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Livelihood Status and Usage of Nutrition-Sensitive Advisory Services among Rural Farming Households in Kwara State, Nigeria

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ABSTRACT

Good nutrition strengthens the immune system and reduces disease risks. In Nigeria, malnutrition is prevalent in rural agrarian areas. Despite deploying Nutrition-Sensitive Advisory Services, statistics show no significant improvement. The objectives of the study were to examine the livelihood status of rural farming households, assess the extent of use of Nutrition-Sensitive Advisory Services, analyze the relationship between livelihood status and use of Nutrition-Sensitive Advisory Services, and identify constraints to the use of Nutrition-Sensitive Advisory Services. Using a three-stage sampling procedure, 390 households were selected from a population of 177,260 rural farming households where Nutrition-Sensitive Advisory Services had been disseminated. Data were collected using an interview schedule and analyzed using frequency counts, percentages, standard deviation, and Pearson's Product-Moment Correlation Analysis. Findings indicated that rural farming households had a moderate livelihood status (Mean Livelihood Sustainability Index = 0.57), poor use of Nutrition-Sensitive Advisory Services ($\bar{x}$ = 0.47), and a positive correlation between livelihood status and use of Nutrition-Sensitive Advisory Services (r = 0.830, $p \leq 0.05$). Major constraints to use of Nutrition-Sensitive Advisory Services were unaffordability of food varieties ($\bar{x}$ = 2.55), poor availability of food varieties ($\bar{x}$ = 2.23), and poor follow-up by extension workers ($\bar{x}$ = 2.20). The study concluded that although livelihood status was moderate, use of Nutrition-Sensitive Advisory Services was poor and could be improved by enhancing livelihood capitals. A multi-dimensional approach to improving rural farming households' livelihood status was recommended.

Keywords: Livelihood Capitals, Nutrition, Malnutrition, Households, Immune System, Advisory Services.

INTRODUCTION

In 2019, an estimated two billion people lacked regular access to safe, nutritious, and sufficient food, with projections indicating an increase of 10 million in one year and nearly 60 million in five years (FAO, 2020). Africa, with over 250 million undernourished people, experiences the fastest growth in food insecurity. Globally, nearly 750 million people faced severe food and nutrient insecurity. In 2019, 144 million children under five suffered from stunting, with three-quarters in Southern Asia and sub-Saharan Africa. Additionally, 47 million children under five were affected by wasting due to poor nutrient intake and infections (UNSTAT, 2020). If the trend persists, hunger and malnutrition could surpass 840 million people by 2030, affecting 9.8% of the global population. Nigeria faces a severe nutrition crisis, with one in three children stunted and 7.8% wasted (DHS, 2013). About 1.9 million children suffer from acute malnutrition, increasing the risk of premature death

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(Emeagi & Apugo, 2022). Furthermore, 71% of children and 48% of women of reproductive age are anaemic (Spring, 2018; Msughter, 2021). Addressing malnutrition is critical to improving global and national health outcomes.

Achieving nutrition security requires an adequately diversified diet, access to a healthy environment, an adequate health service system, and proper care and feeding practices (Simelane & Worth, 2020; Fanzo *et al.*, 2021). Efforts at improving the nutritional intake of the populace in most developing countries have yielded some results among the affluent and educated urban dwellers, not much has been achieved among rural dwellers. In Nigeria, for instance, rural communities, which are the hub of food production, are the most vulnerable to chronic food shortages, malnutrition, unbalanced nutrition, erratic food supply, poor quality foods, high food costs, and even a total lack of food (Owoo, 2020; Obayelu & Akpan, 2021). There is a high level of malnutrition among children in rural Nigeria. Also, adult malnutrition in the rural areas results in lower productivity on farms and in the labour market. To address these nutritional challenges in rural areas, innovative solutions are required; hence, the nutrition-sensitive advisory services.

