

# Nutritional Status of 1-5yrs Children under Ulubari, UHTC, Assam

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**Abstract:** Under five age group is taken as a priority group because of their large number. In India they comprise about 13% of total population. Globally 5.9 million children under the age of 5yrs died in 2015. More than half of these early child death are due to conditions that could be prevented or treated with access to simple affordable interventions. Malnutrition is regarded as the most widespread condition affecting the health status of under 5 child. Malnutrition is a condition resulting from faulty nutrition. Approximately 47% of children in India are underweight. According to NFHS-4 data in Assam 29.8% of under 5 children are underweight. 6.2% are severely wasted, 17.0% are wasted, 36.4% are stunted. Nutritional status assessment is the measurement that best defines the health and nutritional status of children, while also providing an indirect measurement of well being for the entire population. The present study was undertaken to assess the nutritional status of 1-5yrs children in the urban slum area of Guwahati city, Assam. Objectives: (1) To assess the nutritional status of 1-5yrs children in slums under Ulubari, UHTC, Guwahati city. (2) To find out the association between various sociodemographic factors and nutritional status. Materials and method: A community based cross sectional study was carried out in the field practice area of Ulubari, UHTC under the Department of Community Medicine of Gauhati Medical College and Hospital, Guwahati. The children were examined and mothers of the children were interviewed. Study period: Five months (15<sup>th</sup> Nov 2016 to 15<sup>th</sup> January 2017). Sample size: 380 Results: It was observed that the prevalence of underweight was 32%, wasting 25% and stunting 18%. Significant association was found between nutritional status of children and S E status, however no significant association was found with education of mother and birth order.

**Keywords:** Malnutrition, Stunting, Wasting

## 1. Introduction

Nutritional status of under five children is a matter of concern worldwide and malnutrition is one of the most important public health problems. Nutrition is the cornerstone that affects and defines the health of all people and it paves the way for us to grow, develop, work, play and resist infection. Giving the child a solid nutritional start has an impact for life on her/his physical, mental and social development. Malnutrition continues to be a cause and consequence of disease and disability in the children who survive.

The reasons for malnutrition are myriad and include poverty, lack of nutritious food, inadequate food, improper infant and child feeding, among others. Malnutrition is a complex phenomenon and it is both the cause and effect of poverty and ill-health, and follows a cyclical, inter-generational pattern.

Malnutrition plays a major role in half of the annual child deaths (10.4 million) in the developing world. (1) Globally, wasting continued to threaten the lives of 50 million children under 5 years. Stunting rates are dropping but 156 million children under 5 around the world were still affected in 2015. (2) In India malnutrition can be termed as a burning social problem due to the impact of socio cultural influence on nutrition. As per NFHS-4 in India 35.7% are underweight, 38.4% are stunted and 21% are wasted. More than half (54%) of all deaths before age of 5 years in India are related to malnutrition. In Assam according to NFHS4 21.4% (urban) & 30.8% (rural) of the

children under the age group of 5 years are reported to be underweight, 22.3% (urban) & 38.0% (rural) are stunted, 13.2% (urban) & 17.5% (rural) are wasted and 4.5% (urban) & 6.4% (rural) are severely wasted. Hence, the present study was conducted to assess the nutritional status of 1-5-year old children and to see the association of various socio-demographic factors with nutritional status.

## 2. Objectives

- 1) To assess the nutritional status of 1-5yrs children residing in field practice area of Ulubari, UHTC, Guwahati city.
- 2) To find out the association between various sociodemographic factors and nutritional status.

## 3. Materials and Methods

**Study design:** Community based cross sectional study.

**Study area:** The field practice area of Ulubari, UHTC under the Department of Community Medicine of Gauhati Medical College and Hospital, Guwahati.

