

**Caregivers' Feeding Practice of Infants and Young Children and Acute Malnutrition among Children in Rivers East Senatorial District of Rivers State, Nigeria**

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Feeding practice,  
infant and young  
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**Abstract**

This study investigated the caregivers' feeding practice of infant and young children and acute malnutrition among children in Rivers East Senatorial District of Rivers State, Nigeria. A cross-sectional research design with a population of 97,960 children between the ages of 0-5years and their mothers was deployed. A sample size of 800 respondents was selected using a multistage sampling procedure. The instruments for data collection were semi structured questionnaire and anthropometric measurements of weight, height, mid-upper arm circumference using MUAC tape. Data collected was analyzed using percentage and regression analysis at 0.05. The findings of the study showed that, more (42.3%) respondents fed their infants and young children on demand, 156(39.0%) fed them 1- 2 times a day. More than half (62.5%) indicated that a child should be given an egg meal 2-3 times a week. Furthermore, almost all (99.8%) the respondents indicated that they introduced food for their infants at 7-10 months. Type of food introduced was pap with sugar and milk (46.8%), in a feeding bottle (70.3%). The nutritional status of the infants and young children was found to have a positive significant relationship with the feeding practice ( $r = 0.993$ ,  $R^2 = 0.986$ ,  $p < 0.05$ ) of mothers. The study concluded that, caregivers in Rivers East senatorial district had a fair feeding practice which was highly related to acute malnutrition among infants and young children. It was recommended that, nurses should focus on healthy nutrition of infants and young children when conveying health talk to women during their antenatal and postnatal visits.

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**Introduction**

Feeding practices play a pivotal role in determining the optimal physical growth, development and health of infant and young children. Acute malnutrition develops when under nutrition occurs in an essential period of childhood growth (Jean, 2014). Malnutrition in children under five years of age is a major public health problem in sub-Saharan African countries as it contributes approximately 60% of death of these children (Mahaman, 2017). Optimal infant and young child feeding, optimal breastfeeding for the first six months of life and feasible culturally acceptable complementary feeding

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from 6 months onwards ensure infant and young children the best possible start to life. According to Olofin, McDonald, Ezzati, Flaxman, Black, Fawzi, Caulfield, & Danaei, (2013), acute malnutrition is one of the three main types of under nutrition affecting potentially all categories of the population, but especially vulnerable groups such as children under the age of five. In 2006, 156 million children under 5 years of age suffered from stunting, with dire consequences. However a child with severe acute malnutrition is 11.6 times more likely to die while a child with moderate acute malnutrition is 3 times more likely to die than a well-nourished child.

Acute malnutrition if not treated timely becomes complicated and has a case fatality of 20-40 (CORTSAM, 2018). Childhood nutrition has been a global priority for many years now however, most countries regularly track only limited nutrition indicators while even fewer pay attention to the range of manifestation of malnutrition. As a result, nutrition policies and strategies are either only instrument inadequately tailored to address multiple forms of malnutrition or too broadly devised to offer concrete guidance to address nutrition problems (Patali, 2018). These problems including other factors if not well addressed could be detrimental to the health of infants and young children. Though, Ayana, Hailemariam & Melke (2015) specified that, one of the main factors responsible for malnutrition among children is the inadequate feeding practice.

Nigeria has the second highest burden of stunted children in the world with a national prevalence rate of 32 percent of children under 5. An estimated 2 million children in Nigeria suffer from severe acute malnutrition but only two out of every 10 children are reached with treatment (United Nations International Children's Education Fund, 2016). The National Nutrition and Health Survey (2018), reports that Nigeria faces the challenge of insecurity/conflict in some parts, and food deficit and it is the largest importer of rice, one of the staple foods. Each year about 1 million children die before their 5<sup>th</sup> birthday and acute malnutrition contributes to nearly half of these deaths. The report also shows an increase in the Global Acute Malnutrition (GAM) rates recorded in Rivers State.

