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NUTRITIONAL KNOWLEDGE OF MOTHERS / CAREGIVERS AND ANTHROPOMETRIC INDICES OF CHILDREN (2-5 YREARS) IN OBOWO LOCAL GOVERNMENT AREA, IMO STATE, NIGERIA.

OLY-ALAWUBA N.M. AND IHEDIOHA S. A.

Department of Nutrition and Dietetics, Imo State University, Owerri

Abstract:

Background: *The study assesses the nutritional knowledge of mothers/caregivers and anthropometric indices of children (2-5yrs) in obowo local government Area of imo state, Nigeria.*

Objective*: The objective of the study was to investigate the nutritional status of children (2-5years) in relation to the mothers / caregivers Nutritional Knowledge in Obowo Local Government Area of Imo State.*

Methods: *A total of 400 children (2-5 years) were randomly selected from four purposively selected nursey and primary schools in the four communites of obowo Local Government Area. A validated and pre-tested self administered questionnaires were used to obtain information on bio-data, educational level and anthropometric measurements. Body mass index (B.M.I) were classified using standard methods. Data was analysed using freguencies, percentages, means, standard deviations and chi-square tests.*

Results*: The results showed that 7.8% of children were overweight (8.6%male and 7.2% female), 1.3% were wasted (2.9% male), 6.4% were stunted (5.6% male and 7.0%female), there was significant ($p<0.05$)relationship between anthropometric indices and gender. 77.5% mothers/caregivers had reported that they had knowledge of nutrition education, 45% had knowledge of nutritional status, 50% view childhood obesity as normal growth and sign of wealth and happiness, 37% got nutrition information from hospital and 73.8% take their child to hospital when sick, there was a significant ($p<0.05$) relationship between knowledge of nutrition education of mother/caregivers and the nutritional status of children.*

Conclusion*: The study revealed a co-existence of malnutrition and poor eating habits. There was significant relationship between poor knowledge of Nutrition and Nutritional status hence, there is need to reinforce nutrition education for healthy living and optimal growth of the children in the communities of Obowo Local Government Area.*

Keywords: *Nutritional status, Nutrition education, Anthropometric measurement and Malnutrition.*

1. INTRODUCTION

Nutritional status can be described as the condition of health of a person that is influenced by the intake and utilization of nutrients. When the nutrients provided in the diet are inadequate or not utilized properly, it results in a state of imbalance in the body.

There are two types of malnutrition these include the condition of health of a person that results due to the lack of one or more nutrients is called *Undernutrition* **.** When there is excess intake of nutrient it results in *Overnutrition.* But undernutrition is more common around us. In fact malnutrition has become a synonym of undernutrition (1).

Malnutrition exists in every society, whether it is technically advanced or newly developing. Recently, there has been an increase in the prevalence of malnutrition in Africa, which means that the goal set to reduce the levels of malnutrition by 50% between 1990 and 2015 may not be met (2). The Prevalence of childhood under nutrition is alarmingly high in Nigeria, for instance, government of Nigeria and the United Nations children's fund in 1993 revealed that Kano State in the Northern Savannah zone of the country faced worsening food insecurity (3).

The major underlying causes of nutritional problems include poor maternal and child care practices, lack of awareness ,and nutritional education and background of the parents, family food insecurity, poor access to good quality health and sanitation services (4). Most important of these factors is the education background and nutritional knowledge of the mothers. Poor nutrition is also caused by non-exclusive breast feeding, the early introduction of food other than breastfeeding and inadequate amount of complementary foods, starting at about six months (5).

Therefore, this work is aimed at assessing the nutritional knowledge of mothers / care gives and anthropometric indies of children (2-5 years) in Obowo Local Government Area, Imo State, Nigeria.

2. MATERIALS AND METHODS

STUDY DESIGN

A cross – sectional study design was used for this study.

STUDY AREA

The study was carried out in Obowo L.G.A of Imo State, Nigeria. From 4 purposively selected nursery and primary schools in 4 communities in Obowo L.G.A, in the month of October,2015 using balloting method without replacement.

