

## **Awareness and Practice of Consumption of Mixed Diet among Rural Farm Households in Afikpo North Local Government Area of Ebonyi State, Nigeria**

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### **Abstract**

This study focused on and practice of consumption of mixed diet among rural farm households in Afikpo North Local Government Area (LGA) of Ebonyi State, Nigeria. Specifically, it determined; awareness of mixed diet among the households; expressed level of consumption of mixed diet among the households; and constraints to consumption of mixed diet among the households. Survey research design was adopted. A total of 220 registered homemakers made up the population for the study. Questionnaire was used to collect data. Mean and standard deviation were used to analyzed data. Results show, among others, that the rural households are aware of only three indicators of awareness of mixed diets ( $\bar{X} \geq 2.50$ ), most of which are starchy staples. Further results include high expressed consumption of the starchy staples ( $\bar{X} = 2.89$ ), and dietary fibre ( $\bar{X} = 93$ ); while protein diets obtained lower expressed consumption score ( $\bar{X} = 1.18$ ). Other findings are, eight constraints to consumption of mixed diets among rural farm households in the area. Based on the findings, six recommendations were made for enhancing consumption of mixed by the rural farm households.

**Keywords:** Mixed, Diet, Awareness, Practice, Consumption, Rural, Farm, Households.

### **Introduction**

Consumption of mixed diet supports growth, provides strength needed for daily activities, strengthens immune system, and enhances longevity (Munteanu and Schwartz, 2022). Stages in human development such as childhood, adolescence, and adulthood as well as state of health, work or activities and sickness require specific adequate daily dietary intake. Individuals with adequate daily nutrition are more productive and

have more opportunity to explore and attain full potentials in life (Berha,et al., 2021). Individuals need to be aware of such adequate dietary requirements.

Mixed diet a dietary pattern that incorporates a variety of foods from different food groups, including both plant-based and animal-based sources (Gupta, 2024). Mixed diet awareness appears to be directly related to knowledge of nutrition and human life which may influence individual's daily

nutritional practices. In this study, mixed diet awareness entails perceived knowledge of the food nutrients and quantities that provides daily healthy nutrition. This may affect individual choices from food groups that are necessary for growth and development, as well as, state of health and daily activities. It may also guide household food production, purchase of food, preparation and consumption of household meal and enable household to satisfy their daily recommended dietary intake (RDI) needs with available resources and avoid malnutrition in the household.

Malnutrition occurs when there is inadequate access to safe and diverse foods for healthy nutrition, poor child feeding practices or adult dietary choices and poor health (Ersado, 2022). The number of malnourished people in the world has continued to increase from approximately 768 million in 2019. In 2020, as many as 161 million more people were facing the challenges of malnutrition, not only of inadequate intake of food but of nutrient deficiency (Food and Agricultural Organisation, 2021). Overwhelming majority of those undernourished people live in rural parts of the world including sub-Saharan Africa where the rural dwellers are mostly farmers that produce about 90 percent of food consumed on daily basis. Malnutrition has many adverse effects including immune deficiency, high risk of morbidity and mortality and poor brain development (Morales, et al., 2024). It has been identified as the highest risk factor of disease, posing a serious challenge to many countries' public health (Amoadu, et al., 2024).

In Nigeria, despite the diverse agricultural system that provides wide

range of indigenous and traditional foods and access to forest foods including fruits and nuts, households remain poor, malnourished, and diseased (Yusriadi, et al., 2024). According to Demographic and Health Survey (DHS) incidence of malnutrition remain high at 37 percent with overwhelming majority of the population in rural areas (NPC, 2019). Both adult and children were found to be malnourished with cases of stunting, wasting and obesity. This could be largely attributed to inadequate and inappropriate adequate diets due to poor awareness of balanced or mixed diet. This calls for policy actions because the rural dwellers are the major food producers in the country.

Incidence of malnutrition in rural farm household poses both physical and economic challenge. Poor health resulting from malnutrition may affect farming activities including the ability to explore, innovate, experiment and effect changes in agricultural systems which could lead household to poverty and hunger (Sowunmi, et al., 2024). Affected individual maybe too weak and fragile to maintain working days and hours for farm work. Also, caregiving to affected household members may require taking days off farm work which may all together, make individuals unable to provide for the household. Attending extension meetings to learn about improved technologies may not even be possible, hence the individual may lack the necessary knowledge to innovate. Also, innovations that require extra labour such as planting in lines may never be adopted due to lack of nutrient as a result of non-consumption of mixed diet. In situations of critical ill health involving huge financial expenses as a result of non-

consumption of mixed diet, innovation that requires the purchase of improved seeds, fertilizer, irrigation, pesticides, herbicides, use of machinery and other inputs may not be affordable. In addition, carrying out experiments on adopted technologies and improved practices may not be possible too. In some cases, there may be depletion of productive assets such as sale of working tools, cultivable lands, and draught animals, consequently, reduction in number of livestock, farm sizes and intensive crops production just because the household was not conscious of their dietary pattern.

