

**ENHANCING FOOD SECURITY THROUGH COOPERATIVE-BASED
NUTRITION EDUCATION, AMONG WOMEN COOPERATORS IN
RURAL COMMUNITIES OF IMO STATE, NIGERIA**

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ABSTRACT

This study investigated enhancing food security through cooperative-based nutrition education: a study of women cooperative societies in rural communities of Imo State, Nigeria. The study was initiated due to the lack of access to accurate, timely, and culturally relevant nutrition education; poor dietary habits; and insufficient nutrition awareness, resulting in undernutrition, micronutrient deficiencies, and increased vulnerability to illness in rural communities in Imo State. The study adopted a descriptive survey research design. The study population consisted of all the 312 registered women's cooperative groups with an estimated membership of 9,360 women in the rural areas of Imo State. The study sample consisted of 384 respondents (members of women's cooperative societies) determined using Yamane's (1967) formula for a finite population and selected through a multi-staged sampling technique. The Cooperative-Based Nutrition Education Questionnaire (CBNEQ) ($r = 0.84$) was used to obtain the data. Mean and standard deviation were used to answer the research questions. Findings showed that Cooperative-based training programmes provided minimal nutrition education. Major challenges faced by women's cooperative societies in implementing nutrition education initiatives for food security include: lack of trained facilitators on nutrition, inadequate funding for training materials, and limited time for practical demonstrations, while strategies that can improve the effectiveness of nutrition education through women's cooperative societies include: Train-the-trainer model for cooperative advocates; regular agenda slot for nutrition and practical cooking demonstration with local or seasonal food. The study advocated the integration of nutrition education within cooperative frameworks and the prioritization of practical, cost-effective demonstrations, among other recommendations.

Keywords: Food security, Cooperative-based, Nutrition Education, Women cooperative Societies, Rural communities

INTRODUCTION

Food security remains an issue of topical concern in rural Nigeria, particularly in Imo State, where many people farm on small pieces of land for subsistence, coupled with the challenges of regular access to adequate, healthy food. This can be attributed to multifaceted challenges, including a decline in agricultural productivity, the impact of climate change and environmental degradation, rising food crises and economic hardship, as well as conflict and insecurity.

Women play fundamental roles in ensuring household nutrition through meal planning and preparation, food procurement and budgeting, child and maternal nutrition, caregiving, and household dietary decision-making (Folayan et al., 2023; Onah et al., 2022). The tasks of purchasing food items, balancing costs with nutritional values, deciding on what meal to prepare, preparing and dishing out meals are all perceived as inherent responsibilities of women. However, their access to organized nutrition education is often limited, probably as a result of the dearth of such information within their social circle. Limited access to nutrition education and consequent lack of nutrition awareness among women contribute significantly to undernutrition, poor dietary choices, and preventable health conditions. On the contrary, adequate information on nutrition and rightful dietary practices not only places women in a better position for effective meal planning, food procurement, and preparation, but also ensures adequate dietary choices for their family's wellbeing. Women can acquire information on nutrition and dietary practices through non-formal educational settings like cooperative societies.

Women cooperative societies are community-based groups that work together to reach economic, social, and educational goals. According to Cooperatives Europe (2024), cooperatives represent peoples centered business which empower citizens to fulfill their human, social, and economic rights and needs, and their principles are based on self-help, democratic ownership, and concern for the community. Cooperative societies are non-formal adult education settings that offer a strategic platform for adult learning and grassroots empowerment. It is characterized with flexible participatory approach that is rooted in local realities in tandem with adult learning principles.

The WHO (2022) stated that improvements in maternal health and an increase in child survival rates are attained when mothers possess nutritional knowledge. In addition, community-driven behavioural change is fostered as members of cooperatives influence one another's attitudes and behaviour, paving the way for peer learning, mutual accountability, and collaborative efforts. Cooperatives do incorporate agricultural training in nutrition education, consequently aiding sustainable living. Members acquire skills in cultivating nutrient-dense crops, preserving food, and using profits to improve home nutrition. World Bank (2024) affirmed that nutrition-sensitive agriculture via cooperatives enhances household food self-sufficiency and diminishes reliance on food assistance or expensive processed foods. Cooperative societies work as decentralised hubs for nutrition education, thereby mitigating knowledge gaps and enhancing service convenience. It links members to health extension services, governmental initiatives, and food assistance schemes in rural settings where health and nutrition information is either scarce or unattainable. In this regard, women who are members of cooperative societies leverage these interventions to better their lot and that of their family members.