Over the years, Rivers State has witnessed a trend of insecurity and militia activities leading to crises and displacement of people (United State Agency for International Development, 2016), with the consequent malnutrition. Major types of malnutrition problems are under nutrition and nutritional disorders which are resulting from inadequate food intake both in quality and quantity particularly of calories, protein, vitamins, mineral etc. The people of Rivers east senatorial district have average economic condition due to low productivity for food planted, harvested and consumed as a result of environmental degradation, oil spillage and cattle rearing activities in the farms. Also high cost of living, lack of jobs, incessant attack on farmers in their farm and frequent stealing of farm produce by thieves have led to acute food shortage in this area. To concretize the foregoing, the study of Okari, Nte, & Frank-Briggs (2019) revealed that, these activities impact negatively on the nutritional activities and nutritional status of the vulnerable, especially the infants and young children who are highly dependent for their survival. It is against this background that the study investigated the caregivers' feeding practice of infant and young children and acute malnutrition among children in Rivers East Senatorial District of Rivers State, Nigeria.

## Research Questions

The following Research questions guided this study:

1. What is the caregivers' feeding practice of infants and young children in Rivers East senatorial district of Rivers State, Nigeria?
2. What is the relationship between pattern of breastfeeding and acute malnutrition in Rivers East Senatorial District?
3. What is the relationship between caregivers' feeding practice of infants and young children and nutritional status of children in Rivers East senatorial district?

## Hypotheses

The null hypotheses below were stated to guide the study:

**H<sub>01</sub>:** There is no significant relationship between caregivers' feeding practice of infants and young children and nutritional status of children in Rivers East senatorial district.

**H<sub>02</sub>:** There is no significant relationship between pattern of breastfeeding and young children and nutritional status of children in Rivers East senatorial district.

## Methodology

The cross-sectional research design was adopted for the study. The cross-sectional design involves looking at data from a population at one specific point in time which was done in the study. The population for the study comprised of children between the ages of 0-5years and their mothers/caregivers. The number of children between the ages of 0-5years and their mothers were 97,960 and constituted the population for the study. This population is derived from quarterly birth report from January 2015 – June 2020 in order to estimate infants and young children aged 0-5yrs. The children born between 2015 - 2020 in primary health care facilities in Rivers East Senatorial District and their mothers/caregivers constituted the population for the study. The sample size for the study was 800 persons (paired), that is, 400 mothers/caregivers and 400 infants and young children.

The multistage sampling procedure was used to select respondents for the study. At the first stage, the stratified sampling technique was used to group the eight local government areas that made up Rivers East senatorial zone into four homogenous groups denoted as groups A - Etche and Omuma, B - Ikwerre and Emouha, C - Obio-Akpor and Phalga and D - Ogu-Bolo and Okrika. The grouping was done based on cultural similarities, ethnicity and proximity. At the second stage, the simple random sampling was used to select one LGA from each homogenous group and also the health facilities from the selected LGA. At the third stage, the proportionate random sampling technique was used to get the sample size from each local government selected, 172 respondents were selected from group A, 168 from group B, 340 respondents from group C and 120 respondents from group D, and respondents were enrolled in the study using simple random sampling.

The instruments for data collection were semi structured questionnaire with a reliability coefficient of 0.82 and anthropometric measurement of weight, height, mid-upper arm circumference using MUAC tape were also taken. The semi structured questionnaire was adapted from UNICEF

Nutri Survey (2013), and Olatana et al (2017), and was divided into two (2) major sections. Section A of the instrument comprised of socio-demographic data of the respondents while section B was made up of closed and open ended questions for determinants of acute malnutrition including feeding practices. For data analysis, the socio-demographic characteristics and items on caregivers' feeding practices were entered directly into the IBM Statistical Product for Service Solution (SPSS V-23.0) while the anthropometric measurements were entered into the WHO anthro software and later transferred to the SPSS for the analysis. Statistical tools such as percentage and linear regression model at 0.05 level of significance were used to analyze the data.

## Results

The results of the study are presented below in tables:

**Research question 1:** What is the caregivers' feeding practice of infants and young children in Rivers East senatorial district of Rivers State, Nigeria?