Major foods from agricultural ecosystems provide an insight into the wide array of underutilized indigenous and traditional foods (Owusu-Kwarteng, et al., 2024). However, if heads of household in the rural areas are not aware of mixed diet as well as the nutritional and health attributes of available foods for daily consumption, they may not facilitate appropriate consumption of mixed diet practices for their household members. This may lead to malnutrition and related challenges, including decreased participants in food production (agriculture). By being aware of nutritive value of available foods and people's need for daily consumption of mixed diet, homemakers and household heads could become more likely to make informed food choices and decisions for their household members, thus improving their nutritional status.

### **Objectives of the Study**

This study focused on awareness and practices of consumption of mixed diet among rural farm households in Afikpo North LGA, Ebonyi State, Nigeria. Specifically, the study determined:

1. awareness of components and need for consumption of mixed diet among rural farm households in Afikpo North LGA;
2. level of consumption of mixed diet among rural farm households in Afikpo North LGA;
3. constraints to consumption of mixed diet among rural farm households in Afikpo North LGA.

### **Methodology**

**Research Design:** The study adopted a survey research design.

**Area of the Study:** The study area was Afikpo North Local Government Area (LGA) of Ebonyi State. There are seven autonomous communities that make up the LGA. It lies within latitude 45°E and longitude 60°N of Ebonyi State. The people of Afikpo North are mostly farmers, who cultivate and consume mainly rice, yams and cassava. Lowland areas are largely available and serves as good sites for rice and dry season vegetable farming which is likely to affect their consumption pattern (Oji, et al., 2024).

**Population for the Study:** The population for the study was 220 households who were rural farmers from Afikpo North LGA registered with federal ministry of agriculture and rural development at the time of the study {Federal Ministry of Agriculture and Rural Development - (FMARD, 2025)}. FMARD has the record of registered households (both male and female) of every States and that of Afikpo North LGA was used for this study. Some of the registered rural farm households were headed by females while for those headed by males; the wives (homemaker) represented the households. These farmers engaged in farm activities such as

crop production like; rice, yam, cassava, cocoyam, groundnut, cowpea and vegetables, etc. and livestock farming, especially the extensive system of rearing sheep, goats and native cattle. Some farmers also engage in fishing farming in the area. Non-farm activities such as: petty trading, blacksmith, pottery and weaving were also practiced by some of the rural farm households in the study area. Their consumption pattern often centred around those crops produced by the households.

**Sample for the Study:** One hundred households were purposively selected from the 220 registered rural farm households in Afikpo North LGA. The selected households were those who indicated willingness and readiness to participate in the study. Each household yielded a female head or a female homemaker.

**Instrument for Data Collection:** Questionnaire was used for data collection. It was developed based on the specific objectives of the study and literature review. The questionnaire consists of three sections; section A designed to collect data on respondents' expressed level of awareness of mixed diet; section B focused on expressed level of consumption of mixed diet while section C focused on constraints to consumption of mixed diet among the rural farm households. It was a 4-point scale instrument. The instrument was validated by three university experts in Agricultural Economics. Reliability of the instrument was established using test-retest method. This was conducted on 15

farmers from outside the study area. Reliability coefficient was established using Cronbach's alpha which yielded the value of 0.81, indicating that the instrument was reliable.

**Data Collection Method:** With the aid of three trained extension agents that work at Ebonyi State Agricultural Development Programme, 100 copies of the questionnaire were distributed by hand to respondents. Questionnaire items were explained to illiterate homemakers and their responses were recorded. Thus the questionnaire served as interview guide for the illiterate respondents. All the 100 copies were retrieved representing 100 percent return.

**Data Analysis Techniques:** Mean and standard deviation were used for data analysis. Based on the four-point scale on the instrument, a benchmark mean score of 2.50 was set for decision-making. A mean score of  $\geq 2.50$  was interpreted as "Aware" meaning that the respondents were aware of the components of mixed diet and need to consume the mixed diets while a mean score  $\leq 2.50$  was considered "not aware" meaning that the respondents were not aware of the components and need to consume mixed diets. Grand means were computed for each item to determine the overall consumption level across both groups. Also, a mean score of  $\geq 2.50$  was used to determine level of expressed practice of consumption of each group of mixed diet; as well as the constraints to consumption of mixed diet.