SAMPLING PROCEDURE

The study population consisted of 137,810. A sample size of 400 respondents was determined using the formula below

Formula

$$n = N/1+N(e^2$$

where n = sample size

N = population size

1 = constant

e = margin of error test of significance

A test significance of 0.05 or 5% was used.

$$n = \frac{137,810}{1+ 137,810\ (0.05)^2}$$

Where N is the population size, n is the sample size, e is the margin of error (0.05), 1 is constant. Mother -child pairs within the age range of 2-5 years whose consent were obtained to participate for the study were used and the objectives of the study were explained to them.

3. DATA COLLECTION

Four research assistants, were trained on questionnaire administration and measurement procedures. some structured, validated, questionnaires by some lecturers in the Nutrition and Dietetics Department of Imo State University, Owerri were pretested for information on socio-economic and demographic characteristic and responses were obtained.

4. ANTHROPOMETRIC ASSESSMENT

Anthropometric measurements of height and weight were taken.

The weight of the subjects were measured to the nearest 0.1kg using portable bathroom scale (HANSON MODEL).

Height was measured to the nearest 0.1cm using a wooden standiometer .

The Anthropometric indices of weight for height, height for age, weight for age and B.M.I for age was computed and analyzed using standard procedures of WHO Antro- software version 22 (6).

5. DATA ANALYSIS

Data was analyzed using SPSS Version 22. Descriptive statistics such as frequency, percentage, means and standard deviations were used to analyze data. Chi-Square test were used to determine significance difference and association between variables using significance level $p < 0.05$.

6. RESULTS

Table 1 shows the Nutritional status using Anthropometric indices by gender.

Approximately (3.0%) and 5.7% of male, children were severely and moderately overweight respectively while 2.4% and 4.8% were severely and moderately overweight among female counterpart 2.9% of male children were severely wasted while none among the female children.

There is no significance ($p<0.05$) difference in weight-for-height between male and female children. In this study 2.8 to each of male children were severely and moderately stunted respectively while 7.0% were moderately stunted among female children.

There is significance ($p<0.05$) difference in height-for-age between male and female children. In this study few (2.8%) of male children were moderately overweight compared with 7.0% and 2.3% of their female counterpart that were severely and moderately over weight respectively, based on weight-for-age indices. There is significance ($p<0.05$) difference in weight-for-age indices between male and female children studied.

Few, (2.8%) each of male and female children were severely and moderately overweight compared to 2.3% and 7.0% of female children that were severely and

moderately overweight in body mass index for age respectively.

2.8% of male children were severely underweight in body mass index for age while none among the female counterpart were wasted.

There is significance ($p<0.05$) difference in body mass index for age between male and female children in this study.

Table 1: *Nutritional status using Anthropometric indices by gender.*

Variables	Male n %	Female n %	Total n %	x-value	p-value
Weight for height					
Severe overweight	5 (2.9)	5 (2.4)	10(2.6)	6.443	0.092
Moderate overweight	10 (5.7)	10(4.8)	20(5.2)		
Healthy weight	155(88.6)	195(92.9)	850(90.9)		
Moderate wasting	0(0)	0 (0)	0(0.0)		
Severe wasting	5(2.9)	0(0)	5(1.3)		
Total	175 (100.0)	210(100.0)	385(100.0)		
Height-for-age					
Severe overgrowth	20 (11.1)	15(7.0)	35(8.9)	25.480	0.000
Moderate overweight	40(22.2)	20(9.3)	60(15.2)		
Normal growth	110(61.1)	165(76.7)	275(69.6)		
Moderate stunting	5(2.8)	15(7.0)	20(5.1)		
Severe stunting	5(2.8)	0(0.0)	5(1.3)		
Total	180(100.0)	215(100.0)	395(100.0)		
Weight-for-age					
Severe overweight	0(0.0)	15 (7.0)	15(3.4)	13.083	0.000
Moderate overweight	5(2.8)	5(2.3)	10(2.5)		
Healthy weight	175(97.2)	195(90.7)	370(93.7)		
Moderate underweight	0(0.0)	0 (0.0)	0(0.0)		
Severe underweight	0(0.0)	0(0.0)	0(0.0)		
Total	180 (100.0)	215(1000)	395(100.0)		
Body mass index for age					
Severe overweight	5(2.8)	5 (2.3)	10(2.5)	9.473	0.024
Moderate overweight	5(2.8)	15(7.0)	20(5.1)		
Healthy weight	165(91.7)	195(90.7)	360(91.1)		
Moderate underweight	0(0.0)	0 (0.0)	0(0.0)		
Severe underweight	5(2.8)	0(0.0)	5(1.3)		
Total	180 (100.0)	215(100.0)	395(100.0)		

