

Influence of Nutrition Education in Strengthening Community Resilience to Food Insecurity At The Federal University of Education, Zaria

Rabi Shehu D, Christiana Oyigowo.A, Zainab Abubakar,
Abigail Isaac A & Aisha Haruna B

Abstract

This study investigated the role of nutrition education in strengthening community resilience to food insecurity at the Federal University of Education, Zaria. Specifically, the objectives were to examine the impact of nutrition education on the dietary habits of community members and to assess the extent to which nutrition education enhances community resilience strategies against food insecurity. Two null hypotheses were formulated and tested at a 0.05 significance level. The study adopted a descriptive survey research design. The population consisted of 95 staff and students of the Federal University of Education, Zaria. Using a simple random sampling technique, 77 respondents were selected as the sample size. A structured questionnaire was used as the instrument for data collection. Descriptive statistics using mean and standard deviation; and inferential statistics using Chi-square test was employed for data analysis. The findings revealed that nutrition education significantly improved the dietary habits of community members and strengthened their resilience strategies against food insecurity. The null hypotheses was rejected, confirming a positive and significant role of nutrition education. It was concluded that integrating nutrition education programs contributes effectively to promoting healthier food practices and enhancing the adaptive capacity of university communities against food insecurity. It is recommended that the Federal University of Education, Zaria, should incorporate structured nutrition education modules into general studies courses and orientation programs for both staff and students. This will ensure that the community members are consistently informed about healthy eating practices and food security strategies.

Keywords: Nutritional Education, Community, Resilience, Food Insecurity

Introduction

Food security is a central concern globally, and Nigeria continues to face persistent challenges related to hunger and malnutrition, especially in northern regions where climatic shocks, insecurity and rising food prices have intensified the problem (Akpogheli, 2024). The Food and Agriculture Organization (FAO) identifies food security as comprising

four dimensions: availability, access, utilization, and stability, all of which are increasing strain in Sub-Saharan Africa (FAO, 2021). Within this context, universities and other higher institutions are not exempt; students and staff often encounter food insecurity due to limited financial resources, rising food costs and poor dietary diversity (Assilian, 2024).

Nutrition education has been recognized as a vital tool for improving dietary practices and enhancing knowledge, attitudes and behaviors toward food and nutrition (Péneau, 2024).

Beyond education, strengthening community resilience plays a critical role in sustaining food security, especially in resource-constrained environments like tertiary institutions. Community resilience approaches such as establishing campus gardens, student food cooperatives, and saving groups enhance the capacity of individuals and communities to adapt to shocks and maintain stable food access (Béné, 2020; Akinkuolie et al., 2025). When combined with nutrition education, these resilience strategies create a dual pathway: addressing immediate dietary needs while building adaptive capacity for long-term stability. Despite growing recognition of these strategies, there is limited research specifically examining how integrated nutrition education and resilience-building initiatives impact food security within Nigerian university contexts. At the Federal University of Education, Zaria, where students and staff interact with a dynamic food environment shaped by on-campus vendors, hostels, and local markets, such an investigation is timely and relevant. Understanding these linkages will provide evidence-based recommendations to improve campus food environments, strengthen coping mechanisms, and ultimately enhance food security outcomes (Assilian et al., 2024; FAO, 2021).

Statement of the Problem

Food insecurity remains a growing concern among students, teachers and communities in Nigeria. Despite efforts to boost food production and improve agricultural practices, access to sufficient, safe and nutritious food continues to be a

major challenge, particularly in educational environment like the Federal University of Education, Zaria. Many students face difficulties in securing balanced meals, which directly affects their health, academic performance and psychological well-being (FAO, 2022). Without adequate nutrition knowledge, coping with these food-related challenges becomes even more difficult, further deepening the cycle of vulnerability.

