

Dietary Status among Jenu Kuruba and Yerava Tribal Children of Mysore District, Karnataka

S.C. Jai Prabhakar and M.R. Gangadhar*

*Centre for Multi-Disciplinary Development Research, Dharwad 580 004, Karnataka, India

**Department of Anthropology, University of Mysore, Manasagangotri, Mysore 570 006, Karnataka, India

E-mail: anthroprabhakar@yahoo.co.in, *gangadharmr@yahoo.com

KEYWORDS Tribes. Children. Diet. Energy Intake

ABSTRACT The present study was undertaken to evaluate the dietary status of 6+ to 10+ year children of Jenu Kuruba (n=176) and Yerava (n=161) tribal children representing three taluks of Mysore district, Karnataka State. Findings of dietary habits were recorded through interview schedule and a survey was conducted using 24 hour recall method. The study reveals that the percentage of adequacy in energy and protein intake among both the tribal group children was more or less same and below the respective RDAs. Intake of calcium, iron and beta-carotene are varied from age differential. Consumption of calcium rich food was more among Jenu Kuruba than Yerava children.

INTRODUCTION

A healthy population can lead the nation better in all the frontiers. In India, a staggering 320 billion people live below the poverty line, resulting in widespread prevalence of under-nutrition. The growing childhood years are more critical since the curse of under-nutrition is more pronounced. The low nutrition status of tribal population in general and that of children in particular is a matter of serious concern. It is feared that the nutritional status of tribal children is much lower as compared to rest of the population. Population having low dietary intakes experienced a pattern of growth characterized by slow growth rate (Rao and Satyanarayana 1976). Most of the tribal people of India have their own geographically isolated life style. Inadequate food habits along with traditional socio-cultural and biological activities may lead to a high proportion of child under nutrition (Balgir et al. 2002; Rao et al. 2006). Children (both pre-scholars and school age) being future citizens form an important segment of the 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 (Balgir et al. 2002). Childhood dietary habits are important, because a food culture once adopted is apparently difficult to reverse (Brunner 1997). Diet and nutrition are important for healthy life. Children's nutritional status affects their mortality and morbidity pattern, their activity level and health status. Dietary intake

also serves as the best indicator for assessing nutritional status. The dietary intake among the tribal girls was found to be very poor in comparison to RDA (Sahoo and Pal 2006). Keeping all this in view, the aim of the study is to evaluate the dietary status among the tribal children in Mysore district, Karnataka state, India.

MATERIAL AND METHODS

For the present study, 176 Jenu Kuruba (80 boys and 96 girls) and 161 Yerava children (77 boys and 84 girls) ranging between 6+ to 10+ years age group were selected purposefully. Fieldwork was conducted during the month of September to November 2006. All the children between the age 6.00-6.99 were included in 6+ age group, 7.00 to 7.99 in the age group 7+ and so on up to 10+ (Sidhu et al. 2007). The samples were collected from different tribal settlements of Hunsur, Piriya-pattana and Heggada Devana Kote taluks. The related tribal settlements were 12 to 55 km from the taluk headquarters.

The chief lady and /or the subject of the household were contacted, briefly explained about the purpose of the study. Parental consent was obtained and interviewed to get hold of desired information using pretested interview schedule. Besides personnel particulars of the subjects, a dietary survey using '24 hour recall method' was conducted by means of standardized cup set to find out the intake of various foods in different meals of a day. Consumption of cooked

food by the subjects was recorded in terms of household measures/numbers to find out the quantum of raw food intake. The nutrient content of the diets was worked out using food composition tables (Gopalan 1989). Average nutrient intake by different age groups was compared with their respective recommended dietary allowance (RDA) for Indians and percent adequacy for all the nutrients was calculated by tables of National Institute of Nutrition, ICMR, India (ICMR 2004).

Population

Jenu Kurubas is one of the primitive tribal groups of Karnataka. The prefix *Jenu* means "honey", Kuruba indicates their caste name. The Kuruba is the name of the large shepherd community of Karnataka Plateau (Aiyappan 1948). Jenu Kurubas are settled in a rehabilitated colony surrounded by forest area. Even though their traditional occupation is honey collection, majority of them work as day labourers. Only few of them cultivate the land. Jenu Kurubas are mostly non-vegetarian. They eat the flesh of animals they hunt. They relish the flesh of goat, pig, deer, rabbit, hen and other birds etc. and even flesh of dead animals found in the forest. The flesh of the rat is a delicacy, but they avoid beef. They catch fish from the streams. They consume the seasonably available vegetables. They prepare '*sambar*' and '*palye*' with vegetables, vegetable leaves and pulses. Tur dal is the main pulses and *Ragi* is their staple food. On festivals, they prepare sweet i.e. '*payasa*'. They consume coffee, tea, milk and milk products. They eat fruits and nuts, which they get from the surrounding forest or can afford to buy from nearby market. Jenu Kurubas smoke *beedis* and chew betel leaves, areca nuts and tobacco. Both men and women consume alcohol. First cross-cousin marriages including those of patrilateral, multilateral cross-cousin and maternal uncle-niece type are

common. Monogamy is the norm. They are traditionally food gatherers and shifting cultivators. Now they have switched over from their past nomadic life to settled life (Gupta 2003; Prabhakar and Gangadhar 2009).

