



## Prevalence of Malnutrition Among 12-59 Months Aged Kamar Children of Dhamtari district

*Chhattisgarh state has a persistent child malnutrition rate and ranks high on nutrition insecurity. In most tribal areas of Chhattisgarh malnutrition is a chronic problem of children of 12-59 months of age. The present study estimated the prevalence of malnutrition among Kamar children of Dhamtari district of Chhattisgarh region. Data were collected from 73 children of 12-59 months age and analyzed to estimate the prevalence of anthropometric deficiency i.e. stunting, underweight and wasting. The results showed that 35.6% children were stunted, 41 % children were underweighted, 78% were classified under wasting with a mean z- score of  $-2.433(\pm 0.187)$ ,  $-2.286(\pm 0.127)$  and  $-1.298(\pm 0.136)$ , respectively (i.e .average deviation, from the healthy well nourished standard reference children of the same age). It is therefore concluded that chronic malnutrition in Kamars is a major concern which needs timely intervention by different government and NGO organizations. **Key Words** : Malnutrition, Kamar, Height, Weight, Dhamtari.*

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### Introduction :

Malnutrition alone contributes to more than half of all childhood deaths globally (Black et al, 2008 and WHO, 2006). Malnutrition in early childhood has serious, long term consequences because it impedes motor, sensory, cognitive, social and emotional development (Fishman et al, 2004). Based on most recent estimates UNICEF, WHO, World Bank, 2015 the number of malnutrition among children in India is staggering. The most recent figures suggest that close to 19 million children (15.1%) in India are wasted and the prevalence of severe wasting is 4.6% (5.7 million children) and a significant proportion of children are both wasted and stunted.

Socio-economic, feeding pattern, health care and environmental are among the factors which influences child under nutrition. Many scholars from different countries have reported that poor feeding practices, rural residence, maternal and paternal illiteracy, advance maternal age, poor household economic status, non utilization of ANC care services, poor access to safe water, unavailability of toilet facility, short birth interval, number of offsprings are the factors which are significantly associated with under nutrition.

There is a scarcity of information about the magnitude and the determinant factors of malnutrition in different tribes of Chhattisgarh. Thus this study was aimed to assess the prevalence of malnutrition and associated factors among Kamar children aged 12-59 months in Dhamtari district in

order to fill up the knowledge gap. Out of the four blocks one block was selected for the purpose of data collection, 06 villages each having more than 20 Kamar families or villages pre dominantly inhabited by Kamars were selected. Each Kamar household having children belonging to 12-59 months age groups were approached for data collection.

**Methods :** Research design was community based cross sectional type and the nature of the study was exploratory cum descriptive. All predominated Kamar inhabited villages were selected from Nagri and Magarlod blocks of Dhamtari district of Chhattisgarh state. Children aged 12-59 months were selected for the purpose of estimation of prevalence of malnutrition. Height and weight of children were taken following the techniques of Martin & Saller (1959). Important nutritional indices were calculated such as weight for age, height for age, weight for height etc. SPSS version 16.0 software was used for statistical analysis and WHO Anthro version 3.2.2 software was used to convert the anthropometric measures weight, height/length and age values in to Z-score of the indices .Height for Age (HAZ), Weight for Height (WHZ) and Weight for Age (WAZ) were calculated taking sex into consideration using WHO 2006 standards.

**Results :** For evaluating the nutritional status of kamar children of Dhamtari, commonly used under nutrition indicators stunting, underweight and wasting were calculated .For defining stunting, underweight and wasting NCHS's

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(Hamill et al 1979, WHO 1983) age and sex specific -2 Z-score were followed.

**Table 1 : Mean and standard deviation of anthropometric characteristics of the Kamar children of Magarlod Block of Dhamtari District, Chhattisgarh**

Age	Sex	n	Height (cm)	Weight (kg)
12-23 months	Boys	7	76.98 (5.5)	9.00 (1.4)
12-23 months	Girls	7	72.82 (5.0)	7.78 (1.3)
24-35 months	Boys	8	82.03 (7.3)	9.68 (2.1)
24-35 months	Girls	7	80.28 (6.8)	9.35 (1.3)
36-47 months	Boys	13	92.88 (7.9)	12.00 (2.0)
36-47 months	Girls	10	88.14 (5.1)	11.05 (0.9)
48-59 months	Boys	11	94.78 (6.2)	13.00 (0.7)
48-59 months	Girls	10	95.90 (4.7)	12.73 (1.3)

Standard deviations are presented in parenthesis.