Table 2 shows the socio-economic and demographic characteristic of caregiver.

Most (91.3%) of the caregiver were female with only 8.8% male caregiver, 96.3% were married, 82.5% of the caregivers were the biological parents of the children studied, approximately half (49.5%) of the caregiver had 4 to 6 number of persons per household, more than half (56.5%) of caregiver had Tertiary Education, 36.3% had secondary education while 5.5% and 1.8% had no formal and primary education respectively. More than half (50.3%) of the caregivers were civil servants, 31.8% were trader, 6.8% were farmers, 100% were unemployed and housewives. More than one third (39.3%) of the caregiver earned a monthly income of N10, 000 to N49, 999, with approximately (44.1%) earning a monthly income of less than N10, 000 per month.

Table 2: *Socio-economic and demographic characteristic of caregiver.*

Variables	Frequency (n)	Percent (%)
Gender		
Male	35	8.8
Female	365	91.3
Total	400	100.0
Marital status		
Single	5	1.5
Married	385	96.3
Widow	10	2.5
Total	400	100.0
Relationship with the child		
Parent	330	82.5
Guardian	30	7.5
Brother/Sister	30	7.5
Grand Parents	10	2.5
Total	400	100.0
Family size		
1-3	87	21.8
4-6	198	49.5
7-9	105	26.3
10 and above	10	2.5
Total	400	100.0
Educational qualification		
Primary	7	1.8
Secondary Education	145	36.3
Secondary Education	226	56.5
Formal Education	22	5.5
Total	400	100.0
Occupation		
Civil servant	201	50.3
Trader	127	31.8
Farmer	27	6.8
Employed/Housewife	40	10.0
Others	5	1.3
Total	400	100.0
Monthly Income		
Below N5,000	67	16.8
N5,000-N9,999	109	27.3
N10,000-N49,999	157	39.3
N50,000-N99,999	57	14.3
N100,000 and above	10	2.5
Total	400	100.0

Table 3 shows caregivers knowledge of Nutritional education and Health care of child.

Most (77.5%) of caregivers had nutritional education knowledge, less than half (45%) had knowledge of nutritional status, 46.1% of the caregivers view

childhood obesity as sign of overweight/obesity while 38.2% view childhood obesity as sign of normal growth with more than 11% who view childhood obesity as sign of richness and happiness. More than one third (37.5%) of caregiver got their nutrition education knowledge and information from hospital, 28.7% from media, 7.5% from school, 2.5% from friends and least and 1.3% from church.

Most (73.8%) of caregiver took their children to hospital when they are sick, 28.8% goes to chemist, 25% goes to health centers with 3.8% that do not go anywhere.

Table 3: *knowledge of Nutritional education and Health care of child*

Variable	Frequency(n)	Percent (%)
Knowledge of Nutritional Education		
Yes	310	77.5
No	90	22.5
Total	400	100.0
Knowledge of nutrition status		
Yes	180	45.0
No	220	55.0
Total	400	100.0
View of childhood obesity		
Normal growth	145	38.2
Wealth	30	7.9
Happiness	15	3.9
Sickness	15	3.9
Overweight/Obesity	175	46.1
Total	380	100.0
Source of Nutrition information		
Radio	15	3.8
Hospital	150	37.5
Television	55	13.8
Internet	15	3.8
Textbooks	25	6.3
School	30	7.5
Church	5	1.3
Friends	10	2.5
Where child is taken when sick		
Hospital	295	73.8
Chemist	115	28.8
Church	5	1.3
Herbalist	5	1.3
No where	15	3.8
Health centre	100	25.0

Table 4 shows Relationship between knowledge of nutritional education and nutritional status.