Yeravas are distributed in the border area of the three southern states, viz., Karnataka, Kerala and Tamil Nadu. Yeravas are non-vegetarians. Rice, *Ragi* and *Jowar* are their staple foods. They eat various pulses, vegetables, fruits, milk and milk products. They collect and eat roots and tubers that are available in the forest. Men and women regularly consume alcohol. Smoking *beedi*, chewing betel leaves and areca nut with tobacco and using snuff are common habits among them. They follow patrilocal society and patrilineal descent. Endogamy is the marriage rule at group level. Nuclear and extended families are found. Land and forest are the main economic resources of the Yearava. However, very few among them own land and cultivate it. Most of them are agricultural labourers or annual contract labourers (Chandra 2003).

RESULTS

The mean daily intake of nutrient by Jenu Kuruba children of different age is shown in Table 1. The percent adequacy of energy was very low among the children of 6 to 9 years age with intake below 50 percent of their respective RDAs. However, it was little higher in case of children in age group of 10+ years. The protein intake of 6 years was 29.85 g/day (99.5%) in line to respective RDA, 7 to 9 years is 89%, 10+ years boys and girls were 74% and 75.5% respectively. The mean calcium intake of 6 years age group is approximately 117.7% and 10+ year girls were 106.4% which is more than the RDA. Similarly, 7 to 9 year age group children was 88% and 10+ year age group boys was 82.2% adequacy of RDA. Mean intake of iron and beta-carotene were 50% and more of RDA. Similar findings among

Table 1: Average daily nutrient intake of Jenu Kuruba children

Age	No.	Energy		Protein		Calcium		Iron		β Carotene	
		Kcal	%adequacy	g	%adequacy	mg	%adequacy	mg	%adequacy	μ g	%adequacy
6	36	806.90	47.7	29.85	99.5	470.97	117.7	9.15	50.8	709.3	44.3
7 to 9	114	912.05	46.8	36.5	89.0	351.97	88.0	14.86	57.2	1326.8	55.3
10+ (B)	11	1117.15	51.0	39.95	74.0	493.02	82.2	28.05	82.5	1343.3	56.0
10+ (G)	15	1012.05	51.4	43.03	75.5	638.62	106.4	18.93	99.6	1349.8	56.2

*RDA given by ICMR (2004)

Table 2: Average daily nutrient intake of Yerava children

Age	No.	Energy		Protein		Calcium		Iron		β Carotene	
		Kcal	%adequacy	g	% adequacy	mg	%adequacy	mg	%adequacy	µg	%adequacy
6	24	722.4	42.7	26.30	87.7	363.62	90.9	7.02	39.0	850.00	53.1
7 to 9	113	780.9	40.0	28.48	69.5	374.71	93.7	11.64	44.8	1997.20	83.2
10+ (B)	10	1180.2	53.9	36.48	67.6	435.62	72.6	22.32	65.6	1983.45	82.6
10+ (G)	14	1245.9	63.2	33.64	59.0	513.40	85.6	15.12	79.6	1839.70	76.7

*RDA given by ICMR 2004

the children of Jaipur city also shows the mean intake of energy, total fat, calcium, iron were below the RDAs, except for protein and thiamine intakes (Goyle et al. 2004).

It is evident from the findings of the Yerava children (Table 2) that the energy intake was much below the recommended dietary allowance in both 6 and 7 to 9 years age categories, but the amount being little higher in the diets of 10+ years old children which cannot be considered adequate. However, the percent deficit of protein was more in case of 7 to 9 and 10 year old children as compared to (87.7%) 6 year old children. Tribal children of Bihar also have similar deficiency of calorie which is 38%, whereas protein deficiency was about 19% (Yadav and Singh 1999). The mean intake of calcium was a little higher than other nutrients. The average iron intake ranged from 7.02 mg to 22.32 mg per day which was lower than RDA. The families consumed only seasonal vegetables, and diet was predominantly cereal based leading consequently to low intake of beta-carotene comparatively RDA, which is comparable to data obtained by Goyle et al. (2004)

DISCUSSION

The children derived the proteins mainly from cereals, while some even consumed pulses in larger amounts. The intake of milk, pulses and green leafy vegetables was low, leading to consequently low intake of iron and beta-carotene among 6 and 7 to 9 year age group, but comparatively more among 10+ year boys and girls of Jenu Kuruba children. Among Yerava children, lesser intake of milk product and foods of vegetable origin could be the contributing factor for deficiency of calories and proteins.