**Study population:** Children aged 1-5yr. Informed consent of the parents was obtained before undertaking the study.

**Study period:** 5 months (15<sup>th</sup> August to 15<sup>th</sup> January, 2017)

**Sample size:** 380

**Data collection tool:** Measuring tape, Weighing machine

**Data collection technique:** House to house visit was done in the three slums under UHTC namely Hafiznagar, Islampur and Panjabi colony and info was collected using

predesigned and pretested questionnaire. All 1-5 children were identified and if there were more than one child in the same household then only the youngest child was included.

**Statistical analysis:** Data analysis was done by using instat graph pad.chi square test was used to analysis the data wherever applicable.  $p < 0.05$  was considered significant. The WHO standards were used for comparing the data.

#### 4. Results

In the present study as shown in table1 out of the 380 children who were examined 52.6% were boys and 47.4% were girls. Most of the children examined in the study belong to the age group of 3-4 yrs 33.2% (126/380).

**Table 1:** Distribution of children according to age and sex

Age in years	Boys (%)	Girls (%)
1-2	37(9.8)	25(6.6)
2-3	59(15.5)	40(10.5)
3-4	64(16.8)	62(16.3)
4-5	40(10.5)	53(14)
Total	200(52.6)	180(47.4)

As shown in table2 , prevalence of low weight for age, i.e. undernutrition was found in 32%(122/380).Prevalence of moderate malnutrition was 22.6%(86/380) and severe malnutrition was 9.5%(36/180). The prevalence of low height for age i.e. stunting is 18%(68/380),moderate stunting 11.8(45/380) and severe stunting (6.1%). Similarly low weight for height i.e. wasting is seen in 25%(95/380),moderate 16.8%(68/380) and severe 8.1%(31/380).

**Table 2:** Distribution of children according to nutritional status and age

Age in years	Weight for age(Underweight)			Height for age(Stunting)			Weight for height(Wasting)		
	Severe	Moderate	Normal	Severe	Moderate	Normal	Severe	Moderate	Normal
1-2	4(6.5)	24(38.7)	34(54.8)	3(4.9)	7(11.3)	52(83.8)	5(8.1)	12(19.4)	45(72.5)
2-3	8(8.1)	22(22.2)	69(69.7)	5(5)	8(8.1)	86(86.9)	7(7.1)	16(16.2)	76(76.7)
3-4	10(7.9)	21(16.7)	95(75.4)	6(4.8)	12(9.5)	108(85.7)	8(6.3)	17(13.5)	101(80.2)
4-5	14(15)	19(20.4)	60(64.5)	9(9.7)	18(19.3)	66(71)	11(11.8)	19(20.4)	63(67.3)
Total	36(9.5)	86(22.6)	258(67.9)	23(6.1)	45(11.8)	312(82.1)	31(8.2)	64(16.8)	285(75)

As shown in table 3-5,there has been found a significant association between nutritional status of the children and SE status.However the association between nutritional status and education of the mother is not statistically significant. Children with higher birth order (2nd and  $\geq 3$ rd) were more likely to be malnourished (underweight, stunted/wasted) as compared with first born child but the distribution was not found to be statistically significant( $p > 0.05$ ) nt.

**Table 3:** Association of nutritional status with education of mother

Education status	Weight for age			Height for age			Weight for height		
	Severe	Moderate	Normal	Severe	Moderate	Normal	Severe	Moderate	Normal
Illiterate	11(12.4)	20(22.5)	58(65.1)	7(6.7)	12(11.5)	85(81.8)	8(7.2)	12(10.8)	91(82)
Primary	5(5.3)	23(24.2)	67(70.5)	5(5.6)	7(7.9)	77(86.5)	10(13)	15(19.5)	52(67.5)
Middle	13(14.8)	15(17)	60(68.2)	5(5.8)	11(12.8)	70(82.4)	6(6.4)	19(20.2)	69(73.4)
High school and above	7(6.5)	28(25.9)	73(67.6)	6(5.9)	15(14.9)	80(79.2)	7(7.1)	18(18.4)	73(74.5)
Total	$X^2=8.223$ $p > 0.05$			$X^2=2.473$ $p > 0.05$			$X^2=7.625$ $p > 0.05$		