Nutrition-sensitive Advisory Services (NAS) integrate nutrition education in their service using key messages that promote behaviour change that promote nutrition-sensitive agriculture, diversification of production to increase the range of food available at the household level through the cultivation of nutrient-rich food crops (e.g. leafy vegetables, biofortified crops) and animal-rearing practices (e.g. poultry, snails, small livestock). It also promotes the consumption of food crops and animal products that are available at the farm level to ensure they are used not only as sources of cash but also as food sources. NAS adapts to the characteristics of agro-ecologies and established dietary patterns and focuses on diversification of diets (not only staples but also food containing proteins and vitamins) and on hygienic practices of food preparation and consumption (Adeyemi *et al.*, 2023).

In Nigeria, nutrition-sensitive advisory services are primarily disseminated by extension agents. Traditionally, these agents have focused mainly on crop production, addressing the agricultural needs of farmers (Arokoyo, 2012; Ogunlade & Adebayo, 2017). However, the increasing importance of nutrition has led to the establishment of specialized sections within extension agencies, such as the Women in Agriculture program. This program specifically targets women, who are often responsible for household nutrition and food preparation. Through this initiative, extension agents provide nutrition education and advisory services, emphasizing the cultivation of nutrient-rich crops and the adoption of diverse, balanced diets. This approach ensures that nutritional messages are effectively communicated and implemented within households.

There are many programmes by the government, funding agencies, NGOs, and other international bodies to ensure nutrition security, as stated in Sustainable Development Goal (SDG) 2, is achieved in Nigeria. These include the Accelerating Nutrition Results in Nigeria (ANRiN), which aims to increase the utilization of quality, cost-effective nutrition services for pregnant and lactating women, adolescent girls, and children under five years of age. There is also the National Plan of Action on Food and Nutrition (NPAN) by the World Health Organization. This programme aims to improve the nutritional status of the population with particular emphasis on the most vulnerable groups (children, women, and the elderly).

Despite these programmes and more, statistics show no significant improvement in the malnutrition of rural farming households. One critical factor that could influence this outcome is the livelihood status of rural households. Livelihood assets, such as financial resources, physical assets (e.g., land, equipment), human capital (e.g., education, skills), social capital (e.g., networks, community support), and natural resources (e.g., water, soil fertility), play a crucial role in the uptake of Nutrition-Sensitive Advisory Services (NAS). Households with better financial resources can afford to invest in diversified, nutrient-rich crops and livestock,

while those with limited financial assets may struggle to do so. Physical assets like land and farming equipment enable the adoption of recommended agricultural practices promoted by NAS. Human capital, including knowledge and skills, enhances the ability to understand and implement NAS recommendations effectively. Social capital provides access to information, support, and resources through community networks, facilitating the uptake of NAS. Lastly, natural resources determine the feasibility of growing diverse crops and raising animals. Therefore, improving these livelihood assets is essential for enhancing the utilization of NAS, ultimately leading to better nutritional outcomes in rural areas.

It is based on this backdrop that the study sought to proffer answers to the following research questions;

1. What is the livelihood status of rural farming households in Kwara State?
2. To what extent do rural farming households use Nutrition-sensitive Advisory Services disseminated to them?
3. What constitutes constraints to the use of Nutrition-sensitive Advisory Services?

The main objective of the study is to analyse the livelihood status and usage of Nutrition-sensitive Advisory Services among rural farming households in Kwara State, Nigeria. The specific objectives are to examine the livelihood status of rural farming households, assess the use of NAS, and identify the constraints to the use of Nutrition-sensitive Advisory Services.

The study hypothesized that there is no significant relationship between the livelihood of rural farming households and the use of NAS.

This study is premised on the theory of behavioural change. Attitude, social norms, and behavioural control are the three factors that determine the intention of a person, these have a positive relationship to change action or dynamism. Hence theory of behavioural change can help identify factors that influence farmers' decisions to use nutrition-sensitive practices. For instance, understanding perceived barriers or social norms can inform strategies to improve the uptake of nutrition-related advisory services.