**Table 1: Caregivers' feeding practice of infants and young children**

Caregivers' feeding practices	Frequency (F)	Percentage (%)
<b>How often respondents feed their child</b>		
1-2 Times A Day	156	39.0
3-4 Times A Day	75	18.8
On Demand	169	42.3
Total	400	100.0
<b>How often a child should be given an egg meal</b>		
2-3 Times A Week	250	62.5
3-5 Times A Week	150	37.5
Total	400	100.0
<b>Age at which caregiver introduced food</b>		
3-6 Months	1	.3
7-10 Months	399	99.8
Total	400	100.0
<b>Type of food introduced first</b>		
Cow's Milk	56	14.0
Pap Without Sugar and Milk	157	39.3
Pap With Sugar and Milk	187	46.8
Total	400	100.0
<b>What child was fed from</b>		
Feeding Bottle	281	70.3
Plate And Spoon	1	.3
Cup And Spoon	84	21.0
Others	34	8.5
Total	400	100.0

Table 1 showed caregivers' feeding practice of infants and young children. The result showed that, more (42.3%) of the respondents fed their infants and young children on demand, 156(39.0%) feed them 1- 2 times a day. More than half (62.5%) indicated that a child should be given an egg meal 2-3 times a week. Furthermore, almost all (99.8%) the respondents indicated that they

introduced food for their infants at 7-10 months, type of food introduced was pap with sugar and milk (46.8%), in a feeding bottle (70.3%). Thus, the respondents had a fair feeding practice for their infants and young children.

**Research question 2:** What is the relationship between pattern of breastfeeding and acute malnutrition in Rivers East Senatorial District?

**Table 2: Relationship between pattern of breastfeeding and acute malnutrition**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	Decision
1	.885 <sup>a</sup>	.785	.782	6.29295	0.819	<b>High relationship</b>

Table 2 showed the relationship between pattern of breastfeeding and acute malnutrition in Rivers East Senatorial District. The result of the study showed that there was a high positive relationship between pattern of breastfeeding and acute malnutrition ( $r = 0.885$ ). The result further showed that pattern of breastfeeding contributed 78.5% of the variance in acute malnutrition ( $R^2 = 0.782$ ).

**Research question 3:** What is the relationship between caregivers' feeding practice of infants and young children and nutritional status of children in Rivers East senatorial district?

**Table 3: Regression analysis on relationship between feeding practice of mothers/caregivers on nutrition of infants and acute malnutrition**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	Decision
1	.993 <sup>a</sup>	.986	.986	1.61166	1.485	<b>Very High relationship</b>

Table 3 showed the relationship between feeding practice of mothers/caregivers on nutrition of infants and acute malnutrition in Rivers East Senatorial District. The result of the study showed that there was a very high positive relationship between feeding practice of mothers/caregivers on nutrition of infants and acute malnutrition ( $r = 0.993$ ). The result further showed that feeding practice of mothers/caregivers on nutrition of infants contributed 98.6% of the variance in acute malnutrition ( $R^2 = 0.986$ ).

### Test of Hypotheses

**H<sub>0</sub>:** There is no significant relationship between caregivers' feeding practice of infants and young children and nutritional status of children in Rivers East senatorial district.

**Table 4: Regression analysis on relationship between feeding practice of infants and young children and young children and acute malnutrition**

Model		Sum of Squares	df	Mean Square	F	Sig.	Decision
1	Regression	36940.971	1	36940.971	932.82	.000 <sup>c</sup>	Rejected
	Residual	10256.709	259	39.601			
	Total	47197.680 <sup>d</sup>	260				

**P < 0.05**

Table 4 showed the regression analysis on the relationship between feeding practice of infants and young children and acute malnutrition. The findings of the study showed that there was a significant relationship between feeding practice of infants and young children and acute malnutrition [ $f(1,259) = 932.825$ ,  $p < 0.05$ ]. Thus, null hypothesis which stated that there is no significant relationship between feeding practice of infants and young children and acute malnutrition was rejected.

**H<sub>02</sub>:** There is no significant relationship between pattern of breastfeeding and young children and nutritional status of children in Rivers East senatorial district.

**Table 5: Regression analysis on relationship between pattern of breast feeding and young children and young children and acute malnutrition**

Model		Sum of Squares	df	Mean Square	F	Sig.	Decision
1	Regression	46524.938	1	46524.938	1791.7	.000 <sup>c</sup>	Rejected
	Residual	672.742	259	2.597			
	Total	47197.680 <sup>d</sup>	260				

**P < 0.05**

Table 5 showed the regression analysis on the relationship between pattern of breast feeding and acute malnutrition. The findings of the study showed that there was a significant relationship between pattern of breast feeding and acute malnutrition [ $f(1,259) = 17911.7$ ,  $p < 0.05$ ]. Thus, null hypothesis which stated that there is no significant relationship between pattern of breast feeding and acute malnutrition was rejected.

