

Assessment of Intra-Household Nutritional Status in A Rural Nigerian Population

Helen Henry-Unaeze¹⁺, E.K Ngwu², U.A Okore¹

¹ Department of Human Nutrition and Dietetics Michael Okpara University of Agriculture Umudike P.M.B. 7267, Umuahia Abia State, Nigeria

² Department of Home Science, Nutrition and Dietetics, University of Nigeria, Nsukka

Abstract. The study assessed the intra-household nutritional status of 50 households with 202 family members in Ikwuano, Nigeria. Data were obtained through pre-tested questionnaires and anthropometry. The results indicate that 56% of food procurement was by market purchases + home grown, 22% was by market purchases only, while market purchases + home grown + gift was (22%). The mode of food distribution was mainly individually (42%), followed by collectively (32%) while individually + collectively was 26%. The largest quantity of foods in the family was consumed by fathers (36%), mothers (30%) youngest child (16%), eldest child (6%), everyone (5%) and both parents (1%). Data on nutritional status showed underweight (parent 4.8%, children 67.2%), normal weight (parents 55.4%, children 26.9%), overweight (parent 31.3%, children 5.9%) and obese (parent 8.4%, children 0.0%). The male-headed households had better nutritional status than female-headed households. The study showed that improper method of food allocation was employed by the study population with a consequent existence of double burden of malnutrition in the households.

Keywords: Intra-household, Nutritional status, Rural studies

1. Introduction

Nutrition assessment is an in-depth evaluation of both objective and subjective data related to an individual food and nutrient intakes, lifestyle and medical history (Bender and Bender, 2005). Food availability and distribution is a problem in developing countries as social-economic-cultural factors play significant role in food issues. In certain rural Nigeria society, the adult male has priority over other household members in food distribution. Culture also affects food intake through food prohibition and restriction or food taboo. Ene-Obong (2001) documented that food taboos exist to forbid certain foods by members of household or an individual by reason of such things as age and sex. Also, the number of people in a household will affect the quantity and quality of food consumed. Okaka *et al.* (2002) stated that the inability to control family sizes to a large extent is responsible for the nutritional problems in developing countries. Several studies have generated data on the nutritional status of the different life cycle stages (Mariko and Hughes, 2006). Relatively, little information has been published on the effect of socio-economic-cultural factors on the nutritional status of all household members. Given the dietary guidelines (Ene-Obong, 2001) for the various age groups, the knowledge of intra-household nutritional status is necessary to provide appropriate nutritional advice to household members.

2. Materials and Methods

⁺ Corresponding author. Tel.: +2348063548581
E-mail address: nwachi_helen@yahoo.com

This study was carried out in Umudike, Nigeria. Umudike is located 8 km east of Umuahia and it is a typical rural farming community. However, the presence of Michael Okpara University of Agriculture Umudike and National Root Crops Research Institute, Umudike has introduced some level of urbanization.

2.1. Data Collection

In 2008, 10% of the total household in Umudike was purposively used for the study. Simple random sampling was used to select the 50 households (HHs) which comprises of 202 family members. Structured-interviewer-administered questionnaires were used to collect information on the demographic, socio-economic characteristics and dietary patterns of the study households. Anthropometric measurements were taken on all subjects using the procedure outlined by Jelliffe (1966). The weights were measured to the nearest 0.1kg using a portable Salter scale. The height was also measured to the nearest 0.01 meter using a wooden height-gauge. The arm circumferences were measured using a non-stretchable tape rule and skinfold thicknesses were obtained with a Holtain skinfold caliper. The subject's body mass index (BMI) was determined as weight/height (kg/m^2) to detect underweight, normal weight, overweight and obesity among and within the household. Descriptive statistics of frequencies, percentages, range, mean \pm standard deviation (SD) were determined on the data collected using the statistical package for social sciences (SPSS) v.12.

