

## **Can mid-upper arm circumference be an alternative to body mass index in assessing nutritional status? A study on a group of adolescent Bengali girls from West Bengal**

SHREYASI ROY AND JAYDIP SEN

*Department of Anthropology, University of North Bengal, Darjeeling-734013, West Bengal*

**Abstract:** Body Mass Index (BMI) is widely accepted as an indicator of nutritional status among adolescents. Despite being devoid of widely-accepted cut-offs, the Mid-Upper Arm Circumference (MUAC) is also recently gaining importance in assessing nutritional status among the aforementioned group. The present study seeks to answer the question as to how far MUAC is reliable for this sort of assessment as compared with BMI in assessing nutritional status of adolescent girls. The study was conducted among 301 Bengali Hindu Caste Population school-going adolescent girls (aged 11-14 years) residing in the sub-divisional town of Siliguri, District of Darjeeling, West Bengal, India. The girls were the students of one school located under Siliguri sub-division of the area. Height, weight and MUAC were measured using standard procedures. The BMI was accordingly calculated using the standard equation of the World Health Organization. The data obtained was tabulated to elucidate age-wise descriptive statistics. We used MUAC as a screening tool for undernourishment. The overall mean MUAC among the girls was observed to be  $20.97 \pm 3.04$  cm while the mean BMI among them was  $18.23 \pm 3.39$  kg/m<sup>2</sup>. It was observed that 21.93% and 26.25% of the participants were undernourished according to MUAC and BMI cut off values respectively. Evaluation of the screening test revealed that MUAC possessed a sensitivity of 62.02% and a specificity of 92.34%. The linear relationship between BMI and MUAC tended to be positive and strongly correlated ( $r=0.849$ ,  $p<0.05$ ,  $r^2=0.721$ ). The findings can pave the way for an understanding of the suitability of MUAC as an indicator of nutritional status among adolescent girls. However, more studies are required to confirm its reliability over BMI.

*Key words :* BMI, MUAC, adolescent girls, Bengali, West Bengal.