Knowledge of nutritional education of respondents were significantly related to their nutritional status. This is evidenced in the weight- for- height (x^2=10.098,p=0.018), Height-for-age (x^2=12.868, p=0.012) and weight-for-age (x^2=7.318, p=0.026).

Table 4: *Relationship between knowledge of nutritional education and nutritional status*

Knowledge of Nutritional Education

Variables	N yes %	n No %	x value	p-value
Weight-for-weight				
Severe overweight	10(3.3)	0(0.0)	10.098	0.018
Moderate overweight	20(6.6)	0(0.0)		
Healthy weight for height	270(88.5)	80(100)		
Severe wasting	5(1.6)	0(0.0)		
Total	350(100)	80(100)		
Height for age				
Severe overweight	30(9.7)	5(5.9)	12.868	0.012
Moderate overweight	45(14.5)	15(17.6)		
Normal height	220(71.0	55(64.7)		
Moderate stunting	10 (3.2)	10(11.8)		
Severe stunting	5(1.6)	0(0.0)		
Total	310(100.0)	85(100.0)		
Weight-for-age				
Severe overweight	15(4.8)	0(0.0)	7.318	0.026
Moderate overweight	10(3.2)	0(0.0)		
Healthy weight	285(91.9)	85(100)		
Total	310(100	85(100)		

7. DISCUSSION

The study revealed prevalence of malnutrition. 5.1% and 1.3% moderate and severe stunting (2.8% each of moderate and severe stunting in male and 7.0% moderate stunting in female), 1.3% severe wasting (2.9% of severe wasting in male and nil in female), 3.8% and 2.5% severe and moderate overweight (only 2.8% of moderate overweight in male and 7.0% and 2.3% of severe and moderate overweight in female). There is significance ($p<0.05$) relationship between nutritional status of children and gender. In this study, significantly more female were overweight than male children while male were significance more wasted than female children. The prevalence of the co-existence of malnutrition, stunting 6.4%, 1.3% wasting and 6.3% overweight observed in this study were lower than that observed (55% underweight and 13% stunting) and 35.7% underweight and 9.2% stunting by (7) in Zaria and (8) in Enugu eastern Nigeria respectively. The challenges of coping with feeding at this age could be a factor which coincides with the period of transition from breast milk feeding to complementary and adult feeding, a process fraught with inadequacies in our region.

This study found from socio-economic and demographic characteristics that majority of the caregivers of children in households were female, and

biological parents of the children studied, with highest educational qualification tertiary and secondary education and civil servant and trading as their occupation, though with low monthly income earning. This factors could affects the quality of caring and feeding of the children in this study.

The study found that good number of respondents had knowledge of nutrition education, though their view regarding knowledge nutritional status and childhood obesity were poor and faulty as most respondent still attributes childhood obesity as normal growth sign of affluence and good living rather than seeing it as a nutritional problems that needed urgent intervention. It was observed that common sources of this nutrition information where from hospitals. It could be that adequate Nutrition information were not giving at hospitals due to lack or absence of nutritionist and Dietitian in our hospitals. This study found relationship between knowledge of nutrition education and the nutritional status of the children. This shows that nutrition education could be an important weapon for arresting malnutrition among children in Nigeria. Knowledge of good food habits, food preparation and distribution of food help to optimal nutritional status.

According to (9) unhealthy eating habits contributes to weight gain which leads to a higher Body Mass Index (BMI) level and waist circumference.

8. CONCLUSION

This study has revealed the co-existence of under-nutrition and over-nutrition among children 2-5 years in Obowo L.G.A Imo State and significant relationship between knowledge of nutrition education and the nutritional status of children. The study also, revealed the relationship between nutritional status of children and gender. There is therefore a need for the mother/caregivers and this children to be enlightened on the importance of nutrition education, healthy eating habits and good nutritional status through different channel, organization and levels by nutrition experts such as Dietitians and nutritionists.

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