3. Results and discussion

Most of the study households were headed by males (74%). A typical African man is seen as the traditional head of household, the breadwinner whose central role is to provide for both immediate and extended family members (Extended family culture, 2012). This implies that the households (26%) that were headed by females might have resulted from either death of spouse, divorce or separation. It might also be due to momentous change in household structures as control over resources has shifted gradually away from men to women (Silberschmidt, 1999). The major food procurement strategy (market purchases + home grown) revealed that although they were mainly farmers, market purchases constitute most part of their food procurement strategy (Table 1). By implication, the farmers must be small scale farmers and cannot produce enough for their households and thus depends on market purchases to supplement their insufficiency. Many of the households distribute family meals individually. Notwithstanding this, an appreciable number use collective method which may be due to poor economic status since poor households hardly have enough to go round individually. Those who use both collective and individual method of food distribution may have done so to accord the male sect priority over others who now have collective meals as it is traditionally expected. The food consumption showed that staples were frequently consumed by all households (Table 2). This is usual for all African communities as staples (roots, legumes and cereals) always form a base for all food consumed (World Food and Wine, 2012). There were also appreciable consumption of nuts, fats and oil. This is because these foods are readily available to farming households. Surprisingly fruits and vegetables which are usually available to farming households were not consumed as expected. This could be probably because the farming households did not produce enough to eat. The little they produced was sold to obtain income for other household needs. Their consumption of animal products was low and is comparable with animal consumption in most rural African community (World Food and Wine, 2012). This is because animal products are usually expensive and could not be afforded by most households. Thirty-five percent of the study households allocate largest quantity of family foods to the fathers. These households are typical traditional households which accord priority to the eldest male member of the household. The households where mothers consume the largest quantity of family foods could be those that are headed by females as well as those where females are the bread winners. This study revealed that the older sector of the households receives the largest share of family meals compared to the younger ones. The youngest child was slightly favored probably because he/she is the newest member of the households. The anthropometric data reflects the effect of pattern of food distribution on nutritional status. Both parents had better nutritional status than their children (Fig 2a, b and c). There were more normal weight parents compared to the children. The MUAC data substantiated the BMI data (Table 3). There were more malnourished children than parents. The nutritional status of the children based on the anthropometric data was generally bad. Although the parents had better nutritional status they also had overweight and obesity. This shows that both overweight

and underweight coexist in the same household and the same community and is in line with SCN (2006) document which stated that as countries develop economically, both over-nutrition and under-nutrition increasingly co-exist; at first more in the urban than rural areas, but then increasingly in the same communities and eventually even in the same households. In this study, there were more overweight fathers than mothers and more obese mothers than fathers. For the children, the males had slightly better nutritional status compared to the females. This pattern could also be seen between the mothers and fathers. This pattern of males having better nutritional status than females further reflected the effect of priority for males in a typical African traditional culture. The BMI of male headed- households were better than the female-headed households. This shows that despite the level of malnutrition in the study population, their age, height and weight were still in line with the pattern “as age increases, height also increases for children and stops or decreases in adults (Kleinman, 2004).

Table 1: Household food procurement and distribution methods

Variables	Frequency	Percentage
Food procurement		
Market purchases (MP)	11	22
Homegrown (Hg)+ MP	28	56
Hg + MP + Gift	11	22
Food distribution		
Individually	21	42
Collectively	16	32
Individually + collectively	13	26

Table 2: Daily Food consumption of households

Type of food	No of households	percentages
Staples (roots, tubers, legumes, cereals)	50	100
Fruits and vegetables	28	56
Animal products (meat, fish, poultry & products)	9	18
Fats and oil	44	88
Nuts	47	94

