*JHER Vol. 28, No. 2, December 2021, pp. 229 – 235*

# Strategies for Reducing Micro-Nutrient Deficiencies among Rural Households in Anambra State

**Nwabunwanne C.C. and Arinze, A.U.**
Federal College of Education (Technical),
Umunze

**Abstract**

This study was designed to evolve the strategies for reducing micro-nutrient deficiencies among rural households in Anambra State. Specifically, the study determined the causes of micronutrient deficiency and ways of curbing micro-nutrient deficiency among rural households in Anambra State. Two research questions guided the study. The study adopted descriptive survey research design. Population for the study comprises of 22 Home Economics lecturers in two Colleges of Education in Anambra State that offer Home Economics. Questionnaire was used for data collection. Data were analysed using mean and standard deviations. The results of the study revealed 11 causes of micro-nutrient deficiency. These include insufficient consumption of nutrient–rich food ($\overline{X}$ = 2.88), poor utilization food ($\overline{X}$ = 3.00), poor method of food preparation ($\overline{X}$ = 2.88), improper food storage ($\overline{X}$ = 3.22) and among others. Other findings are 10 strategies for reducing micro-nutrient deficiency. These include adopting cooking methods that presever food nutrients ($\overline{X}$ = 3.21), rural women should use bio-fortified food ($\overline{X}$ = 3.11), eating vegetables and fruits frequently by members of the household ($\overline{X}$ = 2.77), creating awareness for food sources of micro-nutrients among the rural women ($\overline{X}$ = 3.17) and others. The study recommended among others that women should embark on home gardening should also adopt better preservation storage and processing method.

**Key words:** Strategies, Micro-nutrient, Deficiency, Causes, Households, Reducing, Rural.

## Introduction

Micro nutrients are those nutrients required by the body in small or minute amounts in milligrams and micrograms. They are minerals and vitamins. The minerals and most of the vitamins the body needs most be obtained from foods since the body cannot make them. These essential dietary elements are vital for normal growth and development. Micronutrient deficiencies have various serious negative health implicationa (Adelekan, 2007, Ray, 2016 & Weisenberger 2020).

Micro-nutrients are those nutrients vital to the body (vitamins, minerals and trade elements). These micro

nutrients are essential to the mental and physical development of children and adult (Adelekan, 2007). Micro-nutrient deficiencies inflict anemia, cretinism and blindness on tens of millions of people. Levels of mineral and vitamin deficiency that have no clinical symptoms can impair intellectual development, compromise immune system, provoke birth defects and cause individuals to live below their physical and mental potential which ultimately impairs their capabilities and the prospects of nations. Micro-nutrient deficiency is the world most prevalent and most devastating nutritional problem. Rush, (2000) reported higher rate of maternal, mortality rate due to micro-nutrient deficiency in the developing countries. International Food Policy Research Institutes (IFPRI) (2016), documented the ability for the micro-nutrient deficiency impairing physical growth and learning, limits productivity and ultimately perpetrates poverty in a continuous cycle. Countries where a large share of the population is affected by vitamin and mineral deficiency cannot realize their economic potentials.

According to USAID micro nutrient initiative (2009) micro-nutrient deficiencies inflict anaemia, crentinism and blindness on tens of millions of people causing individuals to live below their physical and mental potentials which ultimately impairs their capabilities and the prospects of nation. Graham (2006) demonstrated that micronutrient deficiency is responsible in part for the global malnutrition burden. Micro-nutrient deficiency interacts with repeated bolts of infectious disease causing preventable maternal and child deaths annually. It is a serious issue that attracts public health concern in most developing countries. World Health Organization (2011), stated that one in three people in developing nations ae affected by deficiencies in micro-nutrients.

In Nigeria, micro-nutrient deficiency among people is blamed on the insufficient consumption of nutritious food especially among the rural dwellers (Ministry of Budget and Planning, 2016). The rural people because of their low socio-economic status consume more of cheap and readily available staple food. They relied much on starchy food such as cassava, cassava products and yam, while those that are high in vitamins, minerals and iron are rarely eaten because of the cost associated with it. Onyia, (2013), observed that rural households do not take the right proportion of nutrition rather insisting on those foods consisting mainly of carbohydrates with less protein and vitamins.