Methodology

The research was carried out in Kwara State, Nigeria. The state is located in the Guinea Savannah region of Nigeria and lies between longitudes 2° 30' and 6° 35' and latitudes 7° 45' and 9°30'. With a total landmass of 36,825 sq. km,. Kwara State has a population estimated att 4,719,844 people (NBS, 2021). The state is one of the ten poorest states in Nigeria in terms of GDP, with more than 70 percent of the population estimated to be living on less than a dollar a day (NBS, 2021). Kwara State was chosen for this study because of the reported high prevalence of undernutrition, poverty, high food deprivation, stunting, and underweight in the state. Kwara State government has established the Agricultural Development Projects (ADP) and Women in Agriculture (WIA) Unit of the ADP to provide extension/advisory services to farmers on best agricultural practices as well as nutrition-sensitive agricultural practices to rural farming households. In addition, some non-governmental agencies and community-based organizations also provide nutrition-sensitive advisory services to people in the state.

Sampling Procedure and Sample Size

The population for this study consisted of all rural farming households in Kwara State, Nigeria. The population of farm families obtained from Kwara ADP in the selected blocks is 177,260. The Yamane (1967) formula was employed to determine the sample size from the population. The formula is expressed as:

$$n = \frac{N}{(1+Ne^2)} \text{..... (i)}$$

Where,
n = the sample size;
N = the population size
e = Margin of error (0.05).

$$n = \frac{177,260}{\left(1 + (177,260 * 0.05^2)\right)}$$

n = 399 Rural Farming Households

The sample size for the study is 399 rural farming households

Calculation of sample proportion:

$$Proportion = \frac{Sample\ size}{Popuation} \times 100 \ldots\ldots\ldots equation\ 2$$

$$Proportion = \frac{399}{177{,}260} \times 100$$

Proportion= 0.225%

0.225% of the total population was selected.

The respondents for the study were the rural farming household heads. A three-stage sampling procedure was used to select respondents for the study. The first stage involved the purposive selection of four Kwara State Agricultural Development Project blocks where Nutrition-sensitive Advisory Services had been disseminated from each of the four zones to give 16 blocks. The second stage was the proportionate random selection of 399 households from a population of 177,260 rural farming households across the selected blocks. The administration of the interview schedule was done with the assistance of trained enumerators and contact farmers. After data collection, only 390 responses were found analyzable, giving a response rate of 97.7%.

Data Collection

Data collection was done with the aid of a structured interview schedule. The instrument for data collection was subjected to close examination by experts in the field of Agricultural Extension and Rural Development to ensure both face and content validity. The reliability of the instrument was ascertained using the Cronbach's alpha coefficient at a value of 0.94.

Measurement of Variables

The dependent variable for this study was the use of nutrition-sensitive advisory services among rural farming households. This was measured on an ordinal scale using a 4-point rating scale. A list of nutrition-sensitive advisory services was drawn and respondents were required to indicate the extent to which they used the advisory services on a scale of one (1) to four (4) as follows: Never =1, Rarely =2, Often = =3, Always =4

The mean score of the use of NAS was calculated by summing up all the numerical values of the responses and dividing by the total number of responses.

Total Score = (Number of "Never" responses * 1) + (Number of "Rarely" responses * 2) + (Number of "Often" responses * 3) + (Number of "Always" responses * 4)

Mean Score = Total Score / Total Number of Responses

The nutrition-sensitive advisory services considered were drawn from a review study by Kachelriess-Matthess *et al.* (2016), USAID (2017), FAO (2021), and Helvetas (2021). They aligned with the services disseminated to the targeted rural farming households for the study.

The livelihood status of rural farming households was measured using the Sustainable Livelihood Framework, which comprises natural, social, human, financial, and physical capitals. This was measured on an ordinal level using a 4-point rating scale consisting of: always=4, often=3, rarely=2, and never=1. Statements related to each form of capital were drawn and respondents were required to indicate the extent to which they agree or disagree with the statements. Each of the capitals was assigned the same weight. Scores generated from each of the capitals were aggregated to get the livelihood index per household. The scores were categorized as low, average, and high.

To calculate the mean score of the livelihood index per household based on the Sustainable Livelihood Framework, numerical values were assigned to the responses on the 4-point Likert scale. Then, sum up the scores for each form of capital (natural, social, human, financial, and physical). After obtaining the total livelihood index score for each household, the mean score was divided by the number of forms of capital (5 in this case).