Nutrition education has been recognized globally as a key strategy for promoting healthier eating habits and empowering individuals to make informed food choices, however, there is a noticeable gap in the implementation and evaluation of nutrition education programs within Nigerian tertiary institutions. At the Federal University of Education, Zaria, there appears to be limited structured nutritional interventions targeted at equipping students and community members with practical knowledge on how to navigate periods of food scarcity. This lack of educational support can leave communities ill-prepared to adopt resilient coping strategies necessary for mitigating the impacts of food insecurity.

Ivers and Cullen (2023) revealed that community resilience to food insecurity can be enhanced through initiatives that educate individuals on sustainable dietary practices, food preservation methods and the importance of diversified diets. In Zaria, there is insufficient empirical data on how effective nutrition education has been shown in strengthening resilience against food-related challenges. General agricultural practices or primary school nutrition programs, leaves a critical gap in understanding the specific needs and realities of university communities.

The changing environmental conditions, such as erratic rainfall patterns, flooding and consequent rising

food prices, have heightened the urgency for institutions to develop proactive resilience-building programs, (World Health Organization, 2020). If students and the wider university community are not equipped with adequate nutrition education, this will lead to increasingly susceptibility to the adverse effects of food insecurity. This situation not only threatens individual health outcomes but also undermines broader developmental goals related to education, economic productivity and community stability. It becomes imperative to investigate the role of nutrition education in strengthening community resilience to food insecurity at the Federal University of Education, Zaria. Understanding the extent to which nutrition knowledge influences dietary behaviors and coping strategies will provide valuable insights for designing targeted interventions. Such evidence-based programs could significantly improve the capacity of individuals and communities to adapt to food insecurity challenges, fostering a more resilient and healthier academic environment.

Objectives of the Study

The main objective of this study was impact of nutritional education in strengthening community resilience to food insecurity at Federal University of Education, Zaria, specifically sought o:

1. Examine the impact of nutrition education on the dietary habits of community members at the Federal University of Education, Zaria.
2. Assess the extent to which nutrition education enhances community resilience strategies against food insecurity at the Federal University of Education, Zaria.

Research Hypotheses

1. H_{01} : Nutrition education has no significant impact on the dietary habits of community members at the Federal University of Education, Zaria.
2. H_{02} : Nutrition education does not significantly enhance community resilience strategies against food insecurity at the Federal University of Education, Zaria.

Methodology

Research Design

The study adopted a descriptive survey design. This design is appropriate because it allows the researcher to collect detailed information from a sample of staff and students concerning their experiences, knowledge, and practices related to nutritional education and food security resilience strategies.

Population of the Study

The target population of this study consisted of 10 staff and 85 students of the Federal University of Education, Zaria. This included lecturers from the Department of Home Economics and selected students who have received basic nutritional education.

Sampling and Sampling Technique

A sample size of 77 respondents was determined using simple random sampling of participants who were available and willing to participate in the study.

Instrument for Data Collection

The instrument used was a structured questionnaire titled, Nutrition Education and Community Resilience Questionnaire (NECRQ). The questionnaire was divided into three sections, A-C. Section A: Demographic information, Section B: Items on the impact of nutrition education on dietary habits, Section C: Items on the

influence of nutrition education on community resilience strategies. The items were based on a 5-point Likert scale of Strongly Agree (5), Agree (4), Undecided (3), Disagree (2), Strongly Disagree (1).

Method of Data Analysis

Both descriptive and inferential statistics was used to respond to the objectives and stated hypothesis. The data collected were analyzed using descriptive statistics, mean and standard deviation to answer the research questions, and inferential statistics, Chi-square test to test the research hypotheses at a 0.05 level of significance.

Results

Table 1 presents the result on the influence of nutrition education on the diet habits of students and teachers. The mean score is 4.22 with a standard deviation of 0.68. This indicates that respondents rated the impact of nutrition education on dietary habits highly, suggesting that nutrition education significantly improves healthy eating practices. The low standard deviation implies that responses were fairly consistent and clustered around the mean, showing a general agreement among respondents.

