cannot exist without enhancing its human capital (that is knowledge and skills acquired from education or practical experience). In the 2019 overall ranking Table (the closer to 100 scores the better), Nigeria's ranking in the Global Food Security Index (GFSI) has reportedly increased since 2013 (ranked 86 among 107 countries with 33/100 scores) and

reached a concerning rank of 94 (with 48.4/100 scores) among 113 countries behind Ethiopia, Niger, and Cameroon, (WHO, 2020). With 86.9 million people living in extreme poverty, Nigeria surpassed India to become the country with the largest concentration of poverty in the world in May 2019. The fact that poverty is high and alarming in Nigeria is extremely becoming a matter of concern. 102.4 million Nigerians are estimated to be living in extreme poverty as of May 2023, which means that 15.5 million more people have fallen into poverty in just the past 3 years (GFSI, 2019).

Chronic and covert hunger, extreme poverty, corruption, conflict occurrences (insurgency in the North-East), and unfavorable climate change are the causes of Nigeria's fragile state of acute food insecurity. Nigeria has a 2019 Global Hunger Index (GHI) score of 27.9, placing it in a serious category. As it stands, Nigeria is not currently on track to meet the Sustainable Development Goal 2 target of eradicating all forms of hunger, achieving food security and improving nutrition, and advancing sustainable agriculture by 2030 (FAO, 2021). The percentage of undernourished people moved from 9.3% in 2000 to 13.4%, although the percentage of stunted people decreased from 39.7%. Nigeria continues to be a highly import-dependent and food insecure nation despite being the world's top producer of cowpea, cassava, and yam (International Fund for Agricultural Development, IFAD, 2012). Nigeria is lucky to have a large amount of land of 75 percent that is suited for agriculture, but sadly, only 40 percent of that area is utilized for farming (Olamide et al, 2024). The bulk of households in rural areas still rely on subsistence farming, which barely provides enough food for their immediate family. Lack of adequate roads and other infrastructure has made rural poverty worse by cutting off farmers from markets and necessary inputs.

In Edo State, Nigeria, many communities are struggling with food security due to ongoing economic instability, rising food prices, and inconsistent agricultural productivity. Despite various initiatives aimed at addressing these issues, access to adequate and nutritious food remains a significant challenge. Nutrition education could play a crucial role in improving food security, but its actual impact on the ground isn't well understood. Although some efforts have been made to educate people about nutrition and better food management, we don't have a clear picture of how these educational programs are affecting food security at the household level. This research aims to explore how nutrition education influences food security in Edo State, especially given the current socio-economic uncertainties in Nigeria. By understanding this relationship, we hope to identify more effective ways to enhance nutritional well-being in the region.

Household Food Security

Food security is a major determinant of nutrition security for individuals and households. The Food and Agriculture Organization (2021) defines household food security as having access to food that is adequate for all members of the household in terms of quality, quantity, safety, and cultural acceptability. At households, adequate food is defined quantitatively and qualitatively. Household food security is achieved when people have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life. Food is classified as either quantitative or qualitative depending on its quantity, variety, safety, and cultural acceptability (Berkman& Glass, 2021). Every household must possess the skills and resources necessary to either sustainably produce its own food or buy it from others. Numerous factors contribute to food insecurity in households. Food production is impacted by rapid population increase. When a family grows, the amount of food produced on the same plot of land they own may not be enough for everyone in the household. Shopping for food that would feed a large family can also be challenging. In an already tough context of fragile ecosystems, where providing enough food for the population may be challenging, high rates of poverty and population growth further contribute to the

problem. Illiteracy or low level of education may lead to poor income or earning capacity and hence low purchasing power due to unemployment (Chiaka et al, 2022). Limited employment also leads to poor purchasing power of households. Poor health and sanitation may lead to morbidity, mortality and reduced productivity due to various illness. Chronic malnutrition also reduces people's wellbeing lowering their intellectual and physical productivity. Low productivity causes low income earning capacity and thus a reduced purchasing power. A study conducted in Nigeria by Adeyeye (2022) assessed the food insecurity in urban slums found that food insecurity was found to be prevalent among respondents, with about 81% being food insecure. The largest proportion of the mildly food insecure (37%) household heads were less than 30 years old, while the largest proportion of moderately food insecure (45%) and severely food insecure (38%) household heads were within the age cohort of 31 to 40 years. Less than half of the mildly food insecure household heads had secondary school education while about three quarters of the moderately food insecure households had primary school education.