A four-point rating scale was used to measure the constraints to using nutrition-sensitive advisory services. A list of possible constraints was drawn, and respondents were required to rate the level of severity of the

constraints on a scale of one to four. The scale was graduated as follows; 1=Not severe, 2=Less Severe, 3=Severe, 4=Very Severe.

Data Analysis

Simple descriptive statistics involving the use of frequency counts, percentages, mean, standard deviation, minimum, and maximum were used to present the findings from the objectives of the study.

The relationship between livelihood status and the use of NAS was determined using Pearson's Product-Moment Correlation.

$$\rho X, Y = \frac{E[XY] - E[X]E[Y]}{\sqrt{\sqrt{E[X^2]} - E[X]^2}\ \sqrt{\sqrt{E[Y^2]} - E[Y]^2}} \quad \text{…….(iii)}$$

Where

X: Livelihood status of rural farming households (Livelihood Sustainability Index)

Y: Use of nutrition-sensitive advisory services (Use of NAS Score)

Results and Discussion

This section presents the results of the data analysis of the study as well as its discussion. The results are presented in tables numbered accordingly, while the discussion follows suit.

Socio-economic Characteristics of Rural Farming Households

This section presents the socio-economic characteristics of rural farming households. Details of the results are presented in Table 1:

Table 1: Socioeconomic Characteristics of Rural Farming Households (n=390)

Variables	Frequency	Percentage	Mean	SD	Min.-Max
Household Size			5.17	1.46	2 – 9
3 – 5	233	59.8			
6 – 8	142	36.4			
> 8	15	3.8			
Sex of the Household Head					
Male	170	43.6			
Female	220	56.4			
Age of the Household Head (years)			47.79	9.95	28 – 70
≤30	19	4.9			
31 – 40	74	19.0			
41 – 50	163	41.8			
51 – 60	76	19.5			
> 60	58	14.8			
Marital Status					
Married	372	95.4			

Otherwise	18	4.6			
Educational Level					
No formal	132	33.8			
Primary	120	30.8			
Secondary	90	23.1			
Tertiary	48	12.3			
Farm Size (Ha)			2.53	1.32	0.40 – 6.0
≤0.50	39	10.0			
0.51-2.00	155	39.7			
2.01-3.50	98	25.1			
3.51-5.00	96	24.6			
>5.00	2	0.6			
Number of Extension Contacts for Nutrition Advisory Services per year			3.82	1.10	1 – 6
2 – 3	142	36.4			
4 – 5	238	61.0			
> 5	10	2.6			
Household Annual Income (₦)			423,051 .28		
≤ 250,000	146	37.4			
250,001-450,000	84	21.5			
450,001-650,000	87	22.3			
> 650,000	73	18.7			

Source: Field survey, 2023. * Multiple response

Results presented in Table 1 show that the average age of the household members was 47.8±9.9 years. This indicates that rural household members are, on average, in their active age. They are expected to perform economic activities that require the need for good health and hence the need for nutrition advisory services. This finding is consistent with the findings of Omotesho *et al.* (2020), who found a similar average age among rural farming households in Kwara State.

More than half (56.4%) of the respondents were female, indicating a higher prevalence of female-headed households in the study area. This trend may be attributed to factors such as male migration to urban areas, widowhood, or the growing involvement of women in agriculture. Additionally, as primary food handlers within households, women play a crucial role in food preparation and nutrition management. Extension personnel may prioritize them for the dissemination of nutrition-sensitive advisory services, recognizing their direct influence on household dietary practices. Their knowledge of food nutrition across various delicacies enables them to implement nutritional recommendations, whether as

wives, mothers, or female caregivers. This corroborates the findings of Ghosh *et al.* (2021) and Gebre *et al.* (2023). Therefore, women are very relevant to the usage of nutrition-sensitive advisory services (Nichols, 2021; Abdu *et al.,* 2022). The majority (95.4%) of the respondents were married. Marriage is a factor expected to positively influence the use of nutrition-sensitive advisory services. This is because both husband and wife need to regularly consume nutritional food capable of boosting fertility, daily energy requirements, and healthy living (Gaskins & Chavarro, 2018). About 34% of the respondents had no formal education, while others (66.2%) had formal education with at least primary education. This indicates that members of rural farming households are now acquiring formal education, as against previous studies that indicated the prevalence of no formal education among rural household members in Nigeria (Omonona *et al.,* 2015; Otekunrin *et al.,* 2021).

