Relationship Between Anthropometric Measurements and Body Composition Among Santal Girls Aged Between 6-18 Years of Galudih, Jharkhand, India

Diptendu Chatterjee, Jyoti Ratan Ghosh, Sudeshna Chanda and Arup Ratan Bandyopadhyay

Anthropometry and Human Genetics Laboratory, Department of Anthropology, University of Calcutta, 35, Ballygunge Circular Road, Kolkata 700 019, West Bengal, India

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ABSTRACT A cross sectional study of 116 Santal girls was undertaken to compare the relationship of biceps and triceps skinfolds, waist, hip and mid upper arm circumferences, waist-hip ratio and conicity index with three body composition variables; percentage of body fat, fat mass and fat free mass of the anthropometric characteristics. Waist circumference displayed the strongest correlations (p<0.001) with present body fat (r=0.85) and fat mass (r=0.86). Waist-hip ratio did not significant correlation with any measure of body composition. The correlation of conicity index with body composition measures was intermediate between those of waist circumference and waist-hip ratio. Results also revealed that the greatest amount of variation of percentage of body fat (73.1%) and fat mass (75.5%) was explained by waist circumference. In conclusion the present study showed that waist circumference is much more strongly associated with body fat than other anthropometric measures including waist-hip ratio and conicity index. Thus the use of waist circumference instead of waist-hip ratio or conicity index could be advantageous in epidemiological and clinical studies which deals with the relationship of central adiposity with percentage of body fat and fat mass.