Factors Influencing Household Food and Nutrition Insecurity in Nigeria

Several elements contribute to the challenges of ensuring nutrition security in Nigeria. Key among these are poverty, limited availability of safe and nutritious food, inadequate healthcare services, and poor sanitation and hygiene practices. The COVID-19 pandemic further worsened food security, disrupting supply chains and driving up food prices, thereby increasing existing vulnerabilities. Conflict and displacement also play a significant role, particularly in the northeastern region where the Boko Haram insurgency has displaced over two million people since 2009, leading to severe food shortages and malnutrition.

Environmental factors like climate change and environmental degradation have decreased agricultural productivity and access to safe water and sanitation, intensifying malnutrition. Food insecurity remains a primary driver of nutritional challenges in Nigeria, with over 50% of households experiencing food insecurity. According to a study by Olamide (2024), this insecurity leads to reduced dietary diversity and insufficient intake of essential nutrients, contributing to malnutrition.

Poor feeding practices for infants and young children also exacerbate the problem. According to WHO (2020), only 39% of Nigerian mothers exclusively breastfed their infants for the first six months, and just 50% of children aged 6-23 months received the minimum acceptable diet. Additionally, poor sanitation and hygiene practices are linked to stunting in children under five. Nwaozor, Olanrewaju and Ake (2023) identified low maternal education, inadequate sanitation, and limited healthcare access as significant factors associated with undernutrition among Nigerian children.

Nutrition Education and Household Food Security:

Nutrition Education is a cornerstone of household food security, a key factor in ensuring that every family has access to enough nutritious food to support a healthy life. Household food security is not just about having food on the table; it's about having the knowledge and skills to make the most out of that food. Without this understanding, even households with sufficient food may struggle to meet their nutritional needs. Effective nutrition education empowers families to make informed choices about their diets. It provides practical skills that go beyond basic food selection, teaching individuals how to plan balanced meals, understand nutrition labels, and utilize available resources to their fullest potential. This knowledge helps families optimize their food purchases and preparation methods, ensuring that they not only have enough food but also the right kinds of food to support overall health (UNICEF, 2021). For many households, food security issues arise not just from a lack of food but from a lack of knowledge about how to use the food they have effectively. For instance, a family might receive a variety of fresh produce from a food bank but may not know how to prepare these items in a nutritious

way. Nutrition education can bridge this gap by offering cooking tips, meal planning strategies, and advice on preserving the nutritional value of foods.

Additionally, nutrition education promotes financial savvy when it comes to food shopping. Families learn how to budget for groceries, compare prices, and make cost-effective choices that don't compromise nutritional quality. This skill is particularly valuable in households facing economic constraints, where making every dollar count can make a significant difference in food security (Ayinde et al, 2020). Beyond individual households, nutrition education can foster community-wide resilience. By equipping families with the skills they need to manage their food resources effectively, communities become more self-sufficient and less dependent on emergency food assistance. This collective strength helps build a more stable environment where food security is maintained even in challenging times. In summary, while having access to food is essential for household food security, it's the application of nutrition education that truly maximizes its benefits. By providing families with the knowledge and tools they need to make healthy food choices and manage their resources effectively, we can ensure that every household not only has enough food but also the ability to use it in a way that supports their long-term health and well-being (Adeyeye, 2023).

Purpose of the Study

The specific aims of this present study is to examine:

1. the level of food insecurity on household in Edo State amidst Nigeria's uncertain times.
2. the level of household self-evaluation on food security in Edo State amidst Nigeria's uncertain times.
3. the impact of Nutrition Education on household variations on consumption of food in Edo State amidst Nigeria's uncertain times.

