

SOCIO-ECONOMIC DETERMINANTS OF NUTRITIONAL STATUS OF WOMEN BENEFICIARIES OF UNICEF-ASSISTED NUTRITION ENHANCEMENT PROGRAMME IN ABIA STATE, NIGERIA

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ABSTRACT

The study analysed the effect of UNICEF-assisted nutrition enhancement programme on the nutritional status of women beneficiaries in Abia State. Multi stage random sampling technique was adopted for the study. The total sample size for the study was one hundred and twenty respondents. A set of structured questionnaire was used to elicit information from the respondents. Data obtained from the study were analysed using descriptive statistics and multiple regression. The double-log form of regression showed R^2 value of 0.94. The results obtained showed that age (7.994318), education (8.591687), income (2.490001) were positively and significantly related to UNICEF nutrition programme (3.433564) being positively significant at 1% also affected their nutritional status, while household size (-2.519484) was negatively significant. Among other things, it is recommended that, Government should give education of the girl child a policy support in Nigeria for it will avail the less privileged ones the opportunity of going to school and being educated, and as a way of sustaining the women's nutritional status for reproduction and food security at the household level and development in its entirety at large.

Key words: Nutrition enhancement programme, Socio-economic determinants, Body mass index

INTRODUCTION

Food is any substance of plant or animal origin, consumed to provide nutritional support for the body thus keeping consumers alive and healthy, and enabling them to grow and reproduce their like. Substances that promote biochemical and physiological functions of the body are usually classified into carbohydrates, fats, proteins, vitamins or minerals and water (Davidson, 2006). Nutrients are categorized into macro (needed in relatively large amounts) and micro (needed in smaller quantities) classes. The macronutrients include carbohydrates, fats, fibre, protein, and water, while the micronutrients are minerals and vitamins.

The macronutrients provide structural materials (amino acid from which proteins are built, and lipids from which cell membrane and some molecules are built) for energy. Most of the structural materials can be used to generate energy internally. Vitamins, minerals, fibre and water do not provide energy; rather, they are required for other purposes which include the protection or influence of some body systems for effective

functioning (WHO, 2008). However, most foods contain a mix of some or all of the nutrient classes, together with other substances, such as toxins of various sorts; and whereas some nutrients can be stored internally (e.g the fat soluble vitamins), others are required more or less continuously.

A major problem faced by nutritionists is determining what food types and in what combinations are best to meet the dietary needs of special groups e.g women, babies, elderly people, etc. Women's role in food production, and preparation at the household level, and their involvement in other agriculturally-related activities have been known and appraised to comprise a large number of them (women) both in Africa and in the world at large. In Africa alone, women constitute about 60-80% of the Nigerian agricultural labour force and they produce over 70% of the domestic food crops thereby helping to ensure family and national food security (Akpabio, 2005). They shoulder over 90% of domestic responsibilities and are national resource managers and environmental experts. They play multiple roles in the family food security and nutritional balance as food producers and processors, as well as keepers of traditional knowledge and preservers of biodiversity. They are universally responsible for food preparation for their families. As such, they are key players in overcoming malnutrition (Fatman, 2009). Considering all these responsibilities and more, women's nutritional status should be such that is capable of enhancing their activities.

Women's participation in agricultural and agriculturally-related activities and processes depends solely on the extent to which they enjoy good health and wellbeing. It is obvious from the foregoing that women's basal metabolic rate (BMR) and physical activity level (PAL) are quite high. BMR increases with pregnancy because energy is required to produce a baby, and bear the burden of lactation and is also affected by the growth of placenta and reproductive organs (Lean, 2006)

Poor health can be caused by lack of required nutrients or, in extreme cases, too much of a required nutrient. For example, salt and water (both absolutely required) will cause illness or even death in excessive amounts (Andrew, Lawrence, Harry and Anand, 2009; British Broadcasting Corporation, 2007). Nutrition, also called nourishment, is the provision to cells and organisms of the materials necessary (in the form of food) to support life. Many common health problems can be prevented or alleviated with a healthy diet (Eckel, Barra, Lichtenstein and Yin-Piazza, 2007). The diet of an organism is what it eats, which is largely determined by the perceived palatability of foods (Andrew et al., 2009).

A poor diet can have an injurious impact on health, causing deficiency diseases such as scurvy, beriberi, diabetes, cardiovascular diseases, obesity, and even death. Poor diet can also have deficiency effects as fatigue upon exertion, reduced stamina, stunted growth, impaired motor development and learning problems in children, and equally weakens resistance to infectious diseases because immune function decreases when such nutrients as protein, vitamin A, zinc are very low in a diet (UNICEF, 2006; Alderman, Appleton, Haddad, Song and Yohannes, 2001).

