

Nutritional Status of Urban Tripuri Tribal Boys of Agartala, Tripura

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ABSTRACT A cross-sectional study of the nutritional status was made on 365 Tripuri boys (aged 8 to 15 years) in Agartala, the capital of Tripura. This study was carried out to determine the nutritional status of school going Tripuri tribal boys of Agartala. The cluster random sampling method was followed for selecting the subjects from different schools of Agartala city. Nutritional status such as stunting, thinness and overweight was analyzed by using the growth reference data of World Health Organization. Prevalence of stunting, thinness and overweight were 7.67%, 17.81% and 6.03% respectively.

INTRODUCTION

The nutritional status of children is a good indicator of the health status of a community (Bhargava 1999) and the school-going children, the most important segment of our society, present a general health status of a community and the nation as a whole (Vashisht et al. 2005). Anthropometry offers a reliable method to assess the nutritional status of the children (Bhasin et al. 1990; Bisai et al. 2008). World Health Organization (WHO) has recommended various indices based on anthropometry to evaluate the nutritional status of children. Body mass index (BMI) is an inexpensive and non-invasive measure that has been extensively utilized to assess the nutritional status of adults and thinness in adolescents (WHO 1995).

Several studies have been conducted on physical growth and nutritional status of tribal children in different parts of the country (Reddy and Rao 2000; Mitra et al. 2002; Rao et al. 2005; Ghosh and Bharati 2006; Bhasin and Jain 2007; Chakrabarty and Bharati 2008). However, comparatively very few studies (Gaur and Singh 1995; Khongsdier and Mukherjee 2003; Singh and Sengupta 2007; Bhasin et al. 2008; Sil et al.

2011) on tribal children have been reported from the north-eastern part of India. In the present work, an attempt has been made to assess the nutritional status of the school age children (8-15 years) of Tripuri tribal boys of Agartala, the capital city of the state of Tripura, using WHO recommended anthropometric indices.

MATERIALS AND METHODS

The present study is based on a cross-sectional sample of 365 Tripuri tribal school going boys (aged 8 to 15 years) from Agartala, Tripura. There are nineteen classified tribal populations in Tripura and the Tripuris are numerically the largest tribal population of Tripura. For selecting the subjects, the cluster random sampling method was followed. First the schools were randomly selected from urban areas and then all the students of respective age were included in the study. The socio-economic status of each subject was assessed by modified Kuppuswamy's scale (Mishra 2003). All boys were from middle socio-economic status. The study was carried out in accordance with the revised ethical guidelines for human experimentation of Helsinki Declaration of 2000 (Touitou et al. 2004). For the assessment of nutritional status of tribal boys of Agartala three anthropometric indices of under nutrition such as stunting, thinness and overweight were calculated according to the classification of World Health Organization (WHO 1995), using the 2007 WHO growth reference data for 8-15 years (WHO 2007).

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Height (stature) was measured on a stadiometer and the weight was measured on a personal weighing machine, checked against a standard weight before each measurement. Height and weight were measured to the nearest 0.1 cm and 0.5 kg. Participants were requested to remove their shoes and wear light underwear prior to taking measurements of both height and weight. Anthropometric measurements were taken following the recommendations given by Weiner and Lourie (1981). The exact date of birth of subjects has been recorded from school record and was cross-checked from birth certificates and parents

RESULTS AND DISCUSSION

In Table 1, the number of Tripuri boys of Agartala in each single year and their mean values of weight and height with standard deviations are shown. The mean values of the measurements increased steadily from 8 to 15 years. Highest increment in weight was found between 11-12 years (7.09 kg) and 14-15 years (6.97 kg). The total increment between 8 and 15 years was 25.97 kg.

Table 1: Statistical constants of weight and height among school-going Tripuri tribal boys of Agartala

Age in years	(N)	Weight(kg)		Height(cm)	
		$\bar{X}$	SD	$\bar{X}$	SD
8	48	26.63	4.15	129.90	5.80
9	46	27.13	4.64	131.64	6.33
10	42	31.87	5.92	138.61	6.09
11	48	32.48	6.45	140.83	6.62
12	45	39.57	6.54	148.83	12.91
13	48	39.82	6.93	152.41	8.15
14	38	45.63	4.94	160.43	6.94
15	50	52.60	7.85	165.56	6.82

Table 2: Nutritional status of school-going Tripuri tribal boys of Agartala, Tripura

Age (in years)	Stunting (height <3 rd percentile)		Thinness (BMI <3 rd percentile)		Overweight (BMI >85 th percentile)	
	n	%	n	%	n	%
8	0	00.00	12	25.00	5	12.50
9	4	08.70	6	13.04	2	04.35
10	2	04.76	6	14.29	8	19.05
11	0	00.00	8	16.67	4	08.33
12	3	06.67	3	06.67	3	06.67
13	8	20.83	14	29.17	0	00.00
14	6	15.79	6	15.79	0	00.00
15	5	10.00	10	20.00	0	00.00
All	28	07.67	65	17.81	22	06.03

(n=365)

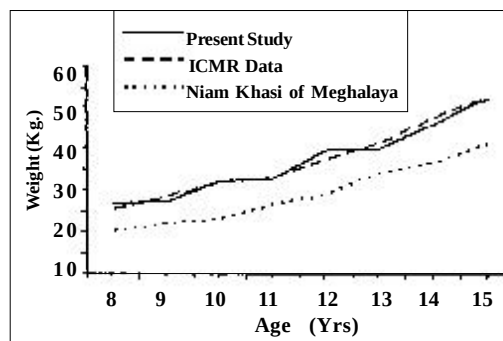


Fig. 1. A plot representing the comparison of mean weights (kg) of Tripuri boys ranging in age from 8 to 15 years with other studies

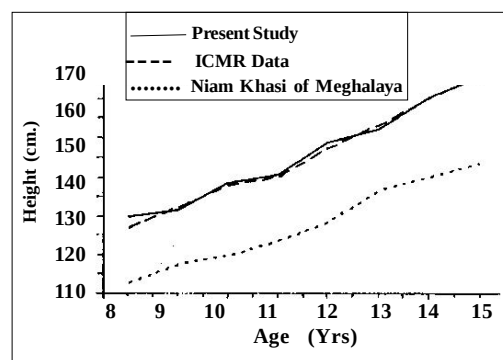


Fig. 2. A plot representing the comparison of mean heights (cm) of Tripuri boys ranging in age from 8 to 15 years with other studies

The increase in body height was highest between 13-14 years (8.22 cm) followed by 9-10 years (6.97). Total increment between 8 and 15 years was 35.66 cm. Prevalence of stunting, thinness and overweight of Tripuri boys are represented in Table 2. The overall prevalence of stunting, thinness and overweight, according to WHO classification, were 7.67%, 17.81% and 6.03% respectively. Maximum level of stunting and thinness were observed at the age of 13 and the values are 20.83% and 29.17% respectively.

Figure 1 and 2 present the comparison of mean values of weight and height of Tripuri boys ranging in age from 8 to 15 years with Indian Council of Medical Research (ICMR 1989) data and the data available on urban Niam Khasi of Shillong, the capital city of Meghalaya (Khongsdier et al. 2003). The results show that the mean values of Tripuri

boys are comparable with ICMR reference data and it is also observed that the urban Tripuri boys are heavier and taller than the Khasi boys. However, future study including more number of subjects across the age groups would provide clearer picture regarding the nutritional status and growth dynamics of the study population.

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