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**Discussion of findings**

The findings of the study are discussed below

The finding of this study showed that the respondents had fair feeding practices for their infants and young children, though it was not adequate to maintain a good nutritional status. For instance, majority gave egg to their child 2-3 times a week. Such inadequate nutrition can negatively affect the nutritional status of the children. This is in line with the assertion of Jesmin et al. (2011) where it was reported that poor nutrition during childhood is one of the most important conditions that impede the physical and the mental development of children which ultimately propagates the vicious cycle of intergenerational malnutrition. Consequently, the effects of under-five malnutrition are permanent and cross into the adulthood stage of the child. The finding of this study is also in line with that of Burchi, Fanzo & Frison (2011) which showed that extreme undernourishment, known as starvation, may have symptoms that include: a short height, thin body, very poor energy levels, and swollen legs and abdomen. People also often get infections and are frequently cold.

The symptoms of micronutrient deficiencies depend on the micronutrient that is lacking. The finding of this study is also in agreement with that of Schofield (2009) which showed that chronic malnutrition increases stunting rates and was a significant problem in the slums representing a loss of both physical and mental potential for affected children and that malnourished children were two times more likely to be stunted indicating a high level of disparity in nutritional outcomes. The similarity between the present study and the previous ones might be due to the homogeneity of the study population and the concepts studied.

The result of the study showed that there was a high positive relationship between pattern of breastfeeding and acute malnutrition ( $r = 0.885$ ). The result further showed that pattern of breastfeeding contributed 78.5% of the variance in acute malnutrition ( $R^2 = 0.782$ ). The finding of this study is also in keeping with that of Olodu et al (2019) whose study on nutritional status of under-five children born to teenage mothers in urban setting, south-western Nigeria, revealed that the risk of Wasting increase with exclusive breastfeeding duration less than 6 months. The result of the study showed that there was a very high positive relationship between feeding practice of mothers/caregivers on nutrition of infants and acute malnutrition ( $r = 0.993$ ). The result further showed that feeding practice of mothers/caregivers on nutrition of infants contributed 98.6% of the variance in acute malnutrition ( $R^2 = 0.986$ ). The finding of this study is also in keeping with that of Olodu et al (2019) whose study on nutritional status of under-five children born to teenage mothers in urban setting, south-western Nigeria revealed that there was a relationship between the feeding practice of mothers and the nutritional status of children.

**Conclusion**

Based on the finding of this study, it was concluded that, caregivers in Rivers East senatorial district had a fair feeding practice which was highly related to acute malnutrition among infants and young children.

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**Recommendations**

Based on the findings of the study, the following recommendations were put forward:

1. Nurses should focus on healthy nutrition when conveying health talk to women during their antenatal and postnatal visits with emphasis on the nutrition of infants and young children.
2. Community health professionals should increase their effort in conveying messages that promote good nutrition among the populace by making more nutritional information available to them.

