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Diagnostic accuracy of body mass index (BMI) to identify obesity in Saudi adult population in a community based setting

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Background & Aim: The prevalence of obesity in Saudi Arabia is high. This is the first Saudi study aiming to investigate the accuracy of body mass index (BMI) to diagnose obesity among the Saudi population using body fat percentage as the gold standard. Accurate obesity diagnosis is important for the management of patients who are at most risk of obesity and its complications.

Materials & Methods: This is a cross-sectional study including a calculated sample size of 942 subjects who visited the Family Medicine clinics at KFSH & RC from January 2005 to March 2016 and did DEXA scan. DEXA scan was used to estimate body fat percentage (BF %). The diagnostic accuracy of BMI was assessed by using the World Health Organization and the American Association of Clinical Endocrinologists and American College of Endocrinology reference standard for obesity of BF%>25% in men and >35% for women.

Results: BMI-defined obesity (≥30 kg/m^2) was present in 28.7% of men and 53.1% of women while BF% defined obesity was present in 83.9% and 97.3% of males and females respectively which correspond to BMI 24. Even if we consider the highest acceptable range of BF% (33% for men and 43% for women) the highest acceptable BMI cut-off to diagnose obesity should not exceed 27 for both genders.

Conclusion: Despite the use of the highest acceptable range of BF%, the diagnostic accuracy of BMI 30 to diagnose obesity is limited. This emphasize the need to lower the BMI cut-off used for obesity diagnose among the Saudi population.

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