Research Questions

The following research questions guided the study.

1. What is the level of food insecurity on household in Edo State amidst Nigeria's uncertain times?
2. What is the level of household self-evaluation on food security in Edo State amidst Nigeria's uncertain times?
3. To what extent does Nutrition Education impact household variations on consumption of food in Edo State amidst Nigeria's uncertain times?

Methodology

The research methodology was structured to address the research questions by employing a quantitative approach in data collection techniques.

The study utilized a cross-sectional survey design to collect data at a single point in time. This design is chosen to capture the current state of food insecurity, household self-evaluation of food security, and the impact of nutrition education on food consumption patterns within households in Edo State. The study had a base line study in 2023 and endline study in 2024. The nutrition education was carried out to know the impact of the training on food consumption patterns of households in Edo state. This was done before the questionnaire was distributed in 2024.

The study focused on households in Edo State, specifically three local government areas in Edo central senatorial zones, namely; Esan West, Esan Central and Esan North East, using a sample of 445 households in 2023 and 454 in 2024. Data was collected using a structured questionnaire. The questionnaire consists of three sections corresponding to the research questions. Section A assessed the level of food insecurity among households using the Household Food Insecurity Access Scale (HFIAS) (Coates et al, 2007). This section included questions on

the frequency and severity of food insecurity experienced by households. Section B gathered data on how households self-evaluate their food security status. This includes subjective assessments and perceptions of food availability, access, and stability. Section C focused on the impact of nutrition education on food consumption patterns.

Data was collected over a period of three months in each of the year. Trained enumerators administered and retrieved the questionnaires.

Data from the questionnaires was analyzed using descriptive statistics of frequency and percentage to determine the prevalence and severity of food insecurity, as well as household self-evaluation of food security and impact of nutrition education and changes in food consumption patterns.

Results

Research Question One: What is the level of food insecurity on household in Edo State amidst Nigeria’s uncertain times? (HH means Household)

Table 1;

Household food insecurity Access Scale		Percentage frequency of occurrence of food insecurity situation							
		None		Rarely		Sometimes		Often	
		2023	2024	2023	2024	2023	2024	2023	2024
Questions.									
1)	Worry that no enough food.	36.2	28.9	25.2	16.3	30.6	46.7	8.1	8.1
2)	Not able to eat preferred food.	27.6	17.6	27.2	24.7	34.6	45.6	10.6	12.1
3)	HH member eat limited variety	29.4	26.0	25.8	22.2	34.2	40.3	10.6	11.5
4)	HH eat food they did not want	27.6	18.5	25.8	22.9	37.8	49.3	8.8	9.3
5)	Eat smaller meal than needed	43.4	33.9	21.3	17.2	29.7	39.2	7.6	9.7
6)	HH eat fewer meals in a day	42.7	37.4	22.5	16.1	27.2	38.3	7.6	8.1
7)	Ever no food of any kind	64.7	58.8	13.3	11.0	17.5	24.2	4.5	5.9
8)	Go to sleep hungry, no food	65.8	74.7	18.0	10.1	14.4	12.6	1.8	2.6
9)	Go whole day & night no food	75.5	83.0	12.4	7.5	11.5	7.0	0.7	2.4

The table above shows that the trend among at-risk households (those who answered “sometimes” or “often”) indicates a rise in food insecurity between 2023 and 2024 across all nine measured areas. Households that reported “None” or “Rarely” were generally classified as food secure. While fewer households experienced going a whole day without food or went to bed hungry in both years, the most common issues reported were the inability to eat preferred foods and having a limited variety of food.

Table 2; Research Question Two: What is the level of household self-evaluation on food security in Edo State amidst Nigeria's uncertain times?

