



### ASSESSMENT OF BODY COMPOSITION OF ADOLESCENTS IN COLOMBO DISTRICT, SRI LANKA: COMPARISON OF SELECTED ASSESSMENT TOOLS OF BODY COMPOSITION

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Childhood obesity is one of the most serious public health challenges of the 21<sup>st</sup> century. The aim of the study was determine prevalence of overweight and obesity in adolescent aged 12 – 16 years in Colombo District and to assess the body composition of the children. A cross-sectional study was conducted on 1374 adolescents from 25 schools in Colombo District selected by stratified random cluster sampling. Anthropometric measurements were measured as described by the WHO (1995). Body mass and percentage of total body fat (%BF) derived from by Bioelectrical Impedance analysis (BIA) and Skinfold thickness (SFT) were classified according to the equation by Slaughter et al. Definitions of thinness, overweight, and obesity among children were based on WHO Z scores of BMI for age (SD under -2 for thinness, above +1 for overweight, and above +2 for obesity). The percentage of BF derived from the SFT and BIA was classified according to the Sex- specific centile charts for percentage of fat (2<sup>nd</sup>, 85<sup>th</sup> and 95<sup>th</sup> centiles for under fat, over fat and obese respectively), developed by McCarthy et al. Of the total sample 50.3 % (690) were girls. According to age specific BMI Z score, 8% were obese and 17% were overweight, while 14% were over-fat and 5.4% were obese according to SFT revealed 13.3% and 10.3% of over fatness and obesity respectively. Results found a positive correlation between BMI and SFT ( $P < 0.001$ ,  $r = 0.0.818$ ), between BMI and BIA ( $P < 0.001$ ,  $r = 0.730$ ), and BIA and SFT ( $P < 0.001$ ,  $r = 0.761$ ). The current study revealed markedly increased prevalence of overweight and obesity in Sri Lankan adolescents during past few years. Since the consequences associated with obesity are mainly due to the excess fat mass the better monitoring tool has to directly assess the adiposity. Therefore, obesity has to be diagnosed on a simple and accurate method of assessing %BF. These two %BF measurement techniques (BIA and SFT) are adequate techniques for measuring adiposity in children.

**Keywords:** *Adolescents, Obesity, body composition.*