The nutrition situation in Anambra State is not different. The food intake analysis according to Okeke (2018), showed that most people in the state generally lack food sufficient in protein, calcium, vitamin A and other minerals. Lack of nutritional knowledge is a serious challenge in the state. Inability of eating the right food has brought untold diseases condition, intellectual poverty, retarded mental

development and poor living standards. Micro-nutrient deficiency is one of the world's most serious but least addressed health problem especially in the rural areas. These rural areas need to be enlightened on the need for good nutritional behavior and this can be done by medical practitioners and home Economics teachers/extension workers.

Home Economics teachers are trained in the area of nutrition, child care, meal planning/management and (balanced diet) among others. These trained Home economics teachers should in better position to determine the strategies for reducing micro-nutrient deficiency among rural household.

**Purpose of the study**

The main focus of the study was to evolve on the strategies for reducing micro-nutrient deficiency among rural households in Anambra State. Specifically, the study determines:

1. causes of micro-nutrient deficiency among rural households in Anambra State.
2. ways of reducing micro-nutrient deficiency among rural household in Anambra State.

**Research questions**

1. what are the causes of micro-nutrient deficiency among rural household in Anambra State?
2. What are the ways of reducing micro-nutrient deficiency among rural household in Anambra State?

**Methodology**

***Design of the study*:** A descriptive survey research design was adopted for the study.

***Area of the study*:** The area of the study was Anambra State. The study was however carried out in Umunze and Nsugbe towns in Anambra state. Each of the two towns has colleges of education and rural environmjents. So there are two government owned colleges of education (COE), COE Umunze owned by Federal Government aqnd COE Nsugbe owned by Anambra state government. These colleges offer Home Economics.

***The population and sample for the study*:** The population of the study was made up of all 22 Home Economics lecturers in the two government (Source: Statistics units of Nwafor Orizu College of Education Nsugbe (NOCE) and Federal College of Education (T) Umunze (F.C.E.T., 2020). Home Economics lecturers were chosen for the study because they live in the rural areas and interact with some of the rural households. Most of the Home Economics lecturers are familiar with the conditions of household nutrition in rural areas. All the 22 Home Economics lecturers in the two Colleges of Education were involved in the study bcause of the small size of the population.

***Instrument for data collection*:** The instrument for data collection was questionnaire. The items of the questionnaire were structured on a four-point scale thus strongly Agree (SA), Agree (A), Disagree (D), and

Strongly Disagree (SD) representing 4, 3, 2, and 1 respectively. The instrument was validated by three University lecturers in Food and Nutrition.. The reliability of the instrument was determined by administering the instrument to 15 lecturers of Home Economics from Federal College of Education (Technical) Asaba. They were out of the study area and were not part of the population for the study. Data collected from the study were analyzed using Crombach Alpha which yielded a correlation of 0.85.

***Data collection method*:** data collected from the study were analyzed using means and standard deviation. Any item with mean score of 2.50 and above was regarded as "Agree" cause of micro-nutrient deficiency/ way of reduction micro-nutrient deficiency. Any item with a mean less than 2.50 was regarded as "Disagree".

**Findings of the Study**

**Table 1: Mean Responses and Standard Deviation on causes of Micro-nutrients Deficiency Among Rural Households.**

| S/N | **Causes of Micro-nutrient Deficiency** | $\overline{X}$ | **SD** | **Remarks** |
|---|---|---|---|---|
| 1 | insufficient consumption of nutritional food | 2.88 | 0.66 | Agreed |
| 2 | poor utilization food | 3.00 | 0.88 | Agreed |
| 3 | financial constraints of rural women | 2.77 | 0.58 | Agreed |
| 4 | poor method of food preparation | 2.88 | 0.82 | Agreed |
| 5 | food preference of family members | 2.55 | 0.41 | Agreed |
| 6 | poor accessibility of food | 3.11 | 0.41 | Agreed |
| 7 | poor preservation of food | 3.22 | 0.56 | Agreed |
| 8 | improper food storage | 3.22 | 0.55 | Agreed |
| 9 | family standard | 3.01 | 0.72 | Agreed |
| 10 | Ignorance | 3.20 | 0.63 | Agreed |
| 11 | unavailability of food | 3.45 | 0.65 | Agreed |