The mean intake of all the nutrients for all the age categories was found to be nearly comparable. The findings are consistent with the results of a study conducted by Sankhala et al. (2004) which revealed highly (73%) inadequate energy and

protein intake than RDA among the children of Udaipur district of Rajasthan and Mitra et al. (2007) stated that the consumption of energy and protein was also very low among Kamar children of Chhattisgarh than RDA of India. Though the percentage of adequacy in energy and protein intake among both the tribal group children was almost same, the consumption of calcium rich food was more among Jenu Kuruba than Yerava children. But intake of beta-carotene was high among the children of Yeravas. The overall study reveals that urgent measures need to be put in place to ensure children and their families have access to nutritious food and balanced diet.

ACKNOWLEDGEMENTS

We thank the parents, anganavaadi workers, Government officials and school teachers who cooperated with us to conduct the study, and all the children who participated in the study. The authors gratefully acknowledge the assistance provided by Dr. M. Komala, Assistant Professor in Human Development, Department of Food Science and Nutrition, University of Mysore, Mysore, for Nutritional Assessment of the Children.

REFERENCES

- Aiyappan A 1948. *Report on the Socio- economic Condition of the Aboriginal Tribes of the Province of Madras*. Madras: Government Press.
- Balbir RS, Kerkatta AS, Murmu B, Dash BP 2002. Clinical assessment of health and nutritional status of Gond children in Kalahandi district of Orissa. *Ind J Nutr Dietet*, 39(1): 31-37.
- Brunner E 1997. Inequalities in diet and health. In: PS Shetty, K McPherson (Eds.): *Diet, Nutrition and Chronic Disease: Lessons from Contrasting Worlds*. Chichester: John Wiley & Sons, Inc., pp.77-94.
- Chandra Nirmal 2003. Yerava. In: KS Singh (Ed.): *People of India: Karnataka*. New Delhi: Anthropological Survey of India, Affiliated East-West Press Pvt. Ltd., Vol.26(3), pp. 1554-1562.
- Gopalan C, Rama Sastri BV, Balasubramaniam SC 1989.

- Nutritional Value of Indian Foods*. Hyderabad: National Institute of Nutrition.
- Goyle Anuradha, Swati Vyas, Preeti Jain, Neetu Shekhawat, Harsha Saraf 2004. Nutrient intakes of children residing in squatter settlements on pavements and along roadsides in Jaipur city. *J Hum Ecol*, 15(2):143-146.
- Gupta R 2003. Jenu Kuruba. In: KS Singh (Ed.): *People of India: Karnataka*. New Delhi: Anthropological Survey of India, Affiliated East-West Press Pvt. Ltd., Vol. 26(2), pp. 673-678.
- ICMR 2004. *Report of Expert Group: Nutrient Requirement and Recommended Dietary Allowance for Indians*. New Delhi: Indian Council of Medical Research.
- Mitra M, Kumar PV, Chakrabarty S, Bharati P 2007. Nutritional status of Kamar tribal children in Chhattisgarh. *Ind J Pediatr*, 74(4): 381-384.
- Prabhakar Jai SC, Gangadhar MR 2009. Nutritional status of Jenukuruba tribal children in Mysore district, Karnataka. *Anthropologist*, 11(2): 83-88.
- Rao DH, Satyanarayana K 1976. Nutritional status of people of different socio-economic groups in the rural area with special reference to preschool children. *Ecology of Food and Nutrition*, 4: 237-242.
- Rao Mallikarjuna K, Hari Kumar R, Venkaiah K, Brahman GNV 2006. Nutritional status of Saharia-A primitive tribe of Rajasthan. *J Hum Ecol*, 19(2): 117-123.
- Sahoo Subarna Lata, Sasmita Pal 2006. Dietary pattern of tribal girls: Data from a small city in eastern India. *Stud Tribes Tribals*, 4(2): 93-97.
- Sankhala Aarti, Sankhla AK, Bhavna Bhatnagar, Alpana Singh 2004. Dietary status of children of Udaipur district. *Anthropologist*, 6(4): 257-259.
- Sidhu S, Kumari K, Uppal M 2007. Prevalence of anaemia in Bazigar (Ex-nomadic Tribe) preschool children of Punjab. *J Hum Ecol*, 21: 265-267.
- Yadav RJ, Singh P 1999. Nutritional status and dietary intake in tribal children of Bihar. *Indian Pediatrics*, 36(1): 37-42.