Table 3: Mean anthropometric parameters of the study population

Parameters	Male-headed households Mean ± SD	Female-headed households Mean ± SD
Weight (kg)	40.38 ± 25.41	47.90 ± 18.63
Height (m)	1.31 ± 0.32	1.47 ± 0.15
BMI (kg/m ²)	20.30 ± 6.12	21.16 ± 5.43
MUAC (cm)	22.95 ± 7.58	24.34 ± 6.05
Triceps (mm)	13.39 ± 6.17	12.41 ± 5.35
Biceps (mm)	8.76 ± 1.95	8.79 ± 2.39
Sub-scapular (mm)	14.35 ± 9.20	11.38 ± 4.83
Supra-iliac (mm)	11.54 ± 6.66	11.50 ± 7.76

4. Conclusion

The study showed that male-headed households were more in number than the female-headed households. They were mostly subsistent farmers who rely heavily on market purchases for consumption. Their method of food distribution and quantity allocation does not actually favor the children (and women) which explains why the parents had better nutritional status than children and the existence of double burden of malnutrition in the households and community. The priority accorded to the male sector also resulted in male-headed households having better nutritional status than females. There is urgent need for nutrition education with emphasis on adequate food for all life cycle stages.

5. Acknowledgement

I humbly wish to acknowledge Princewill C. Ogbonna for all the necessary assistance on this manuscript.

6. References

- [1] A.E. Bender, D.A. Bender. A dictionary of Food and nutrition, Oxford University Press, 2005.
- [2] H.N.Ene-Obong, H.N. Eating right (A nutrition guide). The University of Calabar Press.
Extended Family Culture in Africa 87 <http://philipo.hubpages.com/hub/Extended-family-culture-in-Africa> 2001.
- [3] D.B. Jelliffe. The assessment of the nutritional status of the community. WHO Monograph Series. No 53, WHO Geneva, 25pp, 1966.
- [4] J.C. Okaka, E.N.T. Akobundu, M. Silberschmidt. Disempowerment of men in rural and urban East African: Implications for male identity and sexual behavior. World Development 2002, 29 (4): 657-71.
- [5] J.C. Okaka, N.C. Antoinette. Human Nutrition (An integrated approach) Janco Academic Press, 2002.
- [6] D. Mariko, C. Hughes. (2006) An exploratory Analysis of child nutritional status in the Sahel, the Goundam circle case study – Timbuktu region – Mali West Africa Regional Food for Peace office USAID / West Africa Professional paper series 2006, 4 1-14.
- [7] World Food and Wine. Food in Africa <http://world-foodandwine.com/food-in-africa> 19 feb 2012 10:30;51 GMT.