Table 1: Responses on Influence of Nutrition Education on the dietary habits of community members at the Federal University of Education, Zaria

Items	N	Mean	Standard Deviation	Interpretation
Impact of Nutrition Education on Dietary Habits	77	4.22	0.68	High Impact
Enhancement of Community Resilience Strategies	77	4.10	0.75	High Enhancement

Table 2 reveal that respondents generally agreed that nutrition education significantly enhances community resilience strategies against food insecurity at the Federal University of Education, Zaria. All the items recorded mean values above 4.00, indicating a high level of agreement. The overall grand mean score of 4.12 signifies that the respondents perceived nutrition education as having a high impact on

community resilience. Specifically, respondents agreed that nutrition education improved their ability to plan balanced diets (4.20) and develop better food preservation practices (4.08). It also encouraged small-scale gardening and food diversification (4.12 and 4.16 respectively), showing that the program instilled practical coping skills that enhance both household and community food security.

Table 2: Extent to Which Nutrition Education Enhances Community Resilience Strategies against Food Insecurity at Federal University of Education, Zaria

Items	Mean	Std. Deviation
Nutrition education has improved my ability to plan and manage balanced diets.	4.20	0.72
I have developed better food preservation and storage practices as a result of nutrition education.	4.08	0.81
Nutrition education has encouraged participation in small-scale gardening and household food production.	4.12	0.77
I diversify food sources to ensure consistent access to nutritious meals.	4.16	0.69
Nutrition education has strengthened understanding of coping mechanisms during food shortages.	4.06	0.83
Nutrition education programs promote community cooperation in managing food resources.	4.10	0.75
Grand Mean	4.12	

Chi-square Test on Nutrition Education has no Significant Impact on the Dietary Habits of Community Members shows the calculated chi-square (13.45), exceeds

critical value (5.99) Therefore the null hypothesis was rejected. This indicates that nutrition education has a statistically significant impact on dietary habits

Table 3: Chi-square Test on Nutrition Education has no Significant Impact on the Dietary Habits of Community Members

Hypotheses	X ² Calculated	X ² Critical (0.05)	Decision
H ₀₁ No Significant Impact on Dietary Habits	13.45	5.99	Reject H ₀₁

The chi-square analysis on Table 3 shows a calculated value of $\chi^2 = 11.28$, which is greater than the critical value of $\chi^2 = 5.99$ at 0.05 level of significance. Consequently,

the null hypothesis was rejected, implying that nutrition education significantly enhances community resilience against food insecurity.

Table 4: Chi-square Test for Hypotheses on Nutrition Education does not Significantly Enhance Community Resilience Strategies against Food Insecurity

Hypotheses	X ² Calculated	X ² Critical (0.05)	Decision
H ₀₂ No Significant Enhancement of Community Resilience	11.28	5.99	Reject H ₀₂

Discussion

Findings on Table 1 demonstrates that individuals who participated in nutrition

education programs were better equipped with coping strategies such as food

preservation, small-scale gardening, and dietary diversification. These strategies strengthen the community's capacity to manage food shortages and maintain nutritional stability during economic or environmental challenges. The outcome reinforces the view that nutritional education extends beyond individual behavior change, it fosters collective adaptation and preparedness within communities.

The finding is consistent with Adewale and James (2021), who noted that community focused nutrition education improves household resilience by promoting food production and sustainable consumption patterns. In the same vein, Patel et al. (2020) revealed that nutrition education serves as a critical tool for building resilient societies capable of responding effectively to food-related shocks. Nutrition education has a significant positive impact on the dietary habits of staff and students at the Federal University of Education, Zaria.

The first hypothesis stated that there is no significant impact of nutrition education on dietary habits. Based on this result, the null hypothesis was rejected, indicating that nutrition education has a statistically significant impact on dietary habits among respondents. Nutrition education has positively influenced the respondents' food choices, awareness of balanced diets and adoption of healthier eating practices. These results suggest that through nutrition education, individuals are better informed about nutrient requirements, food diversity and meal planning, leading to healthier consumption patterns. Oluwafemi and Adediran (2020) observed that nutrition education increases individuals' capability to make healthier dietary decisions and reduce malnutrition risks. Sustained and well-structured nutrition education can effectively promote desirable changes in dietary behavior

among students and staff in higher education institutions.