Variable	2023		2024		
	Frequency	Percentage	Frequency	Percentage	
What is your opinion on your household food security	Always food insecure	317	71.2	20	4.4
	Sometimes food insecure	25	5.6	355	78.2
	Food secure	103	23.1	79	17.4
	Total	445	100.0	454	100.0
Do you experience food scarcity in your household	Not at all	96	21.6	62	13.7
	Sometimes	18	4.0	18	4.0
	Most of the time	331	74.4	374	82.4
	Total	445	100.0	454	100.0
If yes, how long is the food scarcity	0-2 months	190	42.7	174	38.6
	Over 2 months	225	57.3	280	61.7
	Total	445	100.0	454	100.0
The main month of food scarcity	April	163	36.6	207	46.5
	May	86	19.3	75	16.9
Main months of food plenty	July	66	14.8	225	50.6
	August	216	48.5	165	36.3
The main source of food	Garden	407	91.5	397	87.4
Did your household have a surplus for sale.	Yes	127	28.5	140	30.8
	No	318	71.5	314	69.2
	None	417	93.7	27	5.9
What is the main food reserve in this household	Food in store/house	8	1.8	397	83.5
	Granary	12	2.7	3	0.7
	Food in garden	8	1.8	45	9.9
	Total	445	100.0	454	100.0

The analysis of household food security reveals that a significant portion of the population experiences varying degrees of food insecurity. Specifically, 71.2% of households are always food insecure, while 5.6% experience food insecurity sometimes, and 23.1% are food secure.

Regarding the frequency of food scarcity, 21.6 % of households report that they do not experience food scarcity at all, 4.0 % experience it sometimes, and 74.4% face food scarcity most of the time. When it comes to the duration of food scarcity, 42.7% of households face food scarcity for 0-2 months, while 57.3% experience it for over 2 months. The main months of food scarcity are April, reported by 36.6% of households, and May, reported by 19.3%. Conversely, the months of food plenty are July, with 14.8%, and August, with 48.5%.

The primary source of food for most households is the garden, utilized by 91.5%. Additionally, 28.5% of households have a food surplus available for sale, while 71.55% do not. In terms of food reserves, 1.8% of households rely on food stored in their houses, 93.7% have no food reserve, 2.7% use a granary, and another 1.8% rely on food from their garden.

Research Question Three: To what extent does Nutrition Education impact household variations on consumption of food in Edo State amidst Nigeria’s uncertain times?

Table 3

Food Group	Baseline 2023		End line 2024	
	Frequency	Percent	Frequency	Percent
Main staples	445	100.00	451	99.3
Pulses	429	96.4	436	96.0
Vegetables	443	99.6	451	99.3
Fruits	243	54.6	312	68.7
Meat/Fish	311	69.6	321	70.7
Milk	321	72.1	333	73.3
Sugar	395	88.8	444	94.7
Oil	400	89.9	444	97.8

The analysis of household food consumption patterns from the baseline in 2023 to the end line in 2024 indicates a notable impact of nutrition education on food consumption habits. The table shows that consumption of main staples remained relatively stable, with a slight increase from 445 households (100.0%) at baseline to 451 households (99.3%) at end line. This consistency suggests that while main staples are a consistent part of the diet, nutrition education may not significantly alter their consumption frequency. The frequency of pulse consumption decreased marginally from 429 households (96.4%) to 436 households (96.0%). This slight decrease indicates a minor shift in consumption patterns but remains relatively stable. The consumption of vegetables showed a small increase, with 443 households (99.6%) at baseline and 451 households (99.3%) at end line. This suggests that vegetables continue to be a staple in household diets, with a slight increase in consumption frequency. There was a significant