## Results

**Table 1: Mean Responses and Standard Deviation of Rural Farm households on their Awareness and Consumption Levels of Mixed Diets among Households in Afikpo North LGA.**

| S/<br>N                                    | Possible Components of Mixed Diets                                                                                                                           | Awareness   |        | RA | Consumption |        | RC |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------|----|-------------|--------|----|
|                                            |                                                                                                                                                              | $\bar{X}_1$ | $SD_1$ |    | $\bar{X}_2$ | $SD_2$ |    |
| 1                                          | Energy (Consumption of diet like starchy staples high in carbohydrates eg. yams, plantains, rice, cassava etc. presence of any of the stables 3 times a day) | 2.60        | 0.49   | AW | 2.89        | 0.31   | C  |
| 2                                          | Protein (incorporation of protein-rich staples like fish, poultry, beans, sesame, eggs, some dairy and nuts and seeds in meals 3 times a day)                | 1.43        | 0.49   | NA | 1.18        | 0.38   | NC |
| 3                                          | Fat 70g (incorporation of fish, avocado, nuts, soyabean, sunflower in meals 3 times a day)                                                                   | 1.37        | 0.45   | NA | 1.10        | 0.30   | NC |
| 4                                          | Saturated fatty acids (consumption of meat, butter, palm, coconut oil, cream, cheese, baked and fried foods in meals 3 times a day)                          | 1.26        | 0.44   | NA | 2.59        | 0.49   | C  |
| 5                                          | Sugar (roughly 6 tea spoon per day or natural sugar eg. ripe mangoes, sweet potatoes, sugarcane juice etc 3 times a day)                                     | 2.51        | 0.50   | AW | 2.72        | 0.45   | C  |
| 6                                          | Sodium (salt)(about 1 teaspoon)                                                                                                                              | 2.54        | 0.50   | AW | 2.93        | 0.25   | C  |
| 7                                          | Dietary fibre (consumption of fruits, brown rice, beans, lentils, plantain, and leafy greens 3 times a day)                                                  | 1.24        | 0.43   | NA | 1.10        | 0.30   | NC |
| 8                                          | Limited/moderation of alcohol up to 1 drink per day for women and up to 2 drinks per day for men and only by adults of legal age                             | 1.20        | 0.40   | NA | 1.84        | 0.37   | NA |
| 9                                          | Every five minutes of vigorous aerobic activities or 150 minutes of moderate aerobic activities                                                              | 1.32        | 0.47   | NA | 1.15        | 0.35   | NC |
| <b>Grand mean (<math>\bar{X}_g</math>)</b> |                                                                                                                                                              | <b>1.46</b> |        |    | <b>1.62</b> |        |    |

N: Number of Respondents = 100;  $\bar{X}_1$  = Mean awareness level;  $SD_1$  = Standard deviation for awareness level;  $\bar{X}_2$  = Mean consumption level;  $SD_2$  = Standard deviation for consumption level; RA= Remarks for awareness; RC= Remarks for consumption of mixed diets. AW = aware; NA = not aware; C = consume; NC= Not consume.

Table 1 shows that respondents were aware of only three possible components (indicators) of mixed diets ( $\bar{X} \geq 2.50$ ). The standard deviations of the responses range from 0.40 to 0.50, indicating that awareness of possible components of mixed diets and the need for its consumption are highly dispersed from the central tendency.

**Table 2: Mean Score Distribution of Rural Farm Households' Constraints to Consumption of Mixed Diet in Afikpo North LGA.**

| S/N | Constraints to Consumption of Mixed Diets              | $\bar{X}$ | SD   | Remarks |
|-----|--------------------------------------------------------|-----------|------|---------|
| 1   | Lack of awareness on nutrition information             | 2.81      | 0.39 | C       |
| 2   | Lifestyle                                              | 2.13      | 0.34 | NC      |
| 3   | Unavailability of time to purchase and prepare meals   | 2.25      | 0.44 | NC      |
| 4   | Lack of resources required to consume mixed diet.      | 2.60      | 0.49 | C       |
| 5   | Food prices                                            | 2.77      | 0.42 | C       |
| 7   | Geographic and regional variation in food prices       | 2.58      | 0.49 | C       |
| 8   | Inadequate access to food                              | 2.69      | 0.46 | C       |
| 8   | Food choices                                           | 2.27      | 0.45 | NC      |
| 9   | Taste preferences                                      | 2.25      | 0.44 | NC      |
| 10  | No job                                                 | 2.31      | 0.46 | NC      |
| 11  | Seasonal variation of most food (fruits and vegetable) | 2.72      | 0.45 | C       |
| 12  | Lack of knowledge on proper food storage               | 2.56      | 0.49 | C       |
| 13  | Lack of access to dieticians                           | 2.56      | 0.49 | C       |

$\bar{X}$ = Mean constraints; SD= Standard deviation; C= Constraints, NC=Not a constraint

Table 2 shows eight factors which are constraints to consumption mixed diet ( $\bar{X} \geq 2.50$ ) in the area of the study. These include: lack of awareness on nutrition information ( $\bar{X} = 2.81$ ), lack of resources ( $\bar{X} = 2.60$ ) and others. The standard deviations of the responses ranged from 0.34 to 0.49, indicating that homemakers constraints to consumption of mixed diet in Afikpo North LGA are not highly dispersed from the central tendency.