**Table 4:** Association of nutritional status with S E status

S E Class	Underweight			Wasting			Stunting		
	Severe	Moderate	Normal	Severe	Moderate	Normal	Severe	Moderate	Normal
Class1	3(2)	10(6.6)	138(91.4)	2(1.6)	4(3.1)	121(95.3)	2(1.7)	3(2.6)	110(95.7)
Class2	8(7)	17(14.8)	90(78.2)	6(5.4)	13(11.7)	92(82.9)	5(4.5)	9(8)	98(87.5)
Class3	10(16.4)	26(42.6)	25(41)	8(11.1)	21(29.2)	43(59.7)	7(7.2)	15(15.5)	75(77.3)
Class4	15(28.3)	33(62.3)	5(9.6)	15(21.4)	26(37.1)	29(41.4)	9(16.1)	18(32.1)	29(51.8)
	$X^2=147.69$ $P < 0.05$			$X^2=79.747$ $P < 0.05$			$X^2=53.227$ $P < 0.05$		

**Table 5:** Association of nutritional status with birth order

Birth order	Underweight			Wasting			Stunting		
	Severe	Moderate	Normal	Severe	Moderate	Normal	Severe	Moderate	Normal
1	3(3.7)	20(24.7)	58(71.6)	6(6)	17(17)	87(87)	6(5.7)	9(8.5)	91(85.8)
2	12(9)	27(20.3)	94(70.7)	11(8.7)	22(17.3)	94(74)	7(5.7)	15(12.2)	101(82.1)
$\geq 3$	21(12.7)	39(23.5)	106(63.8)	14(9.8)	25(17.5)	104(72.7)	10(6.6)	21(13.9)	120(79.5)
	$X^2=5.884$ $p > 0.05$			$X^2=2.030$ $p > 0.05$			$X^2=2.005$ $p > 0.05$		

#### 5. Discussion

The percentage of children who were underweight 32% is less as compared to national level (35.7%) according to NFHS4 and similar studies carried out in other parts of the

country Mumbai 35%<sup>[3]</sup>, AP 39%<sup>[4]</sup> Pune 34.3%<sup>[5]</sup>. There are few places like Ludhiana (29.5%) and West Bengal (28.6%) where the prevalence of underweight children is lower as compared to the present study<sup>[6,7]</sup>.

National prevalence of stunting as observed in the National Family Health Survey 4 conducted in 2015 to 2016 was 38.4% which is more than the present study (18%). Similar studies conducted in Mumbai (47%)<sup>[3]</sup>, Pune (58.7%)<sup>[5]</sup>, AP (30%)<sup>[4]</sup> showed higher prevalence of stunting.

The prevalence of wasting as noted in this study 25% was more than the national level according to NFHS4 data. It was comparable with study done in AP<sup>[4]</sup> where it was 22%. It was more than studies carried out in other parts of the country like Mumbai (17%)<sup>[3]</sup>, Pune 16.9%<sup>[5]</sup>, Punjab 12%<sup>[13]</sup>. Studies carried out in Ludhiana (42%) revealed a high prevalence of wasting.<sup>[6]</sup>

As the education of mother increases- all three anthropometric parameters of their children were found to be improving, but the statistical association could not be proved in this study, similar findings were seen in studies carried out in Ludhiana and Kerala.<sup>[6,8]</sup> However mother's education remains an important factor influencing child's nutritional status as seen in various other studies conducted across the country.<sup>[9-12]</sup>

## 6. Conclusion

The world bank estimates that India is one of the highest ranking countries in the world for number of children suffering from malnutrition. The prevalence of underweight children in India is among the highest in world, and is nearly double that of Sub Saharan Africa. Measures of child undernutrition are used to track development progress towards the Millenium Development Goals. Now, in post 2015 development era, estimates of child malnutrition will help determine whether the world is on track to achieve the Sustainable Development Goals-particularly, Goal-2.

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