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Research article

Socio-Economic and Cultural Determinants of Nutrition in Under-Five Children in a Rural Health Facility, Southeastern Nigeria

Opara H.C.[1], Omotola N.J.[1], Ogbonna D.F.[2], Ubochi N.E.[1], *Israel C.E.[1], Chinweuba A.U.[1] and Anarado A.N.[1]

[1.]*Department of Nursing Sciences, Faculty of Health Sciences and Technology, University of Nigeria Enugu Campus, Enugu State, Nigeria.*

[2.]*East Kent Hospitals University NHS Foundation Trust (Kent & Canterbury Hospital) East Kent Ethelbert Road, Canterbury, Kent, United Kingdom.*

ABSTRACT

Childhood is a period of rapid physical, emotional and cognitive development and nutrition plays a key role in infant health and well-being. Malnutrition occurs when a child does not receive adequate nutrients from diet due to multifaceted underlying factors that differ across geographical regions. Maintaining adequate nutrition have been established to be influenced by diverse factors and these associated factors have been understudied in the locality of study. This study investigated socio-economic and cultural determinants of nutrition in under-five children in Southeastern Nigerian. Descriptive cross-sectional study using a validated structured questionnaire was done among randomly selected 153 mothers of under-five children accessing healthcare in a rural health center in Amechi community of Enugu state, Nigeria. Data were analyzed with Statistical Package for Social Sciences version 24.0 using descriptive statistics of proportions, percentages, mean and standard deviations. Majority of the respondents (n=117, 76.5%) were married, 134(87.6%) attained secondary education, 50(32.7%) were self-employed with 53(34.6%) making fifteen thousand naira (₦15,000) monthly income. Financial constraint (3.39±1.03), lack of spousal support (2.60±0.87), children's food preferences (2.69±0.98), peer influence over choice of food (3.54±0.92) and conflict with mothers and mother in-laws over practice of exclusive breastfeeding adversely influenced nutrition (2.65±0.96). Financial empowerment and stronger family support can enhance nutritional practice in poor resource communities thereby curbing malnutrition in children.

Keywords: *Determinants, Family Support, Nutrition, Nigeria, Socioeconomic Factors, Under-five children*

**Author for correspondence: Email: chidinma.ogbonnaya@unn.edu.ng; Tel: +234 7038629094*

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INTRODUCTION

Childhood is a critical period and a key stage in the life of a child and involves rapid physical, emotional and cognitive growth and development (Mohamed *et al*,2016; Ghimire *et al*, 2020). Therefore, there is need to give attention to a child's needed dietary requirement in order to enhance and assist growth and development (Mohammed *et al*,2016; Fadare *et al*, 2019). Nutrition according to World Health Organization (WHO, 2018), is the intake of food which is an adequate and well balanced diet, considered in relation to the body's dietary needs. Malnutrition continues to be a public health menace especially among under-five children and can be in form of imbalances in energy intake, macronutrient and micronutrient deficiencies, and unhealthy dietary patterns including excess and imbalanced intakes (Mohammed *et al*, 2016; Aljohani, 2020). Despite a decrease in the prevalence of stunting globally, about 60 million African children under five are not growing properly and 10 million others are classified as overweight (Gebre, 2019; Sondai, 2017; Udoh, 2016). An estimated 2.5 million Nigerian children under the age of five suffer from Severe Acute Malnutrition (SAM) every year and nearly 420,000 children under-five die from SAM in Nigeria according to UNICEF (2017). As part of the effort to curb child malnutrition in Nigeria, Ready to Use Therapeutic Food (RUTF) was initiated by Nigera Government to ensure that food will be distributed across the country, while Community Management of Acute Malnutrition (CMAM) sites should be maintained (Adebowale, 2020).

Despite concerted efforts, malnutrition among children under five years is worsening in Nigeria, about 41% of children under-5 years of age are stunted, about 23% are underweight while 13% are wasting and 9% are obese (Udoh, 2016).

According to WHO (2019), lack of access to highly nutritious foods, especially in the present context of rising food prices, poor feeding practices, such as inadequate breastfeeding, offering the wrong foods, and not ensuring the child gets enough nutritious food, contribute to malnutrition. Though these factors can vary across geographical settings, other studies identified mothers' lack of knowledge about breastfeeding, poor breastfeeding and child feeding practices, lack of food diversification due to poverty, low levels of parental education and belonging to the low-income group, (Sondai, 2017; Temesgen. 2017 & Etim, 2017).

