Abstract

Background and aims: Childhood obesity is increasing dramatically in last decades. To evaluate the usefulness of body mass index (BMI), skinfold thickness (ST), waist circumference (WC), and foot to foot bioelectrical impedance (BIA-FF) for screening for obesity in mixed race population, using the tetrapolar bioelectrical impedance (BIA-T) technique as reference method. Methods and results: A crosssectional based population study was performed in the city of Ouro Preto, Brazil, in 2006. Schoolchildren aged 6-15 years (n = 788) was randomly selected according to age and sex stratified by the proportion of students in each schools of the city. Nonparametric receiver operating characteristic (ROC) analysis was used to define the sensitivity and specificity for each method studied using the tetrapolar method as reference. The BMI and the BIA-FF were the most suitable for adiposity screening in prepubertal and pubertal stages because they present a better balance between sensitivity and specificity, and smaller misclassification. For postpubertal boys, the BF-ST-D was the best body fat assessment method. Conclusion: The results suggest that BIA-FF and BMI are choice methods for obesity screening in mixed population and that the method choice for body fat screening must be done according to sexual maturity of boys and girls. The present study demonstrates the need to perform studies in wider mixed race population to determine anthropometric parameters and to examine the predictive ability of methods and cutoffs here elucidated in the development of obesity.

Keywords

Obesity, Bioelectrical impedance, Sensibility, Specificity, Schoolchildren.