As also shown in Table 1, more than half (57.7%) of the respondents had household sizes ranging from three (3) to five (5) persons, while the average household size of all respondents was five (5) persons. This finding is in line with a report by the National Bureau of Statistics (NBS) (2019) that rural households had an average of about five (5) members. This implies that the households need a reasonable quantity of food to cater to the daily meals of their members. The relatively small household size is likely to reduce household heads' expenses in providing nutritional food items for members. This factor is expected to support the usage of nutrition-sensitive advisory services rendered to rural farming households.

About 40% of the rural farming households cultivated between 0.51 to 2.00 hectares of land, while the average land cultivated by all of the respondents was 2.53 hectares. This shows that rural farming households in the study area were smallholder farmers (Oyedeji *et al.,* 2018; Ogunniyi *et al.,* 2021). Small-scale farming often results in relatively low income for farmers (Marinus *et al.,* 2022).

As shown in Table 4.1, the average number of contacts of households with extension agents was 4.12 in the last production season (a six-month period).

Livelihood Status of Rural Farming Households

This section presents the results of the livelihood status of rural farming households. Livelihood was assessed by respondents' access to livelihood capitals. The results are presented in Table 2.

Table 2: Livelihood Capitals of Rural Farming Households

Livelihood Capitals	Mean Score	Percentage
Natural	3.31	22
Physical	3.03	21
Social	2.92	20
Human	2.79	19
Financial	2.64	18

Source: Field survey, 2023

The distribution of livelihood capitals shows that natural and physical assets were the most prominent among rural farming households, while financial resources were the least. This distribution highlights the dependency on natural resources and the critical need for physical infrastructure. However, the lower scores in human and financial capitals suggest areas where significant improvements are needed. To enhance the livelihoods of rural farming households, interventions should focus on boosting financial resources and human capital through access to credit, financial services, education, and training. Strengthening these areas can lead to better utilization of Nutrition-Sensitive Advisory Services (NAS) and improved nutritional and livelihood outcomes.

Livelihood Status of Rural Farming Households

This section presents the results of the livelihood status of the rural farming households. The results are presented in Table 3.

Table 3: Livelihood Status Index of Rural Farming Households

Livelihood Status Index	Status	Frequency	Percentage	Mean
≤0.74	Moderate	307	78.7	0.57
> 0.74	High	83	21.3	

Source: Field Survey, 2023.

Findings show that none of the households had low livelihood status, most (78.7%) had average livelihood status, while only 21.3% had high livelihood status. The Mean Livelihood Sustainability Index was 0.57. This shows that most of the households had an average livelihood status. Therefore, the livelihood capitals can contribute to the utilization of advisory services on the consumption of nutritional food at a moderate level. This finding corroborates previous findings that state that livelihood capitals are resources to be accessed and utilized for rural activities (Shrestha *et al.*, 2020; Gaffan *et al.*, 2023; Ringler *et al.*, 2023).

Use of Nutrition-sensitive Advisory Services among Rural Farming Households

This section presents the results of the use of nutrition-sensitive advisory services among rural farming households. The results are presented in Table 4.

Table 4: Extent of Use of Nutrition-sensitive Advisory Services

Nutrition-sensitive advisory services	Never F(%)	Rarely F(%)	Often F(%)	Always F(%)	MS
Cultivation of a wide variety of food crops across different classes of food.	0	0	41(10.5)	349(89.5)	2.89
Use of environmental sanitation practices.	0	0	45(11.5)	345(88.5)	2.88
Use of improved food preservation methods	0	0	65(16.7)	325(83.3)	2.83
Use of Indigenous food preservation methods	2(0.5)	148(37.9)	240(61.5)	0	2.61
Consumption of fortified crops (E.g., Vitamin A-cassava, Vitamin A-yellow maize, Vitamin A-orange flesh sweet potato, etc)	0	24(6.2)	263(67.4)	103(26.4)	2.20
Backyard rearing of livestock	0	53(13.6)	219(56.2)	118(30.3)	2.17
Use of labour and time-saving technologies for women in food processing	0	9(2.3)	332(85.1)	49(12.6)	2.10
Production of fortified crops (E.g., Vitamin A-cassava, Vitamin A-yellow maize, Vitamin A-orange flesh sweet potato, etc)	0	56(14.4)	249(63.8)	85(21.8)	2.07