Studies have reported that more than 90 percent of the world's stunted children live in Africa and Asia and this often goes unrecognized and unattended (Sondai, 2017), therefore every factor that influences adequate nutrition in children which contributes to malnutrition should be urgently addressed. From informal interactions with mothers of the under-five children especially in the rural community of study, there seem to be multifaceted factors influencing adequate nutrition among the under five children. The study therefore determined the socio-economic and cultural factors influencing adequate nutrition among the under-five children in the study rural community.

MATERIALS AND METHODS

A descriptive cross-sectional design was adopted for this study. This study was conducted at Amechi community in Enugu South Local Government Area of Enugu State, Nigeria. The population of the study was made up of 273 mothers/caregivers with children under five years that accessed healthcare at the Primary Health Centre within the period of study. A sample size of 153 mothers/caregivers statistically determined using the Power analysis formula for finite population were enlisted into the study. Mothers of under five children were recruited for the study through simple random sampling technique. The inclusion criteria included being available during the study period, accessing healthcare at the Amechi Primary Health center, having a child/children that are five years and below and willingness to participate in the study.The instrument for data collection was a pre-tested structured researcher developed questionnaire that was constructed in line with the reviewed literature and objectives of the study. The questionnaire elicited demographic data, the socio-economic and cultural factors affecting nutrition in under five children. Responses eliciting associated factors were scaled and scored as: Strongly agree (SA=4), Agree (A=3), Disagree (D=2) Strongly disagree (SD=1). Research and Ethics Committee of University of Nigeria Teaching Hospital approved the conduct of the study (NHREC/05/01/20083-FWA00002458-IRB00002323) while the administrative permit was duly obtained from appropriate authorities in charge of the health center. Oral consent was equally obtained from the respondents after explanation of the purpose of the study and confidentiality and anonymity of information assured.Two research assistants comprising of registered nurses were trained on the use and administration of the instrument. Data collection was done during the clinic days per week. The questionnaires were administered before the time of consultations to avoid distractions and interruptions. Data were analyzed with the Statistical Package for the Social Sciences (SPSS) version 24 using descriptive statistics of proportions, percentages, means and standard deviations. The criterion mean was 2.5 for responses rated in Likert scale; therefore items with a mean score of ≥2.5 are seen as having significant influence on adequate nutrition in under-five children.

RESULTS

Table 1:
Demographic Data of Respondents of Mothers of Under-five Children at Amechi Health Centre, Enugu, Nigeria n =153

	Characteristics	F	%
Age (years)	18 – 29	66	43.1
	30 – 39	63	41.2
	≥ 40	24	15.7
Marital status	Single	24	15.7
	Married	117	76.5
	Divorced	4	2.6
	Separated	1	0.7
	Widowed	7	4.6
Religion	Christian	149	97.4
	Islam	0	0.0
	African traditional religion	4	2.6
Highest level of education	No formal education	0	0.0
	Primary	7	4.6
	Secondary	134	87.6
	Tertiary	12	7.8
Occupation	Housewife	33	21.6
	Civil servant	30	19.6
	Unemployed	4	2.6
	Self-employment	50	32.7
	Farmer	38	23.5
Total income per month	₦25,000	26	17.0
	₦20,000	35	22.9
	₦15,000	53	34.6
	₦10,000	39	25.5
Number of children	≥ 7 and above	3	2.0
	4-6	35	22.9
	2-4	75	49.0
	1-2	40	26.1

Table 1 shows that 66(43.1%) were within the age range of 18– 29 years, 117(76.5%) were married, 149(97.4%) were Christians and 134(87.6%) attained secondary education. Predominantly self-employed (n=50; 32.7%) with majority n=53(34.6%) making a total income/earning of fifteen thousand naira (₦15,000) per month; 26(17%) earned ₦25,000 and 39(25.5%) earned ₦10,000; 75(49.0%) had 2-4 children while 35(22.9%) had up to 6 children.

Table 2 shows that lack of adequate fund for feeding (3.39±1.03), lack of support from husband (2.60±0.87) and children preferring and insisting on buying confectioneries for them (2.69±0.98) were the most significant economic factors that influenced adequate child nutrition in the study community.

