

# Determinants of Nutritional Status among Tribal Adolescent in Girls Paschim Medinipur District of West Bengal

Soumyajit Maiti<sup>1,2</sup>, Debidas Ghosh<sup>1,2,3</sup>, Shyamapada Paul<sup>2,3</sup>

<sup>1</sup>Department of Bio-Medical Laboratory Science and Management, (U.G.C Innovative Funded Department), <sup>2</sup>Department of Bio-Medical Laboratory Science and Management, Nutrition and Dietetics Unit, Vidyasagar University, Midnapore, <sup>3</sup>Rural Research Institute of Physiology and Applied Nutrition (RRIPAN), 'Gitanjali', Dr. Nilay Paul Road, Midnapore, West Bengal, India.

## Correspondence to:

Dr. Shyamapada Paul,  
Rural Research Institute of Physiology and Applied Nutrition (RRIPAN), Gitanjali, Dr. Nilay Paul Road, Midnapore – 721 101, West Bengal, India.  
E-mail: paul\_shyamapada@rediffmail.com

Date of Submission: Dec 20, 2011

Date of Acceptance: Jan 05, 2012

**How to cite this article:** Maiti S, Ghosh D, Paul S. Determinants of nutritional status among tribal adolescent in girls paschim medinipur district of west Bengal. Int J Prev Med 2012;4:298-9.

## DEAR EDITOR

Tribal population constitutes about 8% of the total population of India.<sup>[1]</sup> They are at higher risk of undernutrition because of their dependence on primitive agriculture practices and uncertainty of food supply.<sup>[2]</sup> In general, tribal communities in India are neglected, discriminated in terms of income distribution and social status, which tend to have higher rates of undernutrition.<sup>[3,4]</sup> Recognizing these problems, the Government of India has been implementing several programs for overall development of the tribal communities.<sup>[1]</sup> In spite of vulnerable segment of population, adolescent girl of many indigenous communities have suffered higher degree of undernutrition<sup>[1,3,5]</sup> and not receive adequate attention. Assessment of nutritional status is considered as a measure of health and it is necessary for planners to understand the food and nutrition situation among tribal population for upliftment of these vulnerable groups.

This community based cross sectional study was conducted among the tribal adolescent girls reside in 7 blocks namely- Binpur I, Binpur II, Jamboni, Jhargram Sadar, Gopiballavpur I, Gopiballavpur II and Sankrail of Paschim Medinipur district of West Bengal during the year of 2011. A total of 277 adolescent girls between 9 to 19 years of age

were enrolled in present study. Height and weight were measured by standard techniques<sup>[6]</sup> and body mass index (BMI) was calculated using the following equation: BMI=weight (kg)/height (m<sup>2</sup>). The indices of undernutrition, such as stunting and thinness were assessed by using the 2007 WHO growth reference.<sup>[5]</sup> While, stunting and thinness was defined as Z-scores below -2.0 SD.<sup>[7]</sup>

Mean BMI of girls was 15.38 (sd3.18). Prevalence of undernutrition of tribal adolescent girls is depicted in Table 1. The overall (age combined) rate of stunting and thinness were 50.5% and 45.1%, respectively. Recently, Sil *et al*,<sup>[5]</sup> reported lower prevalence of stunting (18.5%) and thinness (28.5%) among tribal girls of Tripura using same growth reference. In Paschim Medinipur district of West Bengal, the prevalence of stunting was 43.3% among the Kora-Mudi girls.<sup>[3]</sup> In the earlier study carried out by Rao *et al*,<sup>[1]</sup> in tribal adolescent girls residing in the Integrated Tribal Development Agency (ITDA) areas of India, revealed similar rate of stunting (46%). The extent of undernutrition (<5<sup>th</sup> percentile BMI age) and among the Sabar tribal adolescents girls (35.8%) was relatively lower compared to present study.<sup>[7]</sup> Astoundingly, the prevalence of thinness was lower among tribal girls than their rural counterparts of same district.<sup>[8]</sup> The present study demonstrated that

**Table 1:** Prevalence of undernutrition among tribal adolescent girls

Age (Year)	No	Height (cm) Mean±SD	Stunting (%)	BMI Mean±SD	Thinness (%)
9	33	121.87±8.94	17 (51.5)	13.02±2.25	18 (54.5)
10	43	124.86±8.39	26 (60.4)	13.94±3.08	21 (48.8)
11	20	131.95±9.47	9 (45.0)	14.23±2.28	7 (35.0)
12	25	137.5±9.52	12 (48.0)	15.29±3.66	10 (40.0)
13	22	137.31±9.46	14 (63.6)	16.14±3.70	8 (36.3)
14	21	145.15±10.89	9 (42.8)	16.27±2.92	9 (42.8)
15	27	144.92±8.18	16 (59.2)	16.72±2.49	11 (40.7)
16	23	147.81±8.43	9 (39.1)	16.36±2.15	12 (52.1)
17	18	149.28±4.47	7 (38.8)	16.03±1.93	8 (44.4)
18	21	147.80±6.46	11 (52.3)	17.43±2.89	10 (47.6)
19	24	150.53±5.38	10 (41.6)	17.38±2.51	11 (45.8)
Total	277	136.85±8.07	140 (50.5)	15.38±3.18	125 (45.1)

this vulnerable group tend to higher rates of growth retardation and prevalence of undernutrition. This may be due to inadequate food intake, health care facilities and socio-economic inconvenience among these tribal populations propagate the vicious cycle of undernutrition.

## REFERENCES

1. Rao KM, Balakrishna N, Laxmaiah A, Venkaiah K, Brahman GNV. Diet and nutritional status of adolescent tribal population in nine states of India. *Asia Pac J Clin Nutr* 2006;15:64-71.
2. Rao KM, Hari Kumar R, Venkaiah K, Brahman GNV. Nutritional status of Saharia -a primitive tribe of Rajasthan. *J Hum Ecol* 2006;19:117-23.
3. Bisai S, Mallick C. Prevalence of undernutrition among Kora-Mudi children aged 2-13 years in Paschim Medinipur District, West Bengal, India. *World J Pediatr* 2011;7:31-6.
4. Chakrabarty S, Bharati P. Physical growth and nutritional status of the Shabar tribal adolescents of Orissa, India: A Cross-sectional Study. *Malaysian Journal of Nutrition* 2008;14:101-12.
5. Sil SK, Roy Sarkar S, Saha S, Roy S. Assessment of nutritional status of rural tribal children in Tripura. *Indian Pediatr* 2011;48:488-9.
6. Lohman TG, Roche AF, Martorell R. Anthropometric Standardization Reference Manual. Chicago, IL: Human Kinetics Books; 1988.
7. World Health Organization. Growth reference data for 5-19 years. Available from: <http://www.who.int/growthref/who2007/en/index.html>. [Last assessed on 2012 Jan 31].
8. Maiti S, Ghosh D, Paul S. Prevalence of thinness among early adolescent in rural school girls of Paschim Medinipur, West Bengal, India. *J Trop Pediatr* 2011; 57:496-7.

**Source of Support:** Nil, **Conflict of Interest:** No conflict of interest.