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## **Prevalence of chronic malnutrition among of Pre-School Aged Children in Ihiala LGA Anambra State, Nigeria.**

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### ABSTRACT

Nutritional status of children is one of the major factors that are used to determine the level of development and future potential of the community. The anthropometric indicator used is height-for-Age. WHO ANTHRO software was used for analyzing the sample. The total number of study group was 428 children. 204 were male children while 224 were female children. In the study it is observed that the total of 16.6% of the 428 under five years old children included in Ihiala LGA was found to be stunted. In this study, the prevalence of stunting, the children show the high rate of stunting, these was especially among the children in the age group of 12-23months. Stunting were more prevalence in male children. Prevalence of severe chronic malnutrition was not observed among the female and male children in rural area. The prevalence of chronic malnutrition was more in the urban (12%) are compared to the rural area (5.2%). Male in the urban area (14.3%) were more stunted compared to the female children (9.9%).  
Keywords; Prevalence, chronic malnutrition, Pre-School, Aged and Children.

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### INTRODUCTION

The nutritional condition of youngsters is a good predictor of the community's future potential and degree of development. Since the first five years of life are so important for a child's growth and development, the nutritional health of newborns and young children is of special importance [1]. Children's long-term physical growth and development are impacted by nutritional deficiencies, which may also result in serious sickness and impairment as adults. Additionally, since hunger lowers the physical and intellectual capacity of the whole population, it puts future economic development in danger. In many regions of the globe, undernutrition among children is still widespread. WHO (2011) estimated that 178 million children under the age of five are underweight and 115 million are abnormally short for their age group globally. The same study revealed that Asia and Africa had the highest rates of childhood stunting globally. According to numerous researchers' theories, inadequate food intake, severe and recurrent illnesses are the main causes of malnutrition [2]. The UNICEF Conceptual framework of child survival [3] illustrates how these variables interact with the child's nutritional status, general health, and, indirectly, the communities in which the kid is raised.

### STUNTING

Stunting, a sign of chronic malnutrition, it is indicated by low height-for-age. Stunting is the term used to describe shortness that results from a deficiency or linear growth that falls short of genetic potential. Low height for age is defined as being less than two standard deviations (SD) from the median of the NCHS/WHO International Growth

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**Publications**

Reference [4]. Stunting may happen at any time throughout development; however it is mostly influenced by the "first 1,000 days" of life. This covers the time shortly before to conception to the child's second birthday, making the nutritional health of mothers very crucial. A youngster goes through its fastest period of growth and development during this time. When a youngster has insufficient nutrients to grow and develop, stunting happens. This may be brought on by a bad diet alone, but illness and poor health often make things worse.

According to [5], the United Nations Children's Fund (UNICEF), [3] reports that 41% of children in Nigeria are stunted. This shows that stunting is still a significant public health issue in the nation and needs intervention. Within Nigeria, there are variances in the patterns of childhood stunting. To estimate childhood stunting across the 36 states of Nigeria, including the Federal Capital Territory, [6] analysed data from birth histories, including the 2008 Nigerian Demographic and Health Survey. According to their data, the average rate of childhood stunting in Nigeria is 39% and varies from 11.5% in Anambra State to 60% in Kebi State. According to the findings of other studies [7]; [8], the WHO (2006), [9] standard used in conjunction with the Z-score as an anthropometric descriptor appears to be a stronger predictor of chronic malnourishment in children under the age of five. Therefore, its use in studies to assess children's nutritional status was advised.

**MATERIALS AND METHODS****Area under Study**

Ihiala local government area is found in Anambra state which is located in the Southeast geopolitical zone of Nigeria. The LGA is bordered by parts of Imo state and by the Ogbaru, Ekwusigo, and Nnewi south LGAs of Anambra state. Towns and villages that make up Ihiala LGA include Okija, Isseke, Orsumoghu, Mbosi, Azia, Amorka, Ubuluisiuzor, Lilu, and Uli. The estimated population of Ihiala L.G.A is 183,077 inhabitants with the vast majority of the area's inhabitants being members of the Igbo ethnic group. Ihiala LGA falls under the Tropical climate and witnesses two distinct seasons which are the dry and the rainy seasons. The average temperature of the area is 26 degrees centigrade while the humidity level of the LGA is at an average of 71 percent. The total precipitation of Ihiala LGA is at an average of 2250 mm of rainfall per annum.

**Study design:** The study was carried out from 12 September – 14 October 2022, from 15 primary schools were selected in Ihiala L.G.A. There are total of 95 registered public schools in Ihiala L.G.A. Most children in the public are from lower socio-economic background while some are from middle social class. The working-class population is made up of different group of individuals in various occupation but most of them are either farmers or traders. Verbal consent from all teachers of the sampled children was sought before collecting checking the height and weight of the children. All the information collected during the survey were treated as confidential and used for the purpose of the survey only. Further information on parental background and that of the children were gotten from the teachers.