Table 2:
Economic factors influencing adequate child nutrition among the under-five n=153

Variable	SA (%)	A (%)	D (%)	SD (%)	Mean ±SD
Don't have enough money to feed my children very well	16(10.5)	74(48.4)	16(10.5)	47(30.7)	*3.39±1.03
Don't know what food to give them.	0(0.0)	0(0.0)	1(0.7)	152(99.3)	2.00±0.81
Only give children foods that are available	0(0.0)	30(19.6)	8(5.2)	115(75.2)	2.44±0.80
Husband is not supportive.	0(0.0)	39(25.5)	14(9.2)	100(85.4)	*2.60±0.87
Husband feels we spend too much money on feeding the children.	1(0.7)	28(18.3)	2(1.3)	122(79.7)	2.40±0.81
Children like eating confectionaries so I buy more of them than cook food for them.	2(1.3)	50(32.7)	67(3.9)	95(62.1)	*2.69±0.98
It is the responsibility of my husband, so I don't bother contributing to my children's feeding.	7(4.6)	11(7.2)	6(3.9)	129(84.3)	2.27±0.82
Grand mean					**2.54±0.87**

***Indicates Mean score** ≥2.5

Table 3:
Social factors influencing adequate nutrition among under-five n=153

Variable	SA (%)	A (%)	D (%)	SD (%)	Mean ±SD
Market where food item(s) are bought is far from my house.	0(0.0)	0(0.0)	0(0.0)	153(100.0)	2.00±0.00
My friends think I am feeding my children too much	0(0.0)	16(10.5)	4(2.6)	133(86.9)	2.24±0.63
I am always busy and I don't have a help to buy food items	0(0.0)	4(2.6)	21(1.3)	147(96.1)	2.07±0.34
My husband instructed the children be fed twice daily like other families due to limited fund as done by neighbors	3(2.0)	36(23.5)	2(1.3)	112(73.2)	*2.54±0.92
I don't always cook different dishes as taught during Antenatal because none is available	5(3.3)	45(29.4)	4(2.6)	99(64.7)	*2.71±1.00
My children compare most of the food I cook with others because of the low quality	2(1.3)	32(20.9)	6(3.9)	113(73.9)	*2.50±0.87
My children prefer what their friends eat at school and neighborhood	10(6.5)	98(64.1)	9(5.9)	36(23.5)	*3.54±0.92
My daily activities do not give me time to cook	0(0.0)	9(5.9)	2(1.3)	142(92.8)	2.13±0.48
I don't like cooking	0(0.0)	0(0.0)	0(0.0)	153(100.0)	2.00±0.00
Grand mean					**2.41±0.53**

***Indicates Mean score** ≥2.5

Table 4:
Cultural factors influencing adequate child nutrition among under-five n=153

Variable	SA (%)	A (%)	D (%)	SD (%)	Mean ±SD
I want to breast feed my child but my mother in–law believes my breast milk gets sour under the sun.	0(0.0)	7(4.6)	1(0.7)	145(94.8)	2.10±0.43
I don't feed my children with fruits and vegetable because my friends said it will cause them diarrhea.	0(0.0)	0(0.0)	2(1.3)	151(98.7)	2.01±0.11
practice of exclusive breast feeding without complementary feeding before 6 months brings conflict between me and my mother and mother in-law	5(3.3)	38(24.8)	8(5.2)	102(66.7)	*2.65±0.96
There are so many food taboos and I do not have an alternative food.	0(0.0)	0(0.0)	0(0.0)	153(100)	2.00±0.00
I was told that when I get angry my breast milk is contaminated	0(0.0)	12(7.8)	2(1.3)	139(90.8)	2.17±0.55
My mother and relatives said I can transfer abdominal pain through breast milk so I stopped breast feeding	0(0.0)	10(6.5)	2(1.3)	141(92.2)	2.14±0.51
I don't give my children foods like e.g. egg and fish because my husband said it will make them greedy	0(0.0)	2(1.3)	0(0.0)	151(98.7)	2.03±0.23
I want to breastfeed my little baby till he/she is one year old but my mother-in-law said it will make my baby weak.	0(0.0)	4(2.6)	1(0.7)	148(96.7)	2.06±0.33
I don't give my children sea foods like snails and periwinkles because it will make them drool saliva	0(0.0)	2(1.3)	2(1.3)	149(97.4)	2.04±0.25
Grand mean					**2.13±0.37**

***Indicates Mean score** ≥2.5

Social factors reported included children preferring what their friends eat at school (3.54±0.92), husband's instruction to feed the children twice daily due to limited funds as seen done by neighbours (2.54±0.92I), inability to cook different dishes as taught during antenatal due to unavailability of food items (2.71±1.00) and children comparing quality of family food with that of neighbours (2.50±0.87).