Researches show that cooperative organisations are often hindered by numerous problems in integrating nutritional education into their projects, including a lack of competent facilitators and insufficient financial resources to sustain educational initiatives (Disciplines.ng, 2024; Disciplines.ng, 2023). Besides, differing organisational schedules and limited time for practical

demonstrations decrease the emphasis on nutrition education (Khan, 2021). Economic restrictions, like increased food prices and periodic availability challenges, deter households' capacity to carry out nutritional guidance, hence reducing the efficiency of nutrition programmes in cooperative settings (Okeke and Ojo, 2024).

In Imo State, women in most rural areas carry out major functions with regard to family food provision; they lack access to specific, appropriate, and traditionally relevant nutrition education. Aside from the accessibility of cultivatable land and inheritance of sustainable agriculture, unsuitable eating habits, deficient nutritional awareness, and constrained access to healthcare services have led to undernutrition, micronutrient shortages, and increased vulnerability to illness. Food consumed in most rural areas is starchy staples such as cassava and yam, with a restricted combination of vegetables, legumes, or protein sources. In addition, most families are famished during planting or drought season due to inadequate food preservation and planning; besides, they are hesitant to get involved in collaborative endeavours, as most of them are ignorant of the benefits of collective agriculture, resource sharing, or nutrition-oriented education. A cross-sectional study conducted among pregnant women attending antenatal clinics in Owerri, Imo State, revealed that 39.0% of the women were anaemic, with 17% experiencing mild anaemia, 17% moderate anaemia, and 5% severe anaemia, highlighting the urgent need for intensified nutrition education and maternal nutrition interventions in rural communities (Anoshirike et al., 2019). This **emphasizes a dire need for nutrition education**, mostly cooperative-based nutrition education, in upholding maternal health and food security in rural Imo communities.

Granting that women in rural communities engage in agriculture and cooperative activities, extension services and training programmes rarely include nutritional education. Research on agricultural extension services in Nigeria indicates that nutritional objectives are inadequately incorporated into agricultural extension curricula and programmes, which predominantly emphasize crop productivity and yield enhancement. In contrast, nutrition-sensitive elements such as dietary diversity, nutrition education, and biofortification are irregularly executed and largely unorganised (Adeyemi et al., 2023; Ajieroh et al., 2023). Similarly, Hambolu (2021) observed that Cooperative societies in rural Nigeria concentrate on financial support services, including microcredit, savings mobilisation, and input provision for members, with less evidence of organised nutrition education initiatives in their programmes. This scenario is also applicable to cooperative organisations in rural Imo state; consequently, cooperative meetings frequently omit nutrition from their discussions, thereby perpetuating the divide between food production and healthy food preparation. This gap underscored a missed opportunity to leverage existing women's cooperatives as instruments for advancing improved health and dietary options.

Women cooperative societies, as stable community-based organisations, provide a good opportunity to address this gap through targeted nutrition education. Cooperative-based programmes can improve household nutrition practices and foster constant food security in rural areas by equipping women with pertinent, traditionally suitable nutritional knowledge and skills. However, women's cooperative societies in rural Imo State, though excelling in credit and savings, have not fused nutrition education into their normal training curricula. In this regard, a crucial opportunity to improve members' nutritional knowledge and skills is being relegated to the background, and the potential to transform household food security remains untapped.

This disparity underscores a dire need to integrate specialised nutrition education into women's cooperative initiatives to enable rural women to work for food security and sustainable health in Imo State. This study investigated how cooperative-based nutrition education enhanced food security outcomes among women in rural Imo State.

Objectives of the Study

The specific objectives of the study were to:

1. Determine the extent to which cooperative-based training programmes address nutrition education and dietary practices among women in rural Imo State.
2. Identify the major challenges faced by women's cooperative societies in implementing nutrition education initiatives for food security.
3. Recommend strategies for enhancing nutrition education in rural cooperative-based settings.

METHODOLOGY

This study adopted a descriptive survey design. The population consisted of all the 312 registered women's cooperative groups with an estimated membership of 9,360 women in rural areas of Imo State (Imo State Cooperative Department, 2024). The study sample consisted of 384 respondents (members of women cooperative societies) determined using Yamane's (1967) formula for a finite population and selected through a multi-stage sampling technique. The chosen rural local government areas (LGAs) were Oru-East, Isu, Ngor Okpala, and Owerri North.

Cooperative-Based Nutrition Education Questionnaire (CBNEQ), with a reliability coefficient of 0.84, was used to elicit appropriate information from the respondents. With the help of three research assistants, 384 copies of the questionnaire were administered, and 359 (93%) were returned and used for the study. Mean and standard deviation were used to answer the research questions. Decision Rule – A mean score of 2.5 and above was interpreted as “High” or “Agree,” while scores below 2.5 were considered “Low” or “Disagree.”

