

Metabolically unhealthy obesity phenotypes and the Risk of Double Burden of Malnutrition

Background: Whereas deficiency in food intake has contributed to the under-nutrition problem, a lack of dietary diversity also has a demonstrated main role in increasing over-nutrition. Previous study demonstrated that obese people with metabolically unhealthy phenotype are more likely to get chronic disease and nutrient deficiency. So, we design current study to determine the nutritional status in the Healthy/Unhealthy phenotypes of overweight/obese Iranian women.

Methods: This cross-sectional study was conducted on 374 overweight and obese women 18–50 years ($BMI \geq 25$). Anthropometric measurements were assessed for all cases. The MH phenotype was defined according to the Karelis criteria. Dietary intake were assessed using a valid and reliable, FFQ with 147 items. The body composition was assessed for all cases by BIA. Serum HDL –C, LDL –C, total Chol, TG, FBS, insulin, hs-CRP levels were quantified by ELISA method.

Result: A total subjects including 102 MH (27.27 %) and 272 MUH individuals (72.72%) were included in this study. Percentage of participant MH in categorical of BMI: 25–30 (kg/m^2), 30–35 (kg/m^2) and >35 (kg/m^2) was 77.2%, 20.3% and 2.5%, respectively. Considering nutritional status and body composition, our result demonstrated that there was statistically significant difference even after control confounder factors, regarding BMI ($P < 0.0001$), WC ($P < 0.0001$), WHR ($P < 0.0001$) and NC ($P < 0.0001$), BF % ($P = 0.004$), body fat mass (BFM) ($P < 0.0001$), FFM ($P = 0.005$), between two groups. In particular, MUH subjects had respectively 1.04, 1.14 and 1.05 fold higher BF % and BFM and FFM in comparison with MH participant. Our results also demonstrated that decrease of FFM are more prevalence in participant with inadequate intake of vitamin B12 and lutein.

Conclusion: Overall, these findings underscore the importance of nutritional status in the alarming prevalence of MUH phenotype in developing countries. Identifying the association between nutritional status and MUH phenotype may open new insight considering double burden of malnutrition mechanism.

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