Table 4 showed that 43(28.1%) of mothers reported conflict with mothers and mother in-laws concerning practice of exclusive breast feeding without complementary feeding before 6 months (2.65±0.96).

DISCUSSION

Majority of the respondents were in the age group of between 18– 29 years. This may be connected to the fact that the age range falls within the socially accepted reproductive age and girl children in rural communities take up child rearing roles earlier than their counterparts in urban areas, the majority of who at this age are still focused on building their educational, career and professional lives. This agrees with the study by Ghimire *et al* (2020) which showed 58.3% of the women in their study gave birth between the ages of 21 and 29. Majority in this study attained secondary education which could be because Free Basic Education as enforced in Nigeria enhanced girl child education to at least secondary school level. Findings contradicted the study of Ghimire *et al* (2020) Egata *et al* (2014) and (Dake *et al* (2019) where 18.8%, 92.9% and 65.5% of mothers in their respective studies were illiterates thus generating a cycle of poverty. Earlier evidence confirm that maternal education plays an essential role in infant feeding practices because educated mothers have been reported to have better knowledge of child health and nutrition and more likely to pay attention to their children's health and make better food choices (Pravana *et al*, 2017).

Though majority in this study had 2-4 children yet 22.9% had up to 6 children and more. Ekpenyong (2018) noted that accepting and utilizing family planning services has been low in rural communities due to illiteracy, cultural and religious myths. This may account for high number of children while some households may be looking for a preferred sex of either male or female child. Mothers who do not use family planning will have large family size and a short birth interval as reported by Dake *et al* (2019) and large family size will limit the amount of food that gets to each child. Similar findings were reported by Etim *et al* (2017) and Sondai *et al* (2017), where increase in the number of children in a household decreases the food allocated to each child which consequently affects children's nutrition . There is a correlation between dietary adequacy, dietary intake and per capita expenditure therefore when families have higher number of children it is likely that every child may not get enough food, dietary nutrient and proper care thereby exposing children to malnourishment (Kalu *et al*, 2018).

Limited finances influenced ability to maintain adequate nutrition for under-five children in this study. This was not unconnected to the caregivers being predominantly self-employed, running petty businesses with majority making monthly income of approximately fifteen thousand naira (₦15,000) that is below $1 per day. The income may not be enough to purchase clothing, pay school fees and meet other needs of the children and yet feed adequately. A lower family income of eleven thousand naira(₦11,000) was recorded by Fadare *et al* (2019) in Oyo state of Nigeria. Kalu *et al*, (2018) noted that over 70% of Nigerians have been estimated to live below poverty line of $1 per day especially in Northern part of the country while Etim *et al* (2017) reported that majority of their respondents with malnourished children were low income earners per month ranging from ₦5,000 to ₦18,000 ((Nigerian currency). Nigerian economic situation has been harsh due to terrorism, insecurity and gross inflation that reduced purchasing power making it difficult for the mothers to purchase foodstuffs at a cheaper rate. Similar results were noted in Mohammed *et al* (2016), Kalu *et al* (2018) and Temesgen *et al* (2017) who respectively reported mother's monthly income that was below ten thousand, nature of maternal employment and lack of finance as negative influences on adequate nutrition among children in their studies. Furthermore, inadequate economic environment, incomplete national policy on nutrition and families with lower per capita income adversely affect adequate nutrition in children while increased income improves dietary diversity thereby enhances nutrient intake and nutritional status (Dake *et al*,2019). On the contrary, Mahmood *et al* (2016) reported that family income had no influence on children's nutrition in Pakistan which can be attributed to Pakistan government's concerted efforts and contribution.