### Discussion

Results on awareness of consumption of mixed diet among homemakers in Afikpo North LGA show lack of awareness on components and need for consumption of mixed diets. This is because most of the respondents either lacked access to nutrition information, does not have access to dieticians or consume what is available for immediate satisfaction. These findings are in line with the study of Yusriadi, (2024) who noted unavailability of accessible information on consumption of mixed diet as a constraints to farming communities unawareness of mixed diet.

Result on practice of consumption of mixed diets shows that most of the respondents only have access to carbohydrates for energy by consuming starchy staples high in carbohydrates like yams, plantains, rice, cassava mostly three times a day. These findings are consistent with those of Bantilan (2023), who reported that one cup (136 grams) of baked yams or cassava provides 158 Calories which is higher than the standard daily carbohydrate requirements. Others consume variety of oils and Saturated fatty acids (consumption of meat, butter, palm, coconut oil, cream, cheese, baked and fried foods in meals three times a day). These results could be due to access to forest palm trees to source oil and availability of more starchy foods in the study area. Also there was no moderation on alcohol intake and only a few engaged in aerobic exercise. These findings are in line with {(Federal Government of Nigeria (FGN), 2024)}, reported which shows that dietary micronutrient deficiencies remain a problem and are even more serious in women (especially pregnant and

breastfeeding women). The report recommended that food and nutritional policies such as supplementation and fortification which have been shown to improve micronutrient intake need to be expanded and maintained. These results also agreed with those of Uwandu, *et al*, (2022), who reported that intake of most of the vitamins and minerals were inadequate among rural households. Hence, rural farm households appear to consume only the food items available to them without conscious consideration of consumption of mixed diet. The findings are also in line with the report by International Fund for Agricultural Development (IFAD), (2024) which shows that majority of rural farm households eat what is available due to low-income earnings associated with peasant farmers. This also is in line with findings of Alija, *et al*, (2024), who reported that carbohydrates are the primary energy source for daily activities in the rural areas, most affordable and widely available. Again, the results of this study are consistent with those of Bayissa, (2019), who reported that rural farmers in Ethiopia engaged both in rearing of animals and production of plants for their own consumption and for marketing.

Result on constraints (Table 2) shows that consumption of mixed diet was constrained by eight factors, which include: lack of awareness on nutrition information; lack of resources; lack of access to dietitians; food prices; geographic and regional variation in food prices; inadequate access to food; seasonal variation of most food (fruits and vegetable); and lack of knowledge on proper food storage. These results are in line with those of Adebayo *et al*, (2021)

who reported prominent constraints to adequate dietary intake in northwest Nigeria to be the high cost of food items, low income, and seasonality of food items and so on. Also, Obayelu & Orosile (2015), reported that household may slash its food purchases and alter its consumption patterns to cope with rapid food inflation thereby showing that food prices and related factors are constraints, as the present study also revealed.

### Conclusion

This study assessed awareness and practice of consumption of mixed diet among rural farm households in Afikpo North Local Government Area of Ebonyi State, Nigeria. The findings reveal, among others, that expressed level of awareness of components and need for consumption of mixed diet by rural farm households are low. The households also consume mainly available starchy staples. There are also constraints that hinder mixed diets by the rural farm households. These findings necessarily call for action by relevant bodies to strategies for helping the rural farm household improve their nutrition in various ways including the consumption of mixed diets.

### Recommendations

Based on the result of the analysis, the study therefore recommends the following;

1. Various relevant bodies should intensify efforts on creating awareness on components and need for consumption of mixed diet in the study area through radio programs and other sources.
2. State government, through its Agricultural Development Program should encourage irrigation and off

- season farming to solve the problem of seasonal variation of most foods crops.
3. Government should control inflation through its macro and micro economic indices to curb the menace of ever increasing food prices in the market.
  4. Non-governmental agencies (NGO) should help in provision of resources needed for food production to solve the problem of lack of production resources.
  5. Access to education should be strategically approached, given priority to households with low levels of education.
  6. Extension services should include the services of health personnel and dieticians to solve the problem of lack of access to dietician.

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