

OP 8: COMPARISON OF BODY FAT ESTIMATED BY SKIN FOLD THICKNESS AND BIOELECTRICAL IMPEDANCE AND CORRELATION WITH OBESITY INDICATORS IN STUDENTS AT FACULTY OF MEDICINE, JAFFNA

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Introduction: Measurement of body fat content (BF) is an important assessment in clinical and community settings because of increase in non-communicable diseases. Direct measurement of BF can only be undertaken for laboratory investigations. Clinical and field measurements were done by measuring skin fold thickness (SF) in the past and this method is subject to considerable inconvenience and time consuming. Bioelectrical Impedance Analysis (BIA) is a recently introduced method which is very convenient and quick.

Objective: The aim of this study was to compare the BF estimated by SF and by BIA and also to correlate them with other obesity indicators.

Methodology: A laboratory based cross sectional study was carried out in 64 (30 males, 34 females) healthy participants aged 20-24 years: all were Sri Lankan Tamils. Height, weight, waist circumference (WC) and hip circumference (HC) were measured. BMI, Waist Hip Ratio (WHR) and Waist Height Ratio (WHR) were calculated. SF was measured with Harpenden skin fold calipers in four sites (biceps, triceps, supra iliac and subscapular) and BF was estimated using the normogram. BF by BIA was estimated using 'In body 230' (Biospace Co., Ltd., Seoul, KOREA).

Results: Mean \pm SD of BF estimated by SF and BIA were 17.3 ± 5.6 % and 20.1 ± 4.8 % in males ($p < 0.05$) and the respective values were 29.1 ± 4.9 %, 30.6 ± 7.7 % ($p > 0.05$) in females. The correlations between BF estimated by both methods in males and females were 0.863 and 0.772 ($p < 0.05$) respectively.

Conclusion: The difference between BF estimated by both methods in females was not statistically significant but the difference in males was only about 3% but statistically significant. Both methods correlate with obesity indicators in males and females but better correlations in females. Therefore, the impedance method is acceptable.