Findings in this study disclosed that lack of support from husbands (2.60±0.87) influenced adequate child nutrition among the under-fives Male low educational level, lack of gainful employment and lack of capital to support small scale businesses especially in rural areas in Nigeria and having unsuportive husbands have reset some families' financing making many women to become breadwinners. Kalu and Etim (2018) noted that women have been recognized for serving as primary caregivers to their children and generators of household income in developing countries such as Nigeria. These rural women invariably may belong to low income class thus their efforts may not be enough to support the household needs especially when they do not also contribute to family decision making (Alaofe *et al*, 2019). Studies noted that there are higher odds of having children who were undernourished among women with lower decision-making power since women's decision-making power is associated with child nutritional status especially in developing countries (Alaofe *et al*, (2019) & Carlson *et al* (2015). There is need for women empowerment and fathers' involvement in children nutrition which will invariably affect family nutritional status positively as supported by Guerrero *et al* (2016).

This study revealed that children clamoring for what their friends eat at school, preferring and insisting on eating snacks and pastries and comparing quality of family food with that of neighbours (2.50±0.87) affected acceptance of family food. This can be related to the influence of community living that gives neighbours access to know what is happening in the dining tables and kitchens of their peers. This can also be closely related to the report of the mothers in this study who expressed their inability to cook different dishes as taught during antenatal due to unavailability of diversifed food items. It is pertinent to note that eating behaviour is strongly influenced by social context and children can be driven by peer influence from classmates. This finding is similar to Etim *et al* (2016) who reported that child feeding practice, negative peers' influence on children's healthy eating behavior (mainly on consumption of energy-dense and low-nutrition value foods) and lack of dietary diversity were strong determinants of children's nutritional status. Higher odds for underweight

are seen in children who did not receive the minimum dietary diversity than those who received the minimum dietary diversity in southern Nigeria (Udoh *et al*, 2016).

The husband's instruction to feed the children twice daily due to limited funds as seen done by their neighbours (2.54±0.92I) was reported in this study. Limiting the frequency and number of times a child is fed (meal frequency of less than three times per day) can likely expose the child to receiving limited nutrients needed for growth. This is in line with Girma *et al* (2019), Temesgen *et al* (2019), Etim *et al* (2017), and Sondai*et al* (2017) who identified parental influence, lack of access to food and number of meals taken by the child per 24 hours as factors that affected nutritional status of children in their study. Parental empowerment through nutritional education will enlighten them on the appropriate frequency, quality and quantity of food for children.

This study revealed that conflicts abound between mothers and mother in-laws concerning practice of exclusive breast feeding without complementary feeding before 6 months (2.65±0.96). The World Health Organization recommends an early initiation of breastfeeding within one hour of birth and exclusive breastfeeding for 6 months to combat killer diseases such as diarrheal diseases, pneumonia, and obesity (Sondai *et al*, 2017), yet cultural beliefs surrounding the practice of exclusive breast feeding especially in rural communities have remained serious hindrances in achieving this recommendation. The finding agrees with the work of Egata *et al* (2014) which revealed that socio-cultural factors such as conflicts with mothers or mother in-laws are significant predictors of adequate nutrition among breast feeding mothers. Also Etim *et al* (2017) reported that 63.0% and 21.6% of their respondents introduced complementary feeding before 6 months. The finding is contrary to that of Temesgen *et al* (2017) where 99.1% of mothers fed their children for 6 months in Ethiopia maybe because such family conflicts were not influencial on breastfeeding practice in Ethiopia. The benefits of exclusive breastfeeding cannot be over emphasized and need for more awareness creation especially in rural communities is imperative.

Some other harmful cultural practices like denying children egg and fish to prevent them from stealing (2.03±0.23) and avoiding sea foods like snails and periwinkles because it will make infants drool saliva (2.04±0.25) were not significant in this study though reported by some mothers. This is an indication that rural communities are gradually breaking from the holds of negative customs and beliefs, hence promising a future stable and satisfactory nutritional status for under-five children. The finding of this study disagrees with the work of Oyira *et al* (2019) and McNamara (2019) where mothers denied their children eating egg, meat and fish as part of their taboo practices believing it will make the children to steal later in life.

In conclusion, achieving adequate nutrition for infants are hampered by multifaceted factors. Financial constraint, low family income, having flare for food fads and poor family support influenced adequate nutrition in this study. To curb malnutrition in a Low-Middle income nation that is facing economic and security challenges, socio-economic and cultural factors that impact negatively on child nutrition should be addressed. Financial empowerment for women and building stronger family support system that enhances positive nutritional practice should be enforced.

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