$\overline{X}$ = *mean; SD = standard deviation*

Table 1 indicates that all the items had mean scores above the cut-off point of 2.50 and each has the "Agreed" remark. This means that all the 11 items are causes of micro-nutrient deficiency on rural household ($\overline{X}$ = 2.55-3.22).

**Table 2: Mean Responses and Standard Deviation on the Ways of Reducing Micro-nutrient Deficiency mong Rural Households in Anambra state.**

| S/N | Ways of Reducing Micro-Nutrient Deficiency among Rural Households | $\overline{X}$ | SD | Remark |
|---|---|---|---|---|
| 1 | Creating awareness for the food sources of micro-nutrients among the rural women. | 3.17 | 0.72 | Agreed |
| 2 | Including the food sources of micro-nutrients in the family meal by women. | 2.88 | 0.55 | Agreed |
| 3 | Eating vegetables and fruits frequently by members of household. | 2.77 | 0.92 | Agreed |
| 4 | Rural women should raise vegetable gardens. | 3.12 | 0.62 | Agreed |
| 5 | Adopting cooking methods that preserve food nutrients. | 3.21 | 0.67 | Agreed |
| 6 | Rural women should use bio-fortified food. | 3.11 | 0.67 | Agreed |
| 7 | Rural women empowering themselves to have access to food. | 2.88 | 0.45 | Agreed |
| 8 | Rural women should increase their dietary diversity. | 2.51 | 0.68 | Agreed |
| 9 | Rural women should learn and use good food preparation methods. | 2.56 | 0.55 | Agreed |
| 10 | Reural women should adopt proper food storage techniques. | 3.09 | 0.71 | Agreed |

***Note:*** *X= Mean; SD= Standard Deviation1*

Table 2 shows that each of the 10 items has a mean of 2.50 and above. The mean scores of all the 10 items range from 2.51-3.21. This means that the respondents agreed on the items as the ways of reducing micro-nutrients in the area of the study.

**Discussion of findings**

Findings in Table 1 indicates that the causes include: insufficient consumption of nutritious food, poor utilization food, poor method of food preparation, financial constraints of rural women, unavailability of food, poor preservation of food, poor accessibility of food, improper food storage, food preference of family members, family standard, and ignorance. The findings consistent with the findings of Okafor (2017), who reported that micro-nutrient deficiency among rural households is caused by poor food preparation by the rural women. Also Kennedy (2007), stated that micro-nutrient deficiency among Africans include: population explosion, poor communication, lack of access to markets, poor transportation, lack of infrastructure which makes food to be hardly transported from regions of plenty to famine stricken areas, poor food preparation and eating habits natural calamities and lack of planning.

Ekpenyong and Alfred (2001), opined that economic conditions of the rural woman reduces their purchasing power, making it difficult for them to acquire their daily minimum requirement of food. Also Idahaba (2006), stated that improper food

storage leads to excess spoilage of food making it possible for the rural areas to be exposed to food insecurity.