Creating awareness of household-level and other small-scale agro-processing, and consumption of processed products	1(0.3)	163(41.8)	209(53.6)	17(4.4)	1.62
Creating awareness of fruit and vegetable consumption	15(3.8)	159(40.8)	184(47.2)	32(8.2)	1.60
Consumption of animal protein sources	0	232(59.2)	134(34.4)	24(6.2)	1.47
Engaging in Integrated Pest Management to reduce the use of agrochemicals	1(0.3)	261(66.9)	128(32.8)	0	1.33
Hand washing and good hygiene measures	74(19.0)	248(63.6)	66(16.9)	2(0.5)	0.99
Use of a balanced feeding calendar	114(29.2)	235(60.3)	41(10.5)	0	0.81
Household water treatment and storage	188(48.2)	114(29.2)	88(22.6)	0	0.74

Source: Field survey, 2023. MS=Means Score

The cultivation of a wide variety of food crops across different classes of food (MS=2.89) ranked first position, environmental sanitation practices (MS=2.88) ranked second, improved food preservation methods (MS=2.83) ranked third, indigenous food preservation methods (MS=2.61) ranked fourth, Consumption of fortified crops (E.g., Vitamin A-cassava, Vitamin A-yellow maize, Vitamin A- orange flesh sweet potato etc) (MS=2.20) ranked fifth while household water treatment and storage (MS=0.74) ranked fifteenth position as the least used nutrition-sensitive advisory services indicated by respondents. This implies that the cultivation of wide varieties of food crops across different classes of food, environmental sanitation practices, and improved food preservation methods were the topmost nutrition-sensitive advisory services used by rural household members in the study area. The adoption of cultivation of wide varieties of food crops across different classes of food as the lead practices used may be attributed to the fact that it conforms with the prevalence of occupation (farming) in rural areas (Otekhile & Verter, 2017; Jatto *et al.,* 2021; Ekong *et al.,* 2022) and could also help to reduce household expenditure in purchasing essential nutritious food (Tingum & Kuponiyi, 2020; Omotoso *et al.,* 2022).

Table 5: Level of Use of Nutrition-sensitive Advisory Services

Use Score	**Level**	**Frequency**	**Percentage**	**Mean**
< 0.50	Low	308	78.9	0.47
0.50-0.74	Moderate	82	21.1	

Source: Field survey, 2023.

Findings in Table 5 show that the majority of the households (78.9%) had a low level of usage of NAS. Only 21.1% had a moderate level of usage, while none of the households had a high level of use. This implies that rural household members poorly used Nutrition-sensitive Advisory Services disseminated by extension agents.

Studies have ascertained that healthy living is a product of healthy/nutritious food intake as well as compliance with other public and physical health-related practices (Ren *et al.,* 2019; Rodríguez-Mañas *et al.,* 2023). Therefore, this study suggests that low use of the Nutrition-sensitive Advisory Services may translate to poor health status of the rural population in the study area. This factor may further have detrimental effects on the production of crops, mainly produced in the rural areas where this study was carried out. This is because studies have linked good health status with increased crop production of farmers, showing significant direct effects (Frimpong & Vermund, 2022; Otekunrin, 2022).

Relationship Between Livelihood Status of Rural Farming Households and the Use of NAS.

The result presented in the section reveals the relationship between the livelihood of rural farming households and the use of NAS. The results are presented in Table 6.

Table 6: Analysis of Correlation Livelihood Status of Rural Farming Households and the Use of Nutrition-sensitive Advisory Services

	Livelihood	**Extent use**
Livelihood of rural farming households	1	0.830*
Use of nutrition-sensitive advisory services	0.830*	1

*. Correlation is significant at the 0.05 level (2-tailed).