**Data collection:** The table comprised mainly of details on children profiles such as age, sex, weight, height, and head circumference, MAUC of the child and occupation of parent.

**Equipment:** Anthropometric measurement equipment that was used are measuring rods, weighing balance and measuring tape for height, weight, head circumference and mid upper arm circumference respectively.

**Digital weighing scale:** was used to take the weight of the children. The subjects were made to stand on the center of the scale without touching anything. No foot wear was worn; the measurement was read to the nearest 0.1kg

**Measuring Rod:** The length of each child aged 6- 24 months was measured lying flat and centrally on measuring boards placed on a hard-flat surface on the ground. The length was read to the nearest 0.1 cm (head and feet against the base of the board and foot piece respectively). A vertical measurement rod will be used to measure the height of the children. The children were made to stand on a flat surface without foot wear. The feet were made to be parallel with heels, shoulder and back of head touching the rod. The scale measurement was read to an accuracy of 0.1cm

**Measuring Tape:** The measuring tape was used to measure the head circumference and the MUAC of the children, the measurement was read to an accuracy of 0.1cm

**Variables:** Nutritional status was measured by (H/A) (i.e HAZ). This means a child index as compared to the median value of the anthropometric index for a child of the same age and sex in the WHO (2006) reference population divided by the standard deviation in the reference population. Malnutrition and severe malnutrition were defined as anthropometric indices below minus two (-2) and minus three (-3) standard deviation (SD) from the median values of the standard WHO reference population [10]; [11].

RESULTS

Table 1: Prevalence for low H/A (stunting) by gender and age in a sample of 427 children from Ihiala LGA

Age group (months)	SEX	Number	%<-3SD	%<-2SD	Mean	SD
(0-5)	Male	0	-	-	-	-
	Female	0	-	-	-	-
	Combined	0	-	-	-	-
(6-11)	Male	1	100	100	-4.1	0
	Female	0	-	-	-	-
	Combined	1	100	100	-4.1	0
(12-23)	Male	8	25	37.5	-1	2.1
	Female	14	7.1	28.6	-0.88	1.54
	Combined	22	13.6	31.8	-0.92	1.74
(24-35)	Male	33	9.1	12.1	-0.76	0.84
	Female	45	0	0	0.06	1.51
	Combined	78	3.8	15.4	-0.61	
(36-47)	Male	51	0	19.6	-1.19	1.64
	Female	50	0	2	-0.55	0.76
	Combined	101	1	15.8	-1.03	1.01
(48-60)	Male	111	2.7	14.4	-0.94	1.1
	Female	114	1.8	16.7	-0.89	1.09
	Combined	225	2.2	15.6	-0.91	1.09
(0-60)	Male	204	4.4	16.7	-0.98	1.22
	Female	223	1.8	16.6	-0.98	1.2
	Combined	427	3	16.6	-0.89	1.21

No case of stunting was observed in the children below 5month including 24-35 months in the population. The only child in the 6-11 month population was 100% rate of severe stunting. There was significant difference in the rate of stunting observed within the age range of 12-23, 24-35, 33-47, and 48-60 months. The rate of stunting seem to be higher in the male of most age group as well as severe stunting. The total population prevalence was 16.6% including 3% rate of severe stunting

## Publications

Table 2: Prevalence for low H/A by gender and age in a sample of 229 children from rural area of Ihiala L.G.A.

Age group (month)	SEX	Number	%<-3SD	%<-2SD	Mean	SD
(0-5)	Male	0	-	-	-	-
	Female	0	-	-	-	-
	Combined	0	-	-	-	-
(6-11)	Male	0	-	-	-	-
	Female	0	-	-	-	-
	Combined	0	-	-	-	-
(12-23)	Male	5	0	20	-0.9	1.41
	Female	8	0	12.5	-0.76	1.05
	Combined	13	0	15.4	-0.81	1.41
(24-35)	Male	17	0	0	-0.42	1
	Female	24	0	0	-0.1	0.92
	Combined	41	0	0	-0.23	0.96
(36-47)	Male	27	0	7.4	-0.65	0.78
	Female	24	0	0	-0.62	0.81
	Combined	51	0	3.9	-0.64	0.76
(48-60)	Male	61	0	5.9	-0.67	0.9
	Female	63	0	9.5	-0.9	0.82
	Combined	124	0	6.5	-0.77	0.75
(0-60)	Male	110	0	4.5	-0.61	0.78
	Female	119	0	5.9	-0.67	0.9
	Combined	229	0	5.2	-0.64	0.84

No case of stunting was observed among the children below 1-year old population. There was no case of severe stunting was observed among the age group of the population. Prevalence of stunting was more in the male children (20%) compared to the female children in the age range of 12-23months population. Total rural area population prevalence was 5.2%.