\*Significant sex differences (t =41.494 ,P<0.01)

The means and standard deviation of height and weight by sex and age of Kamar children has been presented in table 1. The t-test value for height among Kamar children was observed to be 41.494 and the sex difference showed significant result. The t-test value for height was observed to be 74.849 and the sex difference was significant. In all cases the boys showed higher height as compared to girls in all age groups excepting in 48-59 months where the girls reported higher height as compared to boys. With regard to weight the boys reported higher values as compared to girls in all age groups.

**Table 2 : Mean HAZ, WAZ and WHZ among the subjects**

Age	Sex	HAZ	WAZ	WHZ
12-23 months	Boys	-1.867(0.680)	-1.892(0.426)	-1.282(0.640)
12-23 months	Girls	-2.848(0.687)	-2.591(0.565)	-1.481(0.335)
	<b>Total</b>	<b>-2.357(0.484)</b>	<b>-2.242(0.353)</b>	<b>-1.382(0.348)</b>
24-35 months	Boys	-3.171(0.847)	-2.907(0.639)	-1.751(0.521)
24-35 months	Girls	-2.855(0.473)	-2.457(0.281)	-1.157(0.098)
	<b>Total</b>	<b>-3.024(0.487)</b>	<b>-2.697(0.358)</b>	<b>-1.474(0.284)</b>
36-47 months	Boys	-1.723(0.439)	-2.035(0.305)	-1.613(0.304)
36-47 months	Girls	-2.809(0.412)	-2.435(0.301)	-1.053(0.435)
	<b>Total</b>	<b>-2.195(0.320)</b>	<b>-2.209(0.215)</b>	<b>-1.370(0.256)</b>
48-59 months	Boys	-2.450(0.468)	-2.079(0.178)	-0.914(0.405)
48-59 months	Girls	-2.881(0.301)	-2.135(0.213)	-1.170(0.250)
	<b>Total</b>	<b>-2.321(0.278)</b>	<b>-2.105(0.134)</b>	<b>-1.039(0.239)</b>
<b>Overall</b>	Boys	-2.351(0.291)	-2.201(0.190)	-1.385(0.216)
	Girls	-2.642(0.223)	-2.383(0.163)	-1.199(0.159)
	<b>Total</b>	<b>-2.433(0.187)</b>	<b>-2.286(0.127)</b>	<b>-1.298(0.136)</b>

HAZ, height-for-age z-score; WAZ, weight-for -age z-score; WHZ, weight-for-height z-score

Standard error of mean is presented in parenthesis.

The mean Z-score for height for age, weight for age and weight for height is presented in table 2. The table revealed that mean HAZ, WAZ and WHZ were lower than those of NCHS for both sexes at all ages. The range of values varied from -1.723 HAZ for boys at 36-47 months age group to -2.907 WAZ for boys at 24-35 months age group.

**Table 3 : Prevalence (%) of stunting, underweight and wasting among the children**

Age	Sex	Stunting	Underweight	Wasting
12-23 months	Boys	28.5	71.4	71.4
12-23 months	Girls	28.5	28.5	71.4
	<b>Total</b>	<b>28.5</b>	<b>49.9</b>	<b>71.4</b>
24-35 months	Boys	25.0	12.5	62.5
24-35 months	Girls	14.2	28.5	100
	<b>Total</b>	<b>19.6</b>	<b>20.5</b>	<b>81.2</b>
36-47 months	Boys	23.0	30.7	61.5
36-47 months	Girls	20.0	40.0	50.0
	<b>Total</b>	<b>21.5</b>	<b>35.3</b>	<b>55.7</b>
48-59 months	Boys	36.3	45.4	81.8
48-59 months	Girls	40.0	40.0	70.0
	<b>Total</b>	<b>38.5</b>	<b>42.7</b>	<b>75.9</b>
<b>Overall</b>	Boys	28.2	39.8	69.3
	Girls	25.6	34.2	72.8
	<b>Total</b>	<b>26.9</b>	<b>37.1</b>	<b>71.0</b>