**References**

- Asoba, G.N., Sumbele, I., Anchang, J., Metuge, S., & Tech, J. (2019). Influence of infant feeding practices on the occurrence of malnutrition, malaria and anaemia in children  $\leq 5$  years in mount Cameroon area. A cross sectional study .*PLOS ONE*14 (7).<https://doi.org/10.1371/journal.pone.0219386>
- Ayana, A.B., Hailemariam, T.W & Melke, A.S. (2015). Determinants of acute malnutrition among children aged 6-59 months in public hospitals, Oromia region west Ethiopia, a case control study. *BMC Nutrition*, 1(34).
- Burchi, F., Fanzo, J. & Frison, E. (2011). "The role of food and nutrition system approaches in tackling hidden hunger". *International Journal of Environmental Research and Public Health*, 8 (2), 358–73. doi:10.3390/ijerph8020358. PMC 3084466. PMID 21556191.
- CORTASAM, (2018). A research agenda for acute malnutrition, [www.nowastedlives.org](http://www.nowastedlives.org)
- Gadappa, S.M., & Behra, M.K. (2016). Nutritional status and feeding practice in relation to IYCN policy amount children under 2 years of age in tertiary care centre. *International Journal of Contemporary Medical Research* 3(6). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6314612/>
- Idris, S.H., Popoola-Zakariyya, B., Smbo M.N., Sufyan M.B., & Abubakar A. (2013). Nutritional status and pattern of Infant feeding practices among children under fine in rural community of north-western Nigeria.*International Q. Journal of Community Health Education* 33(1) 83 -94.DOI: 10.2190/1Q.33.1
- Jean, C. (2014). *Management of severe acute malnutrition*. University of Pretoria.
- Jesmin, A., Yamamoto, S., Malik, A., & Haque, M. (2011). Prevalence and determinants of chronic malnutrition among preschool children: A cross sectional study in Dhaka city, Bangladesh. *Journal of Health, Population and Health*, 29(5), 494-499.
- Mahaman, E.H. (2017). Managing acute malnutrition in infants aged less than six months: A qualitative assessment in Niger public hospital. *African Journal of Food, Agriculture, Nutrition and Development*, 2017.17(4)./
- National Nutrition and Health Survey, (2018). Report on Nutrition and Health situation in Nigeria.

- Okari, T.G., Nte, A.R., & Frank-Brigg, A.I. (2019). Prevalence of malnutrition among under five in Okrika town, Nigeria. *Journal of Dental and Medical Sciences*,18(1). <http://www.iosrjournals.org/>
- Olatana, F.A., Aderibigbe, S.A., & Adeniyi, O.F. (2017). Complementary feeding knowledge, practice, and dietary diversity among mothers of under-five children in an urban community in Lagos State Nigeria. *International journal of maternal and child and AIDS*, 6(1)46-59.doi:10.21106/ijma.203
- Olofin, I., McDonald, C.M., Ezzati, M., Flaxman, S., Black, R.E., Fawzi, W.W., Caulfield, L.E., & Danaei, G. (2013). Nutrition impact model study (anthropometry cohort pooling). Association of suboptimal growth with all-cause and cause-specific mortality in children under five years: a pooled analysis of ten prospective studies. *Plos one journal* 8(5)36-64. doi:10.1371/journal.pone.0064636.PMID:23734210;PMCID:PMC3667136.
- Owoaje, E., Onifade, O., & Desmennu, A. (2014). Family and socioeconomic risk factors for undernutrition among children aged 6 to 23 months in Ibadan, Nigeria. *Pan African Medical Journal*. 5(17)161-165. doi: 10.11604/pamj.2014.17.161.2389. PMID: 25120874; PMCID: PMC4119462
- Olodu, M.D., Adeyemi, A.G., Olowokere, S.A., Olapeju, A.E. (2019). Nutritional status of under five children born to teenage mothers in an urban setting, South-Western Nigeria. *BMC Res Notes* 12(116). <http://doi.org/10.1186/s/3/04.019-4147-x>.
- Patali, C.S. (2018). A descriptive study to assess the knowledge of mother regarding the nutrition for under five children in selected area of Bagalkot with a view to develop a self instructional modular. *Journal of Nursing and Health Care* 7 (3). <https://doi.10.19080.JOJNHC.2018.07.555713>
- Schofield, L., (2009). Report of baseline nutrition assessment in the slums of Nairobi East and North Districts, Nairobi Kenya, Nairobi: Concern World wide.
- Tobi, S., Alex-Hart, B.A., & George, O.I. (2020). Effects of infant and young child feeding practices on the nutritional status of children 0 – 24months of ages in Port Harcourt, Nigeria. *Asian Journal of Medicine and Health*, 17 (4), 1-21. <https://www.journalajmah.com/index.php/AJMAH/article/view/30170>
- United Nations International Children Education Fund, (2013). Improving child nutrition the achievable imperative for global progress. New York: <http://www.unicef.org/files>
- United Nations International Children Education Fund (2016). Nutrition in action: Global nutrition context, Retrieved from <https://www.unicef.org>
- United State Agency for International Development / SPRING (2016) Factors affecting the family diet. Demographic health survey. [www.spring-nutrition.org](http://www.spring-nutrition.org)