Nutrition education plays a pivotal role in promoting healthier dietary habits and enhancing community resilience against food insecurity. These dual effects of improved dietary practices and strengthening resilience demonstrate that nutrition education serves as a sustainable pathway for addressing food insecurity challenges in Zaria Metropolis and similar vulnerable environments.

The implications of these findings are multifaceted. First, they highlight the need for higher education institutions to integrate nutrition education into their curricula as a means of equipping students and staff with lifelong skills for healthy living. The results also demonstrate that nutrition education can serve as a community development tool, strengthening resilience and promoting sustainable practices such as home gardening and food preservation. These findings therefore support the argument that knowledge-based interventions are essential components of community resilience frameworks, (Akinkuolie, 2025).

Conclusion and Recommendation

The study concludes that nutrition education significantly enhances community resilience strategies against food insecurity. Integrating nutrition education into institutional and community initiatives can play a vital role in ensuring food security, promoting public health, and strengthening sustainable development efforts within academic communities like the Federal University of Education, Zaria. Based on the findings, the following recommendations are made:

1. The Federal University of Education, Zaria, should incorporate structured nutrition education into general studies courses and orientation programs

for both staff and students. This will ensure that the community members are consistently informed about healthy eating practices and food security strategies.

2. The university should foster partnerships with local health institutions and agricultural extension services to support nutrition education with practical food production initiatives.

References

- Akinkuolie, T. A., Ogunbode, T. O., & Adekiya, A. O. (2025). Resilience to climate-induced food insecurity in Nigeria: A systematic review of the role of adaptation strategies in flood and drought mitigation. *Frontiers in Sustainable Food Systems*, 9(1), 1–15. <https://doi.org/10.3389/fsufs.2025.1524135>
- Akpogheli, E. O., Chiadika, E. O., Edo, G. I., Al-Baitai, A. Y., Zainulabdeen, K., Keremah, S. C., ... Ekpekpo, L. D. (2024). Malnutrition and food insecurity in northern Nigeria: An insight into the United Nations World Food Programme (WFP) in Nigeria. *Discover Food*, 4(1), 1–12. <https://doi.org/10.1007/s44187-024-00081-x>
- Assilian, A., Péneau, S., Julia, C., Gross, O., Oppert, J. M., & Bellicha, A. (2024). Improving student diet and food security in higher education using participatory and co-creation approaches: A systematic review. *International Journal of Behavioral Nutrition and Physical Activity*, 21(1), 1–23. <https://doi.org/10.1186/s12966-024-01503-3>
- Béné, C. (2020). Resilience of local food systems and links to food security – A review of some important concepts in the context of COVID-19 and other shocks. *Food Security*, 12(4), 805–822. <https://doi.org/10.1007/s12571-020-01076-1>
- Food and Agriculture Organization [FAO]. (2021). Nigeria multisectoral plan of action for food and nutrition (2021–2025). Rome: FAO. <https://www.fao.org/faolex>
- Food and Agriculture Organization. (2022). The State of Food Security and Nutrition in the World 2022. FAO. <https://doi.org/10.4060/cc0639en>
- Ivers, L. C., & Cullen, K. A. (2023). Food insecurity: Special considerations for women. *The American Journal of Clinical Nutrition*, 94(6), 1740S–1744S. <https://doi.org/10.3945/ajcn.111.012616>
- Seligman, H. K., Laraia, B. A., & Kushel, M. B. (2010). Food insecurity is associated with chronic disease among low-income NHANES participants. *The Journal of Nutrition*, 140(2), 304–310. <https://doi.org/10.3945/jn.109.112573>
- World Health Organization. (2020). Healthy diet. <https://www.who.int/news-room/fact-sheets/detail/healthy-diet>