Obesity and physical fitness among children (6-10 years) from Azores islands (Portugal)

V.P. Lopes, J.A.R. Maia
Polytechnic Institute of Bragança and Faculty of Sport Sciences and Physical Education; University of Porto, Portugal

1. Introduction

The prevalence of obesity and of lower levels of physical fitness seems to be a major problem for the public health. The WHO designates obesity as one of the most important public health threats because of the significant impact of chronic conditions associated with obesity. Physical fitness could act as a protective factor of various diseases, e.g. cardiovascular diseases.

The purposes of this study are: to determine the prevalence of obesity among school children (6-10 years old) from Azores islands (Portugal) by means of body mass index (BMI), to identify the levels of health related physical fitness (HPF), and to investigate the difference between obese and non-obese in HPF.

2. Material and Methods

2.1 Sample

The sample comprises 3742 children of both genders between 6-10 years of age from Azores islands (Portugal), which is approximately 25% in each gender and age of the residents in each island.

2.2 Physical Fitness Evaluation

The children were evaluated in height and weight and then the BMI (weight in kilograms divided by the square of height in meters kg/m²) was calculated. To classify the children as obese or non-obese we used the cut values proposed by Cole et al. (2000). We calculated the percentage of children in each zone.

2.3 Obesity Evaluation

FITNESSGRAM is a health related physical fitness test battery. Subjects are compared not to each other, but to health fitness standards, i.e., the evaluation is related to the criterion. For each test item there are 3 zones: 0-needs improvement, 1-healthy fitness zone, 2-very good

2.4 Statistical Procedures

The difference between obese and non-obese in HPF was analysed with MANCOVA, with age as covariate.

3. Results

The ratios of success in tests of HPF both in boys and girls were low. In girls there was a substantial decrease of ratio of success between 6 and 10 years of age. In 10 year-old girls the global ratio of success was only 18%. In boys the ratios of success also had a tendency to diminish along age. In 10 years-old boys the global ratio of success was 39%.

The results of MANCOVA show that obese children of both genders have lower HPF levels than no obese children (girls: λ = 0.887; F(4, 1782) = 51.05; p < 0.001; boys: λ = 0.852; F(4, 1880) = 81.37; p < 0.001)

4. Conclusions

The failure in passing the rates of FITNESSGRAM tests was high. We found that the prevalence of obesity was between 10.9% and 13.7% for girls, and between 8.2% and 13% for boys.

5. References