The result presented in Table 6 shows the relationship between the livelihood status of rural farming households and their level of use of nutrition-sensitive advisory services. Findings show that the livelihood of the rural household members had a significant relationship with the extent of use of nutrition-sensitive advisory services ($r=0.830$; $p<0.01$). This shows that the higher livelihood status of rural farming households will lead to a significant increase in the extent of use of nutrition-sensitive advisory services. This could be because increased access to all forms of livelihood capitals (financial, social, human, physical, and natural) leads to increase accumulation of corresponding livelihood assets, including financial assets that serves as purchasing power to further access all the nine essential classes of food (staples, pulses, vegetables, fruits, meat/fish, milk, sugar, oil, and condiments) needed for healthy living (Grando *et al.,* 2022), and thus increase use of nutrition-sensitive advisory services rendered by extension workers in the study area.

Constraints to the Use of Nutrition-sensitive Advisory Services Among Rural Farming Households

This section presents the result of the constraints on the use of NAS. The results are presented in Table 7.

Table 7: Constraints to the Use of Nutrition-sensitive Advisory Services Among Rural Farming Households

Constraints	**NS F (%)**	**LS F (%)**	**S F (%)**	**VS F(%)**	MS	Rank
Unaffordability of food varieties	76(19.5)	121(31.0)	96(24.6)	97(24.9)	2.55	1st
Poor availability of food varieties	65(16.7)	217(55.6)	61(15.6)	47(12.1)	2.23	2nd

Poor follow-up by EAs	36(9.2)	240(61.5)	114(29.3)	0(0)	2.20	3rd
Previously failed interventions	43(11.0)	326(83.6)	21(5.4)	0(0)	1.94	4th
Poor satisfaction with nutrition-sensitive advisory services	82(21.0)	275(70.5)	33(8.5)	0(0)	1.87	5th
Large Household size	93(23.8)	268(68.7)	29(7.5)	0(0)	1.84	6th
Poor knowledge of nutrition components	87(22.3)	289(74.1)	14(3.6)	0(0)	1.81	7th
High technicality of NAS	90(23.1)	300(76.9)	0(0)	0(0)	1.77	8th
Poor control of household food intake	122(31.3)	254(65.1)	14(3.6)	0(0)	1.72	9th
Poor perception of the usefulness of nutrition-sensitive advice	112(28.7)	278(71.3)	0(0)	0(0)	1.71	10th
Poor Housing characteristics of the farming households	159(40.8)	191(49.0)	40(10.3)	0(0)	1.70	11th
Poor willingness to use nutrition-sensitive information	125(32.1)	265(67.9)	0(0)	0(0)	1.68	12th
Poor professionalism of extension workers	144(36.9)	246(63.1)	0(0)	0(0)	1.63	13th
Low level of education	150(38.5)	234(60.0)	6(1.5)	0(0)	1.63	14th
Incompatibility of culture and norms with NAS	171(43.8)	219(56.2)	0(0)	0(0)	1.56	15th
Long distance to market	239(61.3)	151(38.7)	0(0)	0(0)	1.39	16th

Source: Field survey, 2023. (NS=Not Severe, LS= Less Severe, S= Severe, VS= Very Severe)

The findings of this study imply that the unaffordability of food varieties, poor availability of food varieties, and extension agents not following up on information disseminated on nutrition advisory services were the most severe constraints to the use of nutrition-sensitive advisory services among rural farming households in the study area. Long distance to market may be attributed to the high cost of going physically to market and thus discourage the rural farming household members from constantly purchasing food items in the market but rather engaging in self-production to improve the diversity of household consumption (Usman, & Callo-Concha, 2021), and thus encourage self-production of food for household members. Additionally, the unaffordability of food varieties in recent times has reduced the purchasing power of household members to buy desired nutritious food items in Nigeria. The price of all forms of food categories needed for a balanced diet has skyrocketed in the local market, making it impossible for rural people who do not have much cash to purchase food items to complement their farm produce. This assertion is in line with empirical studies that found that the price of food items in the Nigerian market had risen, and many Nigerians could not afford a healthy diet (Amolegbe *et al.,* 2021; Mekonnen *et al.,* 2023; NBS, 2023).