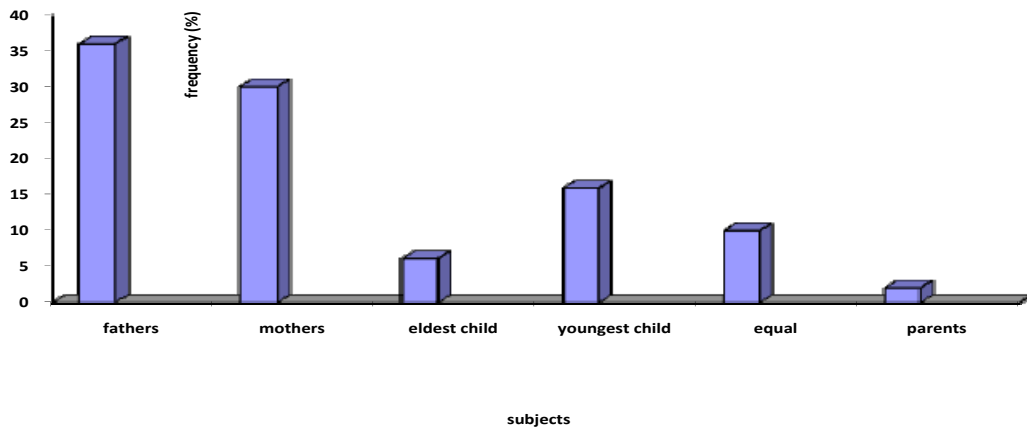


Fig. 1: Quantitative distribution of household meals

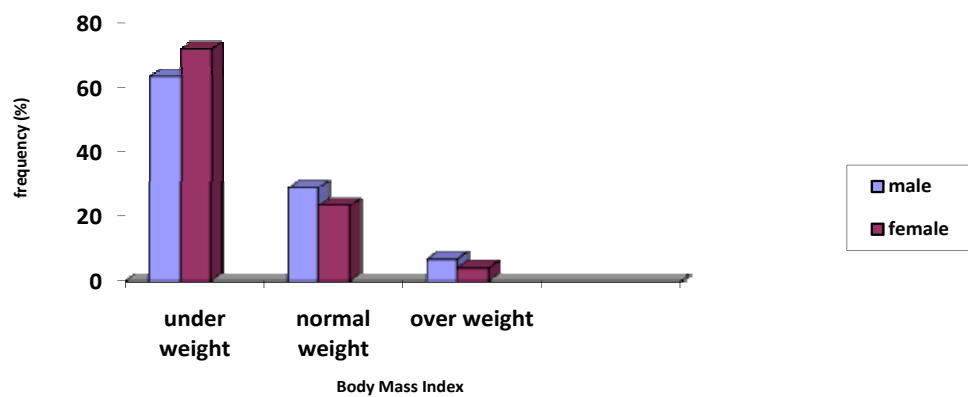


Fig. 2a: Body mass index of study children

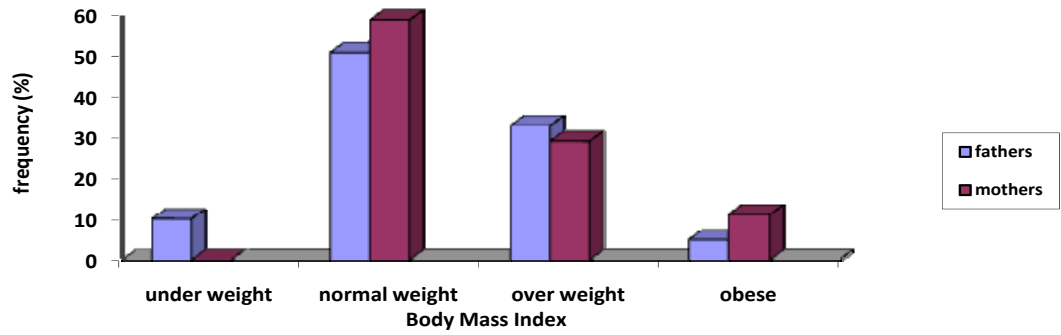


Fig. 2b: Body Mass Index of study parents

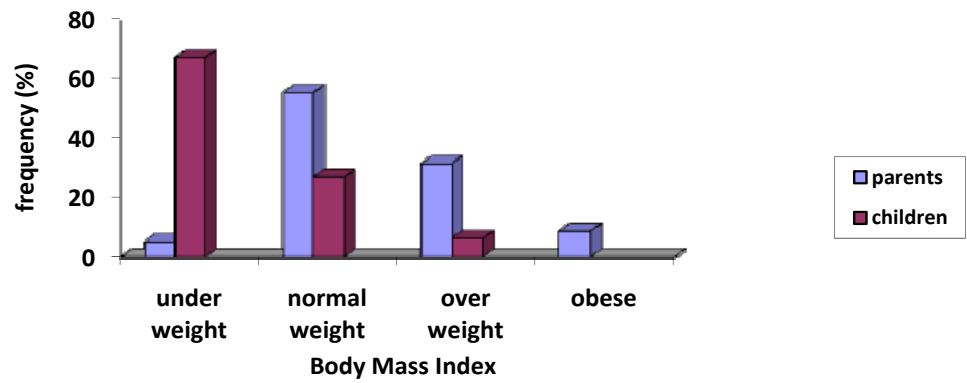


Fig. 2c: Body Mass Index of study population