RESULTS AND DISCUSSION

Research Question 1

To what extent do cooperative-based training programmes address nutrition education and dietary practices among women in rural Imo State?

Table 1. Mean Ratings of the Extent Cooperative-Based Training Programmes Address Nutrition Education and Dietary Practices among Women in Rural Imo State

Item	Mean	Std Dev	Min	Max	Valid N
A1_ Nutrition topics appear regularly on meeting agendas	1.63	0.48	1	2	359
A2_ Sessions cover balanced diets and meal planning with local foods	1.62	0.49	1	2	359
A3_ Sessions cover maternal, infant and young child nutrition	1.25	0.43	1	2	359
A4_ Sessions cover food hygiene and safe water	1.87	0.6	1	3	359
A5_ Sessions cover micronutrient-rich crops	1.63	0.7	1	3	359
A6_ Sessions include a practical cooking demonstration	1.25	0.43	1	2	359
A7_ Guidance on budgeting/market choices for healthy diets	1.5	0.5	1	2	359
A8_ Guidance on kitchen/home gardens	1.13	0.33	1	2	359
A9_ Guidance on food storage/preservation	1.62	0.49	1	2	359
A10_ Monitoring/feedback after training	1.25	0.43	1	2	359
Grand Mean	1.48				

Table 1 shows that Cooperative-based training programmes address nutrition education to a very low extent, as none of the items measured up to 2.5. ‘Sessions cover food hygiene and safe water’ has a mean of 1.87 as the highest, while Guidance on kitchen/home gardens has 1.13 as the least.

Research Question 2

What are the major challenges faced by women's cooperative societies in implementing nutrition education initiatives for food security?

Table 2. Mean Rating of major challenges faced by women's cooperative societies in implementing nutrition education initiatives for food security

Item	Mean	Std Dev	Min	Max	Valid N
B1_ Lack of trained facilitators on nutrition	3.13	0.6	2	4	359
B2_ Insufficient funds for training materials	2.62	0.86	1	4	359
B3_ Low member attendance/irregular meetings	2.13	0.78	1	3	359
B4_ Competing agenda items crowd out nutrition topic	2.75	0.43	2	3	359
B5_ Limited time for practical demonstrations	3.13	0.6	2	4	359
B6_ Language/literacy barriers among members	1.75	0.83	1	3	359
B7_ Cultural beliefs or food taboos limiting diet change	1.87	0.33	1	2	359
B8_ High food prices limiting adoption of advice	3.13	0.33	3	4	359
B9_ Seasonal market access constraints to diverse foods	2.87	0.33	2	3	359
B10_ Lack of kitchen/ home garden space or inputs	2.38	0.49	2	3	359
B11_ Poor water/sanitation limiting food hygiene	1.75	0.43	1	2	359
B12_ No follow-up or counselling after training	3.38	0.7	2	4	359
Grand Mean	2.57				

Table 2 with the grand mean of 2.57 indicated that all the listed factors constituted major challenges faced by women's cooperative societies in implementing nutrition education initiatives for food security, with the exception of low member attendance/irregular meetings (2.13), language/literacy barriers among members (1.75), cultural beliefs or food taboos limiting diet change (1.87), and poor water/sanitation limiting food hygiene (1.75).

Research Question 3

What strategies can improve the effectiveness of nutrition education through women cooperative societies?

Table 3. Mean ratings of strategies that can improve the effectiveness of nutrition education through women cooperative societies

Item	Std		Min	Max	Valid N
	Mean	Dev			
C1_Train-the-trainer model for cooperative champions	3	0.5	2	4	359
C2_Regular agenda slot for nutrition	2.87	0.6	2	4	359
C3_Practical cooking demonstration with local or seasonal food	2.75	0.66	2	4	359
C4_Simple pictorial guide/translated materials	2	0	2	2	359
C5_Linkages with PHC/health education for joint sessions	2.87	0.93	1	4	359
C6_Kitchen/home -garden starter kits (seedlings, tools)	2.12	0.6	1	3	359
C7_Small savings/loan products for nutritious food purchases or poultry/fish rearing	3.13	0.33	3	4	359
C8_SMS/WhatsApp reminders and tips	2.5	0.5	2	3	359
C9_Market-day group buys to reduce cost of diverse foods	2.87	0.6	2	4	359
C10_Periodic household follow ups/counselling	3.13	0.6	2	4	359
C11_Involving husbands/household decision-makers in select sessions	2.12	0.33	2	3	359
C12_Partnership for fortified foods (iodized salt, vitamin-A oil, iron-folate)	2.87	0.6	2	4	359
Grand Mean	2.69				

Table 3 showed that respondents acknowledged all the suggested strategies as being helpful in improving the effectiveness of cooperative-based nutrition education with the exception of simple pictorial guide/translated materials (2), kitchen/home -garden starter kits (seedlings, tools) (2.12), and involving husbands/household decision-makers in select sessions (2.12).

