JCHS
Journal of Clinical and Health Sciences
#2
2026

SUPPLEMENTARY ISSUE

Malaysian Obesity Society
MYOS

2ND NATIONAL OBESITY SCIENTIFIC CONFERENCE

ABSTRACT BOOK

11th - 12th April 2026
Connexion Conference & Event Centre,
Kuala Lumpur, Malaysia

Theme
Obesity as a Treatable Chronic Disease: Science, Strategy, and Success

Issue **September** 2026 | Volume **11** Issue **02 (Supplementary)**
eISSN 0127-984x
jchs-medicine.uitm.edu.my
Universiti Teknologi MARA

Journal of Clinical and Health Sciences, Vol 11 Issue 2(Supplementary) 2026
The 2nd Malaysian Obesity Society (MYOS) National Obesity Scientific Meeting (NOSC)
Obesity as a Treatable Chronic Disease: Science, Strategy and Success, 11th – 12th April 2026
https://doi.org/10.24191/jchs.v11i2.13578

PP-5

Limitations of BMI in Characterising Obesity Phenotypes: Evidence from a Body Composition Analysis

Nur Azlin Zainal Abidin[1], Fazliana Mansor[1], Liyana Ahmad Zamri[1], Farah Huda Mohkiar[1], You Zhuan Tan[1], Noorizatul Syahira Yusaini[1], Nur Iffah Mat Hasan[1], Stephanie Frisca Jaini[1], Siti Azrinnah Abd Azar[1], Siti Mastura Abdul Aziz[1], Siti Norfizah Mohd Shaher[1], Poh Yue Tsen[2], Shu Yu Lim[2,3,4], Gee Tikfu[2,3,4]

[1]Nutrition, Metabolism & Cardiovascular Research Centre, Institute for Medical Research, National Institute of Health, Ministry of Health Malaysia
[2]Sunway Medical Centre, Bandar Sunway, Petaling Jaya, Selangor
[3]iHeal Medical Centre, Menara IGB, Mid Valley City, Kuala Lumpur
[4]Sunway Velocity Medical Centre, Sunway Velocity, Kuala Lumpur

Corresponding Author email: nurazlin.za@moh.gov.my

Introduction:
Obesity is commonly classified using body mass index (BMI), yet it does not reflect body composition; individuals with similar BMI may differ in fat and muscle distribution, limiting its ability to characterize obesity phenotypes. Therefore, this study aimed to compare adiposity and metabolic characteristics between participants with and without the sarcopenic obesity phenotype (SOP).

Methods:
This study reports baseline analysis of a multicentre observational cohort of patients with obesity undergoing metabolic surgery at private centres in Klang Valley. Body composition components including visceral fat area (VFA), percentage body fat (PBF), skeletal muscle mass (SMM) were measured using a bioelectrical impedance analysis (BIA). SOP was defined as obesity (BMI $\geq$ 27.5 kg/m²) combined with low SMM, determined by the sex- specific lowest quartile of the SMM index within the cohort. Differences between groups were analysed using the Mann–Whitney U test.

Results:
This study involved 72 female participants with a mean age of 39.64 years (SD 7.62); 19.4% (n = 14) met the criteria for the SOP phenotype. Participants with SOP had significantly lower body weight and BMI compared to the non-SOP group (79.95 kg [4.70-85.15] vs 101.00 kg [88.00 -113.90]; 32.12 kg/m² [31.42-33.74] vs 38.94 kg/m² [33.57-46.03]; both p <0.001). Despite these significant differences in body size, no statistically significant differences were observed in adiposity or metabolic markers. Specifically, the VFA (p = 0.120), PBF (p = 0.155), and HbA1c levels (p = 0.806) were comparable between both groups.

Conclusion:
In this cohort, women with the SOP phenotype showed similar adiposity and glycaemic status despite lower body size, highlighting BMI alone may not adequately characterise metabolic risk in obesity phenotypes.