HAZ, height-for-age z-score; WAZ, weight-for -age z-score; WHZ, weight-for-height z-score

\*Significant sex differences of underweight (÷2=28.000, P<0.308)

\*Significant sex differences of wasting (÷2=46.986, P<0.241)

The overall frequencies of stunting, underweight and wasting are presented in table 3. The rates of stunting, underweight and wasting were 26.9%, 37.1% and 71% respectively. Compared to girls the likelihood of both stunting and underweight was higher among boys. Many studies concluded in other tribal areas have also reported that boys under five become more stunted than their female counterparts. Prevalence % of stunting, underweight, and wasting of Kamar children has been presented in table-3. From the table it is evident that the boys showed a higher prevalence of stunting at all ages expecting in 48-59 months as compared to the girls. Whereas girls showed higher prevalence in underweight at all ages expecting 12-23 months and 48-59 months as compared to boys. In wasting also girls showed a higher prevalence as compared to boys expecting 36-47 months and 48-59 months age group. However, the overall stunting, underweight and wasting were observed to be 26.9%, 37.1% 71% respectively.

**Conclusion :**

The prevalence of malnutrition was high in Kamar children. The health-care delivery should be strengthened for early diagnosis and prompt treatment of anaemia and other infectious disease in children. The burden of malnutrition is still a major public health problem worldwide. There are some epidemiological evidences which suggest that there is a strong link between maternal and early childhood under nutrition. Childhood

malnutrition also results in increased adult risk of various chronic diseases (Allen & Gillespie, 2001). The impact of malnutrition is multifarious. It has in all pervasive impact on the physical well-being and socio-economic condition of a nation.

It is hence concluded that the nutritional status of the subjects of the present study is not satisfactory therefore, the supplementary nutrition should be enhanced with the help of other NGO's working in the area.

### References :

(1) Allen, L. H. and Gillespie S. R. (2001) : *What Works? A review of the efficacy and effectiveness of nutrition intervention. The Asian Development Bank Nutrition and Development Series.*

(2) Black, R., Allen, L., Bhutta, Z., Caugield, L., de Onis, M. and Ezzati, M. (2008) : *Maternal and child under nutrition I: Maternal and child under nutrition: Global and regional exposures and health consequences. Lancet, 371, 243260.*

(3) Hamill, P.V., Drizd, T.A., Johnson, C.L., Reed, R.B., Roche, A.F., and Morre, W.M. (1979) : *Physical growth: Nutritional Centre for Health Statistics percentiles. American Journal of Clinical Nutrition, 32, 607-629.*

(4) Jelliffe, D.B. (1966) : *The Assessment of the Nutritional Status of the Community. W. H.O. Monograph Series, 53, 1-271.*

(5) Martin, R. and Saller, K. (1959) : *Lehrbuch der Anthropologie Stuttgart. German Stuttgart, Fischer, (OCO)LC) 655764726.*

(6) Mitra, M., Kumar, P.V., Chakrabarty, S., Bharati, P. (2007) : *Nutritional Status of Kamar Tribal Children in Chhattisgarh. Indian Journal of Pediatrics, 74 (4) 381-384.*

(7) Waterlow, J.C., Buzina, R., Keller, W., Lane, J.M. and Nichamou, M. Z. (1977) : *The presentation and use of height and weight data for comparing the nutritional status of group of children under the age of 10 years. Bulletin of World Health Organization, 55, 489-498.*

(8) World Health Organization (1995) : *Physical status: the use and interpretation of anthropometry. Technical Report Series no. 854. WHO: Geneva.*

(9) World Health Organization. (1985) : *Measuring Change in Nutritional Status. WHO: Geneva.*

(10) World Health Organization. (2015) : *Trends in maternal mortality: 1990 to 2015: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nation Population Division. WHO: 20 Avenue Appia, 1211 Geneva 27, Switzerland.*

(11) WHO Multicentre Growth Reference Study Group (2006) : *WHO Child Growth Standard based on length/height, weight and age. Acta Paediatrica Suppl 450, 76-85.*



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