

## Nutrient Consumption among Tribal and Non Tribal Children

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### Abstract

*Introduction:* Nutritional status refers to the health of an individual as it is determined by the intake of nutrients and their utilization. Food consumption is one of the major factors determining nutritional status of any community, which is also influenced by the environmental changes. *Methodology:* A questionnaire was developed for collecting the detailed information about the child (name, age, gender, birth order), parental consanguinity, child rearing health practices and socio economic status. The ages of the children were obtained from birth record and also interviewing mother with the help of local event calendar. *Results:* The average intake of energy consumed by both tribal and non tribal children was below the RDA except non tribal 3-<4 and 5-5.5 years age group children where as the consumption of protein among tribal and non tribal were more than the RDA of India. *Conclusion:* The consumption of energy and protein were low among tribal than non tribal children.

**Keywords:** Tribal Children; RDA; Nutritional Deficiency.

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### Introduction

Nutrition may be defined as 'the science of food and its relationship to health'. It is concerned primarily with the part played by nutrients in body growth, development and maintenance [9] (WHO, 1971). The word Nutrient or "food factor" is used for specific dietary constituents such as proteins, vitamins and minerals. Dietetics is the practical application of the principles of nutrition; it includes the planning of meals for the well and the sick. Good nutrition means "maintaining a nutritional status that enables us to grow well and enjoy good health" [1] (WHO, 1988).

Nutritional status refers to the health of an individual as it is determined by the intake of nutrients and their utilization. Food consumption is one of the major factors determining nutritional status of any community, which is also influenced by the

environmental changes.

Health and nutritional problems during childhood are the result of a wide range of factors like insufficient food intake [2] (and/or several repeated infections, particularly affecting the low income group [3].

The problem of Malnutrition in developing countries encompasses a spectrum of deficiencies of which the most devastating are that of micronutrients, especially iron deficiency anemia and nutritional blindness.

Nutrition is pre-requisite for optimal growth and development of children. A diet inadequate in quantity and quality is a relevant factor affecting growth and development. While malnutrition affects the people of all ages, it is agreed that children in general are worst sufferers [4].

Children, (both preschool and school age) being future citizens form an important segment of the

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Indian population. Good nutrition of the children is an indispensable component of healthy life. It is also a determinant of healthy growth of mind and body [5].

Nutritional status of an individual or a community can be done or assessed in a variety of ways depending upon the resources and circumstances, which include dietary and deficiency sign survey, bio-chemical tests and the application of Anthropometry.

In large areas of the world today, nutrition is one of the principal public problem that affects young children. The quality of human resources of any country is largely determined by the quality of its child development for which early childhood lays the foundation.

Malnutrition is a result of interaction between poor diet and diseases which in turn result from underlying causes of food insecurity, maternal child care, poor health services and environment. Thus malnutrition among the children is a multidimensional problem interfacing all efforts of developing human resources

The problem of malnutrition and poor health is more acute by low-socio- economic condition, environmental situation, nutritional education and health programmes etc., among tribal children.

Health is the primary factor and foundation stone of human personality. Gopalan 1983 has estimated that about eighty percent of the Indian children fall to develop their genetic potential for their physical and mental development because of pervasive malnutrition. Less than four percent have correct knowledge of an attitude to physical and mental health, diet and nutrition, family planning and child care.

The health and nutritional problems of the vast tribal population of India are as varied as the tribal groups themselves, who present a bewildering diversity and variety in their socio-economic, socio-cultural and ecological settings. Malnutrition is common and has greatly affected the general physique of the tribal children. Malnutrition lowers the ability to resist infection, leads to chronic illness and during post weaning periods it leads to permanent brain impairment.

Malnutrition (under-nutrition) tends to affect some sections of our society predominantly. Malnutrition being a reflection of unfulfilled dietary demands, it is most likely to occur during the three most demanding periods in human life (1) growing age (2) pregnancy and (3) the period of lactation. Therefore, the worst impact of malnutrition falls within these three groups.

Furthermore, it is natural that malnutrition is more prevalent among the poorer section of society due to the restriction of diet imposed upon them by their poverty. As a result of this unfortunate combination of circumstances, the worst sufferers are the infants and children, pregnant and nursing women of the under-privileged classes [6].

## Methodology

### *Inclusion Criteria*

- Children in the age group of 1-5 years in H.D Kote Taluk.

### *Exclusion Criteria*

- Children below 1 years and above 5 years of age.

The present study is an effort in exploring the health and nutritional status of tribal children and Non Tribal children through cross-sectional survey carried out in HD Kote Taluk which represent a considerable tribal population during Nov 2010 to July 2012.