Findings in Table 2 reveal the mean ratings of respondents on the ways of reducing micro-nutrient deficiency among rural household, their responses includes Creating awareness for the food sources of micro-nutrients among the rural women, Including the food sources of micro-nutrients in the family meal by women, eating vegetables and fruits frequently by members of the household, rural women to raise vegetable garden, adopt cooking methods that preserve food nutrients, rural women to use bio-fortified food, empower themselves to have access to food, increase their dietary diversity, good food preservation by the rural women, and proper food storage. Some of these findings are consistent with those of Kuku-shittle (2016), who pointed out that increasing dietary intake o food sources of the micro-nutrients is one of the most effective ways to sustainably preventing micro-nutrients deficiency. He also observed that dietary diversification ensures a healthy diet that contains a balanced and adequate combination of nutrients. Popkin (2001), also stated that women should be empowered to gain access to food. This he pointed out will make them to be effective food of providers. He further stated that there should be proper storage facilities to enable farmers to store their post-harvest crops. Furthermore Food and Agricultural Organization (2014), opined that the effective way of reducing micro-nutrient deficiency includes home gardening, food preparation, storage and preservation methods to prevent nutrient loss. Thomposon and Brown (2010), also stated that micro-nutrient deficiency of the rural households could be reduced by eating vegetables and fruits regularly this will help to boost their nutrition.

**Conclusion**

The paper identifies the causes and ways of reducing hidden micro-nutrient deficiency among rural households. Women are to be major providers of family meals. They therefore play very ctitical part in reducing hunger and malnutrition in households. All hands should be on desk to reduce micro-nutrient deficiency; the government in collaboration with the extension agents can play a role in promoting nutritional security of household members and ensuring sustainable food systems that promote healthy diets. A coherent and multi-sectoral approach including health, food security and Agriculture is of prime importance.

**Recommendations**

Based on the findings of the study, the following were recommended.

1. Women should embark on Home gardening where they will raise vegetables for the family consumption.
2. There should be periodic provision of vitamin A Supplement by Health workers.

3. Women to adopt better preservation, storage processing and cooking good methods.
4. Women empowering themselves to have better access to food
5. Extension agents and Health Workers should sensitize the rural households on the sources of micro-nutrients.

**References**


Adelekan, D.A.C (2007), *Comparative effects of malnutrition on plasms concentration of Anti-oxidation micro-nutrients in children.* Annals of Tropical Paediatris 17(3), 223-227.

Ekpenyong, S and Alfred R (20II) Food importance and rural economy, the challenges. *Journal of Environment 2 (1) 22-40*

Food and Agricultural Organisation FAO (2014), *The State of food and Agriculture*. Food Ssystems for better Nutrition, Rome.

Grahan, R.O.W (2006), *Nutritious substances food systems* Advances in Agronomy 9 (2) 11-72

Idachaba, F.S (2006), *Strategies and Policies of Food Security and Economic Development in Nigeria.* Lagos: CBN

International food policy Research Institute (2006) *Global Nutrition, Report, from promise to impact. International food policy Research institute* Washington D.C Https:// do:. Org/10.217/9750 896295841

Kennedy G.L (2007) Dictionary diversity score is a useful indicator of micro-nutrient intake. *Journal of nutrition 13+(2), 472-474*

Kuku-shittu, O (2016) *Child Nutrition in Nigeria*. International food policy Research institute working paper 33

Micro-nutrient initiative (2009) *Investing in the future.* A united call to action on vitamin and mineral deficiencies. World Bank Ontario, Canada.

Ministry of Budget and Planning (2016), *National Policy on food and Nutrition in Nigeria*

Okeke, N.O (2018) food security. A global issue. *Journal of Biotechnology 2 (1), 377-381*

Onyia, C.C (2013). *Comparative Analysis of Nutritional Behaviour of Urbaan and Rural Households in Ebonyi State*, Unpublished Ph.D. Thesis Ebonyi State University, Abakaliki.

Popkin, B (2001), The Nutrition transition and obesity in the developing world. *Journal of Nutrition 131(3), 8715-8735*

Ray, (2016), *Hunger and Malnutrition*. Londan. Mauthem ltd

Rush, I.K (2000) *Food Security and Poverty*. Finance and Development 22 (1), 60-72.

Thomposon, B and Brown, K.H. (2010), *Combating Micro-nutrient Defunds:* Food based Approaches. Rome: FAO.

Weisenberger, J. (2020). *Micronutrients* Innerbody Research. www.innwebody.

World Health Organization (2011), *Global Databased on body mass index*.