Inadequate consumption of protein and energy, as well as deficiencies in key micronutrients, such as vitamin A and iron are key factors in the morbidity of children

and adults. It was estimated that 55% of the nearly 12 million deaths each year among under-five old children in the developing world were associated with malnutrition (UNICEF, 2008). Iron Deficiency Anaemia (IDA) in pregnant women affects not only the sufferer, but the outcome of the pregnancy as well. Low birth weight in new-born's is often the result, and the mother's energy level is reduced to the point of jeopardizing her life during delivery, care giving practices for the new-born and other children in the family (United Nations Standing Committee on Nutrition, UN/SCN, 2000)

Food and Agriculture Organisation (2002) posited that dietary insufficiencies render pregnancy and childbirth more dangerous as a result of inequitable distribution of food. They maintained that women's health and nutritional status is important for both the quality of their lives and the survival and healthy development of their children, for women's health and their nutrition. However, any direct action to improve women's health and nutrition complement the struggle to achieve the long-term goals of gender equity and women's empowerment. The index of maternal mortality for Nigeria is estimated at 630 deaths per 100 000 live births (Adebayo, 2012). According to United Nations Children's Emergency Fund (UNICEF, 2008), nearly one-third of all sub-Saharan children under the age of five are thought to be underweight. This is cause for concern since there is now evidence that the risk of mortality is elevated for children who are mildly to moderately underweight.

Concerted efforts have been made by government and non-governmental organisations towards the development of our rural areas via improvement in food production and nutrition at the household level. UNICEF (2008) noted that since 2002 the UNICEF A Field Enugu Nigeria has been formulating and implementing nutrition programmes in various parts of South East Nigeria including Abia State. The nutritional programme of UNICEF is aimed at boosting the nutritional status of women in the zone as to enable them contribute immensely to food production at the household level. This programme has in many important ways contributed to the nutritional development and well being of women in Abia State for several years. Given the importance of the programme in enhancing the nutritional status of women in the State, it is imperative to appraise its effectiveness as it affects the socio-economic status of the women. To achieve this, attempts were made to answer the following questions:

1. To what extent do the socio-economic characteristics of rural women in Abia State influence their nutritional status?
2. What are the effects of the UNICEF-assisted nutrition programme packages on the nutritional status of rural women?

The specific objectives of the study were

- To describe the socio-economic characteristics of these rural women beneficiaries of the programme in Abia State,
- To describe the effect of the UNICEF-assisted nutrition programme on the nutritional status of these women.

It was hypothesized that UNICEF- assisted nutrition programme has a positive effect on the nutritional status of the beneficiaries (rural women).

METHODOLOGY

The study was conducted in Abia State of Nigeria. Abia State which was created in 1991 lies between Longitude 7° 23'E and 8° 02'E, and Latitude 5° 47'N and 6° 12'N (Federal Republic of Nigeria, 2009). It is bounded in the West by Imo State, North West by Anambra, Enugu and Ebonyi States. In the East and South, the State shares boundaries with Cross River and Akwa-Ibom states. It is bounded by Rivers State in the South. Abia State occupies a land mass of about 7629 kilometres square (km²), and has a population of about 2,845,380 people (NPC, 2006).

The population of the study comprised rural women who benefited from the UNICEF-assisted nutrition programme in Abia State. Multi stage random sampling technique was used to select the respondents for the study. Multi-stage random sampling technique was adopted for this study. At the first stage, simple random sampling was used to select the three LGAs from the study area. At the second stage, two communities that benefitted from the UNICEF Nutrition programme were selected from each of the three LGAs. At the third stage, 20 community members were sampled from each of the selected communities. This gave a total sample size of 120 respondents. Interview schedule and structured questionnaire were used to generate data for the study. Descriptive and inferential statistics were used to analyse the generated data. Frequency and percentages were used to describe the socio-economic characteristics of the rural women, while multiple regression was used to determine the extent to which age, income, education, marital status, occupation, household size predicted the nutritional status. The multiple regression model is implicitly specified as:

$$Y = f(X_1, X_2, X_3, X_4, X_5, \dots, X_n)$$

Where Y = Nutritional Status of respondents (BMI)

X₁ = Age (in years)

X₂ = Level of formal Education (in years)

X₃ = Occupation (full-time farming=1, Combined with others=0)

X₄ = Level of income (in Naira)

X₅ = Marital status (Married=1, Otherwise=0)

X₆ = Household size (number)

U = Stochastic error term

Four functional forms of the model (linear, semi-log, double-log and exponential) were tried and the double log function was chosen as the lead equation based on the magnitude of coefficient of multiple determination (R²), the F statistic, the number of significant variables, as well as conformity with *a priori* expectations.