Conclusion and Recommendations

Based on the major findings of the study, the study concluded that rural farming households in Kwara State had relatively moderate livelihood status and poorly used nutrition-sensitive advisory services. Unaffordability of food varieties, poor availability of food varieties, and inadequate follow-up on information disseminated by extension workers on nutrition advisory services were the most severe constraints to the use of nutrition-sensitive services among rural household members in Kwara State. The use of nutrition-sensitive agricultural extension services was positively related to the livelihood status of rural farming households.

Based on the conclusion drawn from the findings, the study recommends the following;

1. The government should employ a multi-dimensional approach to improving the income earnings of rural farming households to boost their livelihood status.
2. Adult literacy programmes should be encouraged among rural farming households by extension agencies.
3. Extension agents should put in place adequate follow-up mechanisms to adequately monitor the disseminated Nutrition-sensitive Advisory Services and their use.
4. There is a need for extension workers to intensify efforts to educate the rural populates on the least used nutrition-sensitive services with a special focus on the use of hand washing and good hygiene measures, use of a balanced feeding calendar, and household water treatment, as well as the importance of its usage to improve livelihood status.

Conflict of Interests

The authors declare that they have no known competing interests that could have appeared to influence the work reported in this paper.

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وضع سبل العيش واستخدام الخدمات الاستشارية المراعية للتغذية لدى الأسر الزراعية الريفية في ولاية كوارا، نيجيريا

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ملخص

تقوي التغذية الجيدة جهاز المناعة وتقلل من مخاطر الإصابة بالأمراض. في نيجيريا، ينتشر سوء التغذية في المناطق الزراعية الريفية. وعلى الرغم من نشر الخدمات الاستشارية المراعية للتغذية، لا تُظهر الإحصاءات أي تحسن يُذكر. هدفت الدراسة إلى دراسة وضع سبل العيش للأسر الزراعية الريفية، وتقييم مدى استخدام الخدمات الاستشارية المراعية للتغذية، وتحليل العلاقة بين وضع سبل العيش واستخدام الخدمات الاستشارية المراعية للتغذية، وتحديد معوقات استخدامها. باستخدام عملية أخذ عينات من ثلاث مراحل، تم اختيار 390 أسرة من أصل 177,260 أسرة زراعية ريفية قُدّمت لها خدمات استشارية مُراعية للتغذية. جُمعت البيانات باستخدام جدول مقابلات، وحُللت باستخدام إحصاءات التكرارات والنسب المئوية والانحراف المعياري وتحليل بيرسون لارتباط المنتج–اللحظة. أشارت النتائج إلى أن الأسر الزراعية الريفية كانت تتمتع بمستوى معيشي متوسط (متوسط مؤشر استدامة سبل العيش = 0.57)، وضعف في استخدام خدمات الاستشارات المُراعية للتغذية ($\bar{x}$ = 0.47)، وارتباط إيجابي بين مستوى المعيشة واستخدام خدمات الاستشارات المُراعية للتغذية (r = 0.830، $p \leq 0.05$). وتمثلت المعوقات الرئيسية لاستخدام خدمات الاستشارات المُراعية للتغذية في صعوبة الحصول على أصناف الطعام ($\bar{x}$ = 2.55)، وقلة توافر أصناف الطعام ($\bar{x}$ = 2.23)، وضعف متابعة المُرشدين الزراعيين ($\bar{x}$ = 2.20). خلصت الدراسة إلى أنه على الرغم من اعتدال مستوى المعيشة، إلا أن استخدام الخدمات الاستشارية المراعية للتغذية كان ضعيفًا، ويمكن تحسينه من خلال تعزيز موارد المعيشة. والتوصية باتباع نهج متعدد الأبعاد لتحسين مستوى معيشة الأسر الزراعية الريفية.

الكلمات الدالة: موارد المعيشة، التغذية، سوء التغذية، الأسر، الجهاز المناعي، الخدمات الاستشارية.

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