**Table 3: Prevalence for low H/A (stunting) by gender and age in a sample of 197 children from Urban area of Ihiala L.G.A.**

Age group (month)	Sex	Number	%<-3SD	%<-2SD	Mean	SD
(0-5)	Male	0	-	-	-	-
	Female	0	-	-	-	-
	Combined	0	-	-	-	-
(6-11)	Male	0	-	-	-	-
	Female	0	-	-	-	-
	Combined	0	-	-	-	-
(12-23)	Male	4	33.3	66.7	-1.57	2.26
	Female	5	0	40	-0.79	2.93
	Combined	9	12.5	50	-1.08	2.56
(24-35)	Male	15	7.1	7.1	-0.16	1.63
	Female	21	0	5.3	-0.24	1.55
	Combined	36	3	6.1	-0.2	1.56
(36-47)	Male	24	0	16.7	-0.87	1.37
	Female	25	0	12	-0.9	0.89
	Combined	49	3.9	9.8	-0.65	1.3
(48-60)	Male	51	6	12	-0.76	1.5
	Female	52	1.9	7.7	-0.55	1.12
	Combined	103	3.9	9.8	-0.65	1.32
(0-60)	Male	94	5.5	14.3	-0.7	1.51
	Female	103	1	9.9	-0.59	1.29
	Combined	197	3.1	12	-0.64	1.39

No case of stunting was observed among the children below 1 year old in the urban are population. Prevalence of stunting and severe stunting was more among the male children in the age group of 12-23 months (66% stunting and 33.3 severe stunting). The rate of stunting seems to be higher among the male children in most of the age group. The total urban population prevalence was 12% including 3.1% rate of severe stunting.

**Table 4: Comparison of the Prevalence of Chronic Malnutrition of Urban and Rural Area in Ihiala L.G.A.**

Cluster	Gender	Number	% Z<-3SD	% Z<-2SD
Urban	Male	110	0	6.5
	Female	119	0	4.5
	Total	229	0	5.2
Rural	Male	194	5.5	14.3
	Female	103	1	9.9
	Total	107	3.1	12

In this study, Prevalence of severe chronic malnutrition was not observed among the female and male children in rural area. The prevalence of chronic malnutrition was more in the urban (12%) are compared to the rural area (5.2%). Male in the urban area (14.3%) were more stunted compared to the female children (9.9%).

## DISCUSSION

**The prevalence of height-for-age (stunting):** In the study it is observed that the total of 16.6% of the 428 under five years old children included in Ihiala LGA was found to be stunted. In the study, it is observed that the total of 5.2% of the 229 under five years old children included in the study area of rural part of Ihiala LGA were found to be stunted. In the study it is observed that the total of 12% of the 229 under five years old children included in the study area of urban part of Ihiala LGA were found to be stunted, 5.6% were found to be wasted and 4.2% were underweight. The children in the urban area of Ihiala LGA were more stunted than those in the rural area of Ihiala LGA (12% against 5.2%). The children in the urban part of the LGA were severely stunted (3.1%). No case of severe stunting was recorded in rural part of the LGA. The total population had 3% rate of severe stunting. The stunting in the urban area was as a result of lack of proper care from the parent and poor nutrient. The prevalence of stunting was highest among children of 12-35 months, it was more among the male children compare to the female children. This could be attributed to poor weaning and complementary feeding practices resulting into inadequate energy and protein intake. The poor feeding practices may be due to either lack of knowledge by the mother or lack of adequate food. Stunting is slightly higher in males when compared to females, though not statistically significant, [12] working in ten sub-Saharan countries also identified a slight male preponderance. Stunting can occur when the child does not have sufficient nutrient to grow and develop and when a child fights poor health or diseases. When children are too short for their age because they have not been adequately nourished, received inadequate care and/or live in unhygienic environments these can leave a devastating and permeate impact on a child's physical and cognitive capabilities.

## CONCLUSION

The prevalence of chronic malnutrition in this study, show the children has high rate of stunting; this was especially among the children in the age group of 12-23months. Stunting were more prevalence in male children. To prevent stunting we must ensure mothers have good nutrition and health prior to, and during, pregnancy; a child has access to a sufficient and nutritious diet; has access to clean water, sanitation and hygiene facilities to prevent infection; and has adequate treatment to recover quickly from disease and poor health.

## CONTRIBUTION TO KNOWLEDGE

Prevalence of chronic malnutrition was as a result of poor feeding habit, diseases condition, poor maternal care and poverty. Prevalence of chronic malnutrition was more in urban area compared to rural area of Ihiala LGA, these was as a result of neglect from parent who are busy with their business and also depriving the children of balanced nutrition.

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