# ANTHROPOMETRY, LIPD PROFILE AND GLUCOSE METABOLISM AMONG OBESE AND NORMAL WEIGHT ADOLESCENTS IN COLOMBO DISTRICT

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**Abstract**

Obesity is a complex, multifactorial condition influenced by genetic and non-genetic factors. The current study assessed anthropometry, lipid profile and parameters of glucose metabolism among obese and normal-weight adolescents in Colombo District. Obese or overweight children (n=121) and healthy normal-weight children (n= 263) aged 10 to 16 years were recruited from 13 Divisional Secretariat divisions in Colombo District after informed written consent. Categorisation into overweight and obesity were based on WHO Z scores of BMI for age (SD above +1 for overweight, and above +2 for obesity). Anthropometric measurements (weight, height, waist circumference, hip circumference) were done according to WHO guidelines. Body fat percentage (BF%) was obtained from Bioelectrical Impedance Analysis (BIA). Total Cholesterol (TC), HDL Cholesterol (HDL- C), Triglycerides (TG) and Fasting Blood Sugar (FBS) were analysed on a fully automated clinical chemistry analyser. Fasting Insulin was measured by Enzyme-Linked Immunosorbent Assay (ELISA). Independent sample t-test was used to compare anthropometric and biochemical parameters of obese and normal weight. A probability of $p < 0.05$ was considered as statistically significant. The mean (SD) weight of the obese was 55.70 kg (14.82) and 41.63kg (7.88) in normal-weight adolescents. Other anthropometric measurements including BMI for age z score, BMI, waist circumference, hip circumference, waist to hip ratio and waist to height ratio were significantly high among obese ($p < 0.001$). The anthropometric characteristics such as weight, BMI for age z score, BMI, waist circumference, hip circumference, waist to hip ratio and waist to height ratio were significantly high among obese ($p < 0.001$). TC, TG – C, LDL – C, fasting insulin and HOMA IR were significantly high ($p = 0.000$) among obese compared to normal-weight adolescents. HDL – C was significantly lower ($p < 0.001$) among obese.

***Keywords:*** adolescents, obesity, derangements in lipid and glucose metabolism

# Proceedings

## 6th International Conference on Multidisciplinary Approaches -2019

*"Sustainability, Ethics & Governance through Multidisciplinary Research"*

**Organized by**
**Faculty of Graduate Studies**
**University of Sri Jayewardenepura**
**Nugegoda, Sri Lanka**

**26th & 27th November 2019**