Abstract

Objectives: to assess the accuracy of the two most used anthropometric criteria: Must and Cole to diagnose obesity in adolescence comparing with percentage of fat mass determined by DXA. Methodology: cross-sectional study with 418 adolescents (52.4% males) attending a private school in São Paulo/Brazil. Anthropometric measures of height and weight were taken and BMI was calculated. Analysis of body composition was performed using the DXA to detect percentage of fat mass. Using the method proposed by Ellis & Wong (ERM) two sex-specific linear regression models of fat percentage for age in years were fitted. The comparison between the methods was carried out through the analyses of specificity and sensitivity with two residual percentiles as cutoff points (ERM85th and ERM 95th) as standards. A logistic model was fitted to estimate the probability curves of obesity classification. Results: the comparison of the two classic criteria for the diagnosis of obesity with the ERM85th and ERM 95th, yields for females the same sensitivities of 0.50 and 0.20 for both criteria. For males sensitivities for ERM 85th were 0.61 (Must) and 0.49 (Cole); while for ERM95th the sensitivities were 0.81 (Must) and 0.64 (Cole). Therefore, there are high probabilities that those criteria diagnose adolescents as obese, when actually they are not. Conclusion: the Must and Cole criteria were similar and present flaws for the diagnosis of obesity. In clinical practice and field studies anthropometric criteria should be evaluated as to the diagnostic accuracy along with other clinical parameters and, when feasible, the analysis of fatness percentage. However, the anthropometric criteria evaluated are efficient in the identification of nonobese adolescent in the two cutoff points considered.

Keywords

Adolescence obesity, Diagnosis, BMI, Fat mass, DXA.