



Nur Syakirah Arissa binti Mohd Salleh, Wee Bee Suan  
School of Nutrition & Dietetics, Faculty of Health Sciences,  
Universiti Sultan Zainal Abidin (UniSZA)

## Introduction

Cardiovascular disease (CVD) is one of the non-communicable diseases rising steadily over the years in Asia, especially in our country. National Cardiovascular Disease- Acute Coronary Syndrome (NCVD-ACS) Registry has also shown that Malaysians are developing CVDs at a younger age compared to the neighboring countries. Several risk factors are identified, including body composition and lipid profiles. Thus, the main objective of this study was to determine the association between body composition and lipid profiles among UniSZA students aged 18 to 19 years old in Kuala Terengganu.

## Methodology

Anthropometric measurements comprised weight, height, and waist circumference (WC) while body composition was determined through bioelectrical impedance analysis (BIA). Triglycerides (TG), high-density lipoprotein (HDL-C), low-density lipoprotein (LDL-C), and total cholesterol (TC) were determined from overnight fasting blood samples.

## Results & Discussion

Subjects comprised 89 students aged 18.6 (0.6) years old, most of them were females (73.0%) and of Malay ethnicity.

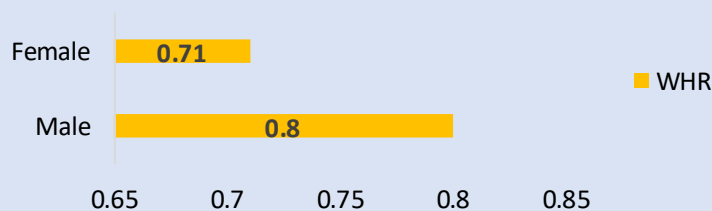


Figure 1: Students' Waist-Hip Ratio (WHR)

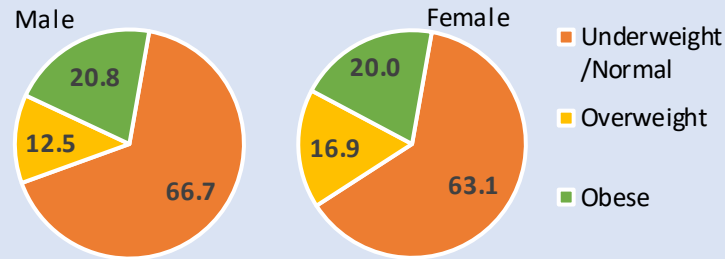


Figure 2: Students' categorised BMI (%)

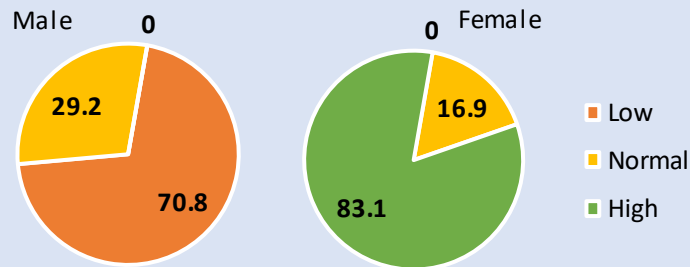


Figure 3: Students' categorised Fat Mass % (%)

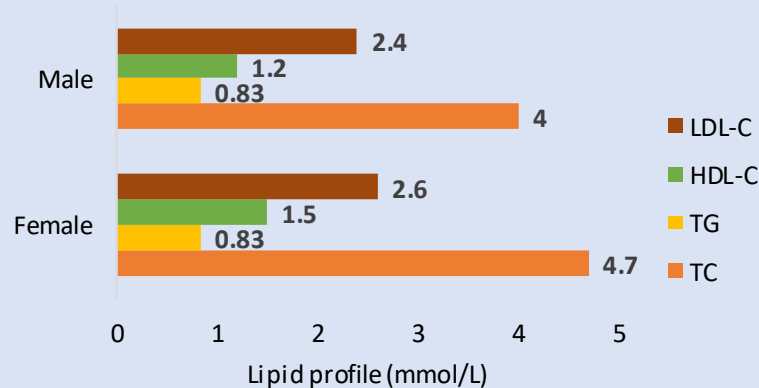


Figure 4: Students' Blood Lipid Profile

Table 1: Association between FM% and TC

FM% Category	TC Category		OR (95% CI)	p
	Normal	High		
Low/Normal	33 (45.8)	2 (11.8)	6.35	0.01
High	39 (54.2)	15 (88.2)	(1.35, 29.80)	

Table 2: Association between BMI and HDL-C

BMI Category	HDL-C Category		OR (95% CI)	p
	Low	Normal		
Uw/Normal	0 (0.0)	57 (66.3)	1.10	0.04
Ow/Ob	3 (100.0)	29 (33.7)	(0.99, 1.23)	

\*Pearson Chi-Square Analysis was applied

\*\* Uw: Underweight; Ow: Overweight; Ob: Obese

Lipid profiles analysis revealed that male students had significantly lower TC [4.0 (1.0) mmol/L versus (4.7 (1.2) mmol/L), ( $p < 0.001$ )], and HDL-C [(1.2(0.4) mmol/L) versus (1.5(0.4) mmol/L), ( $p < 0.001$ )] compared to female students. Pearson's Chi-Square test found that there was a significant association between FM% and TC category ( $\chi^2 (1) = 6.69$ ,  $p < 0.05$ ), and BMI and HDL-C category ( $\chi^2 (1) = 1.10$ ,  $p < 0.05$ ).

## Conclusions

In conclusion, there were significant associations between body composition and lipid profiles. Thus, appropriate intervention programs should be planned to increase awareness and monitor students' health status in order to improve and maintain healthy lipid profiles.