A questionnaire was developed for collecting the detailed information about the child (name, age, gender, birth order), parental consanguinity, child rearing health practices and socio economic status. The ages of the children were obtained from birth record and also interviewing mother with the help of local event calendar.

### *Clinical Nutritional Signs*

This is an important practical method (Adopted from WHO Expert Committee on Medical Assessment of Nutritional Status) used for assessing the nutritional status of the community. This method of assessment, based on the recognition of certain physical signs believed to be related to inadequate nutrition, that can be seen or felt in superficial epithelial tissues, especially the skin, eyes, hair and buccal mucosa or in organs near the surface of the body, such as the parotids and thyroid glands (Jelliffe, 1966). The section consists of various signs related to hair, face, eye, tongue, teeth, gums, glands, skin and nails. The presence or absence of these signs helps in knowing nutritional status of children. The following descriptive lists of physical signs in a human body were recorded from head to foot.

## Results

In the Tribal group, 272 male and 228 female

children were studied and in the Non tribal group, 269 male and 231 female were studied. So a total of 1000 cases formed the study subjects.

the Tribal and 500 cases from the Non tribal population formed the study subjects.

As seen from the Table 1, a total of 500 cases from

In the Tribal group, 272 male and 228 female children were studied and in the Non tribal group,

**Table 1:** Age wise distribution of tribal and non tribal children

			Tribals	Group Non-Tribals	Total
Ages in Years	1-<2	Count	53	60	113
		% of GROUP	10.6%	12.0%	11.3%
	2-<3	Count	90	73	163
		% of GROUP	18.0%	14.6%	16.3%
	3-<4	Count	119	123	242
		% of GROUP	23.8%	24.6%	24.2%
	4-<5	Count	117	120	237
		% of GROUP	23.4%	24.0%	23.7%
	5-<5.5	Count	121	124	245
		% of GROUP	24.2%	24.8%	24.5%
Total	Count	500	500	1000	
	% of GROUP	100.0%	100.0%	100.0%	

**Table 2:** Gender wise distribution of cases in tribal and non tribal population

			Tribals	Group Non-Tribals	Total
Sex	Male	Count	272	269	541
		% of GROUP	54.4%	53.8%	54.1%
	Female	Count	228	231	459
		% of GROUP	45.6%	46.2%	45.9%
Total		Count	500	500	1000
		% of GROUP	100.0%	100.0%	100.0%

**Table 3:** Average Intake of nutrients among Tribal Children

Age Group	Intake	Energy (K cal) RDA	% Deficient	Intake	Protein(gm/d RDA	% Deficient
1-<2	718.8	1060	33%	17.6	15.1	0
2-<3	819.4	1060	23%	19.4	16	0
3-<4	910.4	1060	15%	21.6	17.2	0
4-<5	995.3	1350	27%	23.0	18.3	0
5-<5.5	1112.5	1350	18%	26.6	19.8	0

**Table 4:** Average Intake of nutrients among non tribal Children

Age Group	Intake	Energy(K cal) RDA	% Deficient	Intake	Protein(gm/d RDA	% Deficient
1-<2	949.	1060	11%	21.5	15.1	0
2-<3	1018.9	1060	4%	24.8	16	0
3-<4	1175.2	1060	0%	26.1	17.2	0
4-<5	1271.7	1350	6%	33.1	18.3	0
5-<5.5	1450.2	1350	0%	35.3	19.8	0

P value<0.05

269 male and 231 female were studied.

age group children where as the consumption of protein among tribal and non tribal were more than the RDA of India.

This table 4 shows average intake of protein(gm/d) and energy (k cal/d) among tribal and non tribal children. The consumption of energy and protein were low among tribal than non tribal children. P value is significant. The average intake of energy consumed by both tribal and non tribal children was below the RDA except non tribal 3-<4 and 5-5.5 years

**Discussion**

In the present study consumption of energy and

protein were low among tribal children than non tribal children. But consumption of protein among both tribal and nontribal were more than RDA of India. A study done by Mitra et al [7] on Kamar tribes of Chattisgarh were also shown to have lower energy intake than RDA. Singh et al conducted a study on boys belonging to Spitian tribe of the high altitudes of the Himalayas in order to evaluate their nutrient intakes. The 24-hour recall data on nutrient intake was collected on 149 subjects during 1996-1998 from various areas of Spiti valley. The amounts of nutrients present in each food item consumed by the subject were calculated. The diet of Spitian is low in calories than the RDA similar to our study [8].

### Conclusion

Mean calorie and protein intake among different age group is more among non tribal children than tribal children. Mean calorie intake is deficient than RDA from 15%-33% among tribal children as against 0-11% among non tribal children.

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