RESULTS AND DISCUSSION

Socio- Economic Characteristics of Respondents

Table 1 shows the socio-economic characteristics of the respondents. The result shows that majority (60%) of the respondents were in the age bracket of 26-35 years, while eighty-seven percent were in the age range of 26-51 years. The mean age of the women was 31 years. This implies that these women were within the reproductive age (15-49), a

period when women are energetic to undertake productive ventures with the aim of contributing to the betterment and development of their lives, family and society at large. The Table also shows that 48% of the respondents had secondary education as their highest academic qualification. This suggests that the women had received relatively above basic education. This is indicative that they were educated enough to comprehend the contents of the UNICEF nutrition programme for rural women and adopt same. This therefore indicates that the assumption of Doak et al (1996) that approximately 90 million adults in the United States of America (and perhaps much more in the developing countries of Africa, Asia and Southern America) had inadequate or marginal literacy and knowledgeable skill no longer holds.

The Table also shows that 45% of the respondents were primarily farmers, with majority (98%) having farming experience of between 5- 19 years. Nwaru (2004) posits that the number of years a farmer has spent in the farming business is associated with practical knowledge acquired on how to overcome certain inherent farm production challenges. Table 1 also indicates that about 45% of the respondents have an annual income of between ₦151, 000.00 – ₦350, 000.00, and an annual average income of ₦288, 083.30. This implies that those rural women in the study area subsist at very marginal income level.

Table1: Socio-economic profile of respondents

| Variables | Frequency | Percentage | Mean |
|-------------------------|-----------|------------|--------------|
| Age (in years) | | | |
| 15-25 | 16 | 13.3 | |
| 26-35 | 76 | 63.3 | |
| 36-45 | 26 | 21.7 | |
| 46-55 | 2 | 1.7 | 31.40 |
| Education Level | | | |
| No formal education | 14 | 11.7 | |
| Primary | 22 | 18.3 | |
| Secondary | 58 | 48.3 | |
| Tertiary | 26 | 21.7 | |
| Primary occupation | | | |
| Farming | 54 | 45.0 | |
| Artisan | 18 | 15.0 | |
| Public/civil service | 18 | 15.0 | |
| Trading | 30 | 25.0 | |
| Farm size (in hectares) | | | |
| <0.5 | 70 | 58.3 | |
| 0.5—1.99 | 20 | 16.7 | |
| 2.0—2.99 | 28 | 23.3 | |
| 3.0—3.99 | 2 | 1.7 | 0.86 |

| | | | |
|--------------------|----|------|---------------------|
| Farming experience | | | |
| <5 | 72 | 60.0 | |
| 5—9 | 14 | 11.7 | |
| 10—14 | 20 | 16.7 | |
| 15—19 | 12 | 10.0 | |
| 20—24 | 2 | 1.6 | 4.72 |
| Annual income (₦) | | | |
| 50,000—150,000 | 34 | 28.3 | |
| 150,001—250,000 | 38 | 31.7 | |
| 250,001—350,000 | 16 | 13.3 | |
| 350,001—450,000 | 24 | 20.0 | |
| 450,001—550,000 | 8 | 6.7 | ₦288, 083.30 |
| Marital Status | | | |
| Married | 86 | 71.7 | |
| Single | 12 | 10.0 | |
| Separated | 18 | 15.0 | |
| Divorced | 0 | 00.0 | |
| Widowed | 4 | 03.3 | |
| Household Size | | | |
| 1—2 | 22 | 18.3 | |
| 3—4 | 48 | 40.0 | |
| 5—6 | 50 | 31.7 | 3.97 |

Source: Field survey

The women imperatively were not well positioned financially to embrace nutritional novelties, information on healthy food choices, agricultural technologies and increased nutritional knowledge. Ukoha, et al. (2007) stressed that income is a major determinant of welfare/ wellbeing. This means that the higher the income a household receives, the higher its living standards would be. About 71% of the respondents were married, with 41% having a household size of 5-6 persons living with them. This show a deviation from the situation in a typical African household where fecundity is encouraged for large household size for the provision of labour on the farm (Ekong, 2003).

Determinants of Nutritional Status

Various functional forms of multiple regression analysis were tried in the estimation of the socio-economic determinants of nutritional status of women beneficiaries of the UNICEF –assisted nutrition programme and the double log function was chosen as lead equation on the basis of values of coefficient of multiple determinations (R^2), the F statistic and the number of significant variables, as well as conformity with *a priori* expectations.