increase in fruit consumption, from 243 households (54.6%) at baseline to 312 households (68.7%) at end line. This substantial rise indicates a positive impact of nutrition education in encouraging fruit consumption. The frequency of meat and fish consumption remained fairly stable, with 311 households (69.6%) at baseline and 321 households (70.7%) at end line. This stability suggests that nutrition education may not have had a strong impact on meat and fish consumption. Consumption of milk increased from 321 households (72.1%) to 333 households (73.3%). This modest increase may reflect a positive influence of nutrition education on milk consumption. There was a notable increase in sugar consumption, from 395 households (88.8%) to 444 households (94.7%). This increase could indicate a shift towards higher sugar intake, potentially due to increased availability or changes in dietary preferences. The frequency of oil consumption increased significantly, from 400 households (89.9%) to 444 households (97.8%). This substantial rise suggests that nutrition education might have led to higher consumption of cooking oils, possibly due to increased awareness of different types of oils and their uses. Overall, the data suggests that nutrition education has had a mixed impact on household food consumption patterns. While there are increases in the consumption of fruits, milk, and oil, some areas like main staples and pulses remain stable, and there is an unexpected rise in sugar consumption. This indicates that while nutrition education can influence certain dietary behaviors positively, its effects may vary across different food groups.

Conclusion

Food insecurity remains a critical issue in Nigeria, the most populous nation in Africa. Approximately 40% of the population lives below the poverty line, struggling to afford a balanced daily diet. The country faces a high under-five malnutrition rate, standing at 37%. A significant factor contributing to this is insufficient food security, which is further strained by environmental factors like rainfall variability, droughts, and economic instability. The growing insecurity in many regions also exacerbates the problem.

Recommendations

To address these challenges of food insecurity, a collaborative approach is essential. Government, private organizations, international bodies, stakeholders, and concerned individuals must work together to tackle food insecurity. Additionally, a bottom-up approach could ensure the population's involvement in combating these issues, promoting a more inclusive solution to Nigeria's food security challenges. This can be achieved by giving quality nutrition education and participatory planning involving community, cultural and government officials in design of activities, decision making to strengthen implementation, monitoring and evaluation. Expanding microfinance project to increase livestock distribution and continue to empower households in records keeping involving production. Help farmers access high value staple crops to increase food production and incomes, in addition to encouraging households to have vegetable gardens.

References

- Adeyeye, S. A. O. (2023). The role of food processing and appropriate storage technologies in ensuring food security and food availability in Africa. *Nutrition & Food Science*, 47(1), 122–139. <https://doi.org/10.1108/NFS-05-2016-0076>
- Ayinde, I. A., Otekunrin, O. A., Akinbode, S. O., & Otekunrin, O. A. (2020). Food security in Nigeria: Impetus for growth and development. *Journal of Agriculture Economics and Rural Development*, 6(2), 808–820.
- Berkman, L. F., & Glass, T. (2020). Social integration, social networks, social support, and health. In L. F. Berkman & I. Kawachi (Eds.), *Social epidemiology* (pp. 137–173). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780195089190.003.0002>

- Chiaka, J. C., Zhen, L., Yunfeng, H., Xiao, Y., Muhirwa, F., & et al. (2022). Smallholder farmers' contribution to food production in Nigeria. *Frontiers in Nutrition*, 9, 916678. <https://doi.org/10.3389/fnut.2022.916678>
- Coates, J. , Swindale, A., and Bilinsky, P. (2007) Household food insecurity access scale for measurement of food access. Version 3
- Food and Agriculture Organization (FAO). (2021). *The state of food security and nutrition in the world 2021: Transforming food systems for food security, improved nutrition and affordable healthy diets for all*. FAO. <http://www.fao.org/3/cb4474en/cb4474en.pdf>
- Nwozor, A., Olanrewaju, J., & Ake, M. (2023). National insecurity and the challenges of food security in Nigeria. *Academic Journal of Interdisciplinary Studies*, 8(4), 9–20.
- Olamide, O., & et al. (2024). Household food security; Nutrition security; Nigeria. *Journal of Medical Case Studies*, 2(1), 000124. <https://doi.org/10.46748/jmcs.2024.000124>
- United Nations Children's Fund (UNICEF). (2021). *The state of the world's children 2019: Children, food and nutrition – Growing well in a changing world*. UNICEF. <https://www.unicef.org/reports/state-worlds-children-2019>
- World Health Organization (WHO). (2020). *Nutrition in emergencies*. WHO. <https://www.who.int/nutrition/topics/emergencies/en/>