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## Body fat percentage, BMI and skinfold thickness among medical students in Sabah, Malaysia

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**Background:** Nutrition is a critical part of human health and development. However, overweight and obesity prevalence are rising worldwide, with associated diabetes, cardiovascular diseases and other diet-related conditions. Body Mass Index (BMI) is an index of weight-for-height that is commonly used to classify overweight and obesity in adults. The skin-fold measurement method is the most widely used body fat composition testing method for assessing body fat percentage.

**Objective:** The objective of the study was to measure the body weight and body fat of medical students of Sabah, Malaysia by using different types of nutritional assessment methods.

**Methodology:** A cross-sectional study among the selected 2nd year medical students of School of Medicine, University Malaysia Sabah was conducted using different types of nutritional assessment.

**Findings & Discussion:** The average BMI and mean body fat percentage measured by body fat analyzer of the respondents were  $21.95 \pm 0.59$  kg/m<sup>2</sup> and  $16.98 \pm 1.37\%$ , respectively. The mean body fat percentages calculated by different skinfold thickness were: Abdominal-  $24.13 \pm 1.11\%$ , supra-iliac- $20.35 \pm 1.35\%$ , subscapular- $21.83 \pm 1.01\%$  and alternative three-site  $19.46 \pm 1.02\%$ . In reliability testing, results are variable between male and female-internal consistency of the alternative three-sites skinfold calculation for body fat percentage showed male (excellent) and female (acceptable) and skinfold reading for body fat percentage for triceps, abdomen, sub-scapular and supra-iliac showed male (good) and female (poor to acceptable). According to the Malaysia Obesity Classification, 10 students' BMI was classified into underweight (male 10%, female 21%), normal weight (male 57%, female 63%), pre-obese/overweight (male 24%, female 11%) and obese (male 10%, female 5%).

**Conclusion:** Our findings could be used in obesity awareness promotion among Malaysian youth. However, further investigation about the determinants of obesity and body fat, including age, sex, race, nutrition and changes over time is needed.

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