

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