As shown in Table 2, the coefficient of age (7.994318) of the rural women was positive and highly significant with nutritional status at 1% level. This implied that higher level of understanding and deeper experience in household health and nutritional issues

come with age. In other words, women become better managers of nutrition and nutrition-related issues as they advance in age. Increasing age is a risk factor in most disease conditions- hypertension, obesity, diabetes, cancer, etc with malnutrition and dietary changes serving as precursors' in most cases (Gupta, 2007).

Table 2: Determinants of nutritional Status of Rural Women.

| Variables | Linear | Exponential | Semi-log | Double log |
|----------------|---------------------------|-----------------------------|--------------------------|---------------------------|
| + | | | | |
| Constant | -31.83287 (-5.32372)** | 3.089441 (13.17624) ** | -90.56334 (-2.295876) | 5.110478 (6.480695) |
| *** | | | | |
| Age | 2.460774 (5.438687)*** | 0.034866 (6.973132) *** | 28.00558 (5.792436) | 2.339782 (7.994318) |
| *** | | | | |
| Education | 0.085291 (0.64322) | 0.008516 (1.650885) | 1.833905 (1.464839) | 1.074641 (8.591687) |
| *** | | | | |
| Household size | -0.540996 (-1.304781) | -0.027354 (-5.607851)*** | -2.074898 (2.6634637) | -1.867153 (-2.519484) |
| ** | | | | |
| Income | -5.14E-06 (-1.199322) | 0.177950 (3.519340)*** | -0.013724 (-0.177395) | 2.553282 (2.490001) ** |
| Marital Status | 5.641580 (6.914211)*** | -0.039358 (-2.099555) | -2.145311 (-3.313717) | 0.055386 (1.490196) |
| Occupation | 1.155869 (1.772694) | -0.009458 (-0.369902) | -0.541550 (-0.793560) | -0.032689 (-0.791282) |
| UNICEF | 1.174521 (1.895237) | -0.002355 (-0.096914) | 0.049270 (1.676426) | 2.901686 (3.433564) |
| *** | | | | |
| R ² | 0.853730 | 0.870046 | 0.865708 | 0.946839 |
| F Value | 62.43840*** | 68.31595*** | 66.51903*** | 77.27017*** |

Source: Field Survey.

NB: figures in parentheses are t-values, + = lead equation, *** & **=significance level of 1 and 5 percent (%) respectively.

There was a positive and significant relationship between education (8.591687) and nutritional status. Education is essential for boosting understanding, dynamism and reception/ acceptance to change Adebayo (2008). This implies that the more educated the woman becomes, the higher the nutritional status she and members of her household would enjoy. Education exposes one to better ways of managing resources and doing things. There is a close link between women's educational level and involvement in decision making regarding childcare and nutrition / family dietary needs (Uwaegbute and Oke, 2004).

Table 2 also shows that income (2.490001) was positively and significantly related to nutritional status. This implies that as income increases, the better their nutritional status becomes. This result is consistent with *a priori* expectation. The positive sign of the coefficient for income depicts that earned income facilitates procurement of foods and food supplements and drugs necessary for maintaining a high nutritional status. However, there was a negative significant relationship between household size (-2.519484) and nutritional status. This result agrees with Ukoha, et al, (2007) that the larger the household size, the more difficult it would be to meet the basic requirements of the household members; including food.

Given that the double log coefficients can be interpreted as elasticities, it could be inferred that education contributed most to nutritional status, followed by age. The coefficient of multiple determination (R^2) of 0.94 implies that 94 percent variability in the nutritional status was explained by the model, while 6 percent could be attributed to error and omitted variables. The data fit the regression line to a reasonable high extent as a goodness- of-fit measure. The F- value of 77.3 which were significant confirms the significance of the entire model.

CONCLUSION

Having examined the socio-economic determinants of nutritional status of women in Abia State, Nigeria, using multiple regression analysis, the outcome has huge implications for addressing their wellbeing and food security in Nigeria. The study identified a number of socio-economic factors that appear to be significant in determining women's nutritional status. In particular, age, education and income stood out as positive determinants of nutritional status of women, while household size negatively determined the women's nutritional status.

RECOMMENDATIONS

Based on the findings, the following recommendations are made.

1. Education of the girl child policy support should be made compulsory in Nigeria as it will serve as a way of consolidating sustainable rural women's nutritional status for health and development. Education will help women to understand human nutrition basics, as well as rules for healthy eating. It will also enhance their ability to identify credible sources of nutritional advice.
2. Also, since the programme impacted positively on the nutritional status of the rural women, it is therefore recommended that community counsellors should be sent to rural areas to serve as contact point in sensitizing more women on the programme and other health/nutritional issues.
3. To encourage the women to participate more appropriately in the programme and harness the benefits accruing from it, it is recommended that the government and various donor agencies like UNICEF should provide credit facilities to the rural women to enhance their annual income level.

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