The study showed that the cooperative-based training programme addressed nutrition education to a very low extent, with a grand mean of 1.48. Training on food hygiene and safe water has a mean of 1.87 as the highest, while Guidance on kitchen/home gardens has a mean of 1.13 as the least. This finding is in consonance with Hambolu (2021), who observed that Cooperative societies in rural Nigeria are mostly focused on financial support services, including microcredit, savings mobilisation, and input provision for members, with less evidence of organised nutrition education initiatives in their programmes. In other words, the primary objectives of cooperative societies in rural Imo State are to enhance members' economic welfare with restricted incorporation of programmes such as nutrition education that directly address health and dietary behaviours.

It was discovered from the study that major challenges faced by women's cooperative societies in implementing nutrition education initiatives for food security include: lack of trained facilitators on nutrition (3.13), insufficient funds for training materials (2.62), competing agenda items crowd out nutrition topic (2.75), limited time for practical demonstrations (3.13), high food prices limiting adoption of advice (3.13), seasonal market access constraints to diverse foods (2.87) No followup or counselling after training (3.38). These findings agreed with Disciplines.ng, 2024; Disciplines.ng, 2023; Khan, 2021, and Okeke & Ojo, 2024, who highlighted major challenges of implementing nutrition education in cooperative organisations as a dearth of facilitators, insufficient funds, competing organizational priorities, limited time, high food prices, and seasonal access issues.

The study also showed that strategies that can improve the effectiveness of nutrition education through women cooperative societies include: Train-the-trainer model for cooperative champions (3); Regular agenda slot for nutrition (2.87); Practical cooking demonstration with local or seasonal food (2.75); Linkages with PHC/health education for joint sessions (2.87); Small savings/loan products for nutritious food purchases or poultry/fish rearing (3.13); SMS/WhatsApp reminders and tips (2.5); Market-day group buys to reduce cost of diverse foods (2.87); Periodic household follow ups/counselling (3.13); Partnership for fortified foods (iodized salt, vitamin-A oil, iron-folate) (2.87). The findings aligned with Knowles' (1973) adult learning principles, which underpin the formulation of educational interventions that are practical and relevant. The findings are also in concord with Abdsalam and Jibril (2021), Harris and Saghai (2022), Ojo and Akande (2023), Sani and Umeh (2024), Nimako and Dzator (2025), and Arthur and Owusu (2023), who highlighted the above strategies for improving the effectiveness of nutrition education through women cooperative societies.

CONCLUSION

Cooperative-based training programmes address nutrition education to a very low extent. Major challenges faced by women's cooperative societies in implementing nutrition education initiatives for food security are: lack of trained facilitators on nutrition, insufficient funds for training materials, competing agenda items crowd out the nutrition topic, limited time for practical demonstrations, high food prices limiting adoption of advice, seasonal market access constraints to diverse foods, and no follow-up or counselling after training.

Strategies that can improve the effectiveness of nutrition education through women cooperative societies are: Train-the-trainer model for cooperative champions; Regular agenda slot for nutrition; Practical cooking demonstration with local or seasonal food; Linkages with PHC/health education for joint sessions; Small savings/loan products for nutritious food purchases or poultry/fish rearing; SMS/WhatsApp reminders and tips; Market-day group buys to reduce cost of diverse foods; Periodic household follow ups/counselling; and Partnership for fortified foods (iodized salt, vitamin-A oil, iron-folate)

RECOMMENDATIONS

Based on the findings, the following recommendations were made:

Embedding Nutrition in Cooperative Frameworks- This can be achieved by integrating nutrition education in cooperative societies' annual activities through a designated monthly agenda slot of 10 -15 minutes during meetings. A Nutrition Focal Person (NFP) can be appointed and charged with the responsibility of organizing activities and reporting progress.

Implementing a Train-the-Trainer (ToT) Model to ease the shortage of facilitators. This can be done by soliciting the assistance of Local government health educators or PHC nutrition officers to train 2–3 cooperative advocates for each group.

Emphasizing practical, low-cost demonstration – this can be actualized by conducting quarterly cooking demonstrations with seasonal food and affordable local ingredients, highlighting dietary diversity and nutritious complementary feeding.

Implementing market-day collective purchasing -this is done by organizing collective procurement during market days to reduce pricing. Coordination of responsibilities should be rotated among members.

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