

Short communication**Prevalence of thinness among rural adolescent Bengali school girls of North Tripura**

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Correspondence Address: * Smt. Shilpi Saha, Department of Human Physiology, Tripura University (A Central University), Suryamaninagar - 799130, Tripura, India.**Abstract**

The present cross-sectional study was conducted to evaluate the prevalence of thinness among 1040 school-going Bengali girls ranging in age 10-14 years of North Tripura. Height, weight was taken and body mass index (BMI) was calculated. The overall prevalence of thinness was 52.98%. Age specific overall thinness was found to be higher in 14 years (66.54%) of age, where lower incidences were observed in 12 years (42.70%) of age. This study shows that undernutrition (thinness) among the adolescent indicating a major public health problem. An intensive and comprehensive approach is required to improve their nutritional status.

Keywords: Adolescent, body mass index, thinness, Tripura

Adolescence is a time of rapid growth and often designated as a transitional stage between childhood and adulthood along with increased need for specific nutrients and energy (Malina and Bouchard 1991). Nutritional problem of adolescent girls are common throughout the developing countries in Asia. Adolescent girls form an important vulnerable segment of population and constitute about one tenth of Indian population (Malhotra and Jain 2007). The nutritional status of the adolescent girls, the future mothers, bear special significance as they contribute significantly to the nutritional status of the community.

Thinness can be a marker of malnutrition although thin children are not necessarily undernourished. Generally, childhood under nutrition is assessed by stunting (low height for age), underweight (low weight for age)

or wasting (low weight for height) following different internationally and regionally recommended standards. Body mass index (BMI) is an inexpensive and noninvasive measure that has been extensively utilized to assess the nutritional status of adults and thinness in adolescent (WHO 1995). Very recently, international cut-offs have been proposed to assess thinness (BMI for age) among children in the age range of 2-18 years (Cole et al 2007). Information on early adolescent girls is scanty (Chatterjee et al 1991; Adak et al 2002; Benerjee et al 2005) and there are no available data on BMI distribution and BMI based nutritional status of rural Bengali girls of Tripura. In view of this context, the present investigation has been undertaken to evaluate the incidence of thinness among rural adolescent girls of Tripura.

Table 1: Age-wise subject distribution, BMI mean \pm SD and different grades of thinness among the girls.

Age (years)	n	BMI (Mean \pm SD)	Prevalence of different grades of thinness			Overall Thinness	Normal
			Grade III	Grade II	Grade I		
10	211	14.87 \pm 1.85	14(6.64)	26(12.32)	51(24.17)	91(43.12)	116(54.98)
11	167	15.56 \pm 2.16	11(6.59)	23(13.77)	47(28.14)	81(48.50)	82(49.10)
12	185	16.50 \pm 2.78	15(8.11)	26(14.05)	38(20.54)	79(42.70)	103(55.68)
13	220	17.38 \pm 3.34	24(10.91)	38(17.27)	67(30.45)	129(58.64)	86(39.09)
14	257	17.51 \pm 3.44	42(16.34)	71(27.63)	58(22.57)	171(66.54)	83(32.29)
Total	1040	16.36 \pm 1.14	106(10.18)	184(17.69)	261(25.10)	551(52.98)	470(45.19)

Figures in parentheses indicate percentages.

The subjects for the present cross-sectional study were selected from the schools of North Tripura district. A total of 1040 Bengali girls aged 10-14 years were included. Age of each subject was verified from school records. Permission was obtained from the school authorities prior to the commencement of the study. The anthropometric measurements of height and weight were taken using standard techniques (Weiner and Lourie 1991) and body mass index was computed using the standard equation: BMI = Weight (kg) / Height² (m²). The prevalence of thinness was assessed following the international BMI cut off points proposed by Cole et al 2007. The BMI values were used to determine the definite grades of thinness (Grade -III: severe, Grade-II: moderate, Grade-I: mild).

The distribution of sample, mean \pm SD of BMI and prevalence of thinness are represented in Table 1. There was a consistent increasing trend in mean BMI with age. The overall prevalence of thinness was 52.98%. Age specific overall thinness was found to be higher in 14 years (66.54%) of age, where lower incidences were observed in 12 years (42.70%) of age. The prevalence of thinness ranged from 6.59% to 30.45%. It was observed that thinness was more prevalent among 13-14 years of age.

There was a slight decreasing trend in the rate of thinness from 11 years (43.12%) to 13 years (42.70%) among subjects. This study provides evidence of prevalence of under nutrition among adolescent girls in this area.

The results of the present investigation will be useful for policy makers in their endeavor to formulate various developmental and health care programmes. Nutritional intervention is necessary to ameliorate the nutritional status among the studied adolescents.

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Conflict of interest: None

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