

Body composition of secondary school children in Sri Lanka: a study to develop a set of morphological fitness reference values

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The overweight and obesity prevalence among children in Sri Lanka show different ranges according to provincial and gender variations. In recent years, the interest in physical fitness assessment in school children has increased in other countries, but in Sri Lanka it is still very low. There is a dearth of reference values of physical fitness including body mass index (BMI) for secondary school children in Sri Lanka. The objectives of this study were to contribute to the available knowledge concerning the assessment of body composition (Body Mass Index), identifying sex and age-related norms of body mass index of the secondary school children in Sri Lanka and to compare BMI values of Sri Lankan children with the relevant values of children in other countries.

A quantitative approach was used in this study. Physical fitness assessments were implemented to measure BMI of 1229 students (638 boys and 591 girls, aged between 11 years and 17 years), which was a randomly selected sample in the Kandy District. All the data were computed and analyzed to formulate test norms as percentile values, stratified by chronological age groups separately for boys and girls. All the calculations were performed using SPSS vs. 17 for windows.

The significant observation is that the BMI percentiles of P5, P10, P90 and P95 of the boys in the age groups 11, 12 and 13 are greater than those of the boys in the age group of 14 years. Reasons may be due to changes occurred in adolescent period. Except this unusual pattern, it is revealed that BMI percentiles of the boys and girls gradually increase according to the age over a period from 11 years of age to 17 years. According to the data the lowest P5 of boys' BMI is approximately 13 and the highest P5 is 17.4. Furthermore, the lowest P95 of boys BMI is approximately 18 and the highest P95 is approximately 22.6. Furthermore, the lowest P5 of girls BMI is approximately 14 and the highest P5 is approximately 17. Furthermore, the lowest P95 of girls BMI was found for the year 18 range and the highest P95 was found in 22.9 range.

It can be observed that although the BMI levels of Sri Lankan children (both boys and girls) are not in the range of 'Needs Improvement-Health Risk (NI-HR)' but in the range of 'Needs improvement'. They are in the margin of very lean level according to the USA norms. However, we cannot say BMI level of Sri Lankan boys and girls are not in a satisfactory level compared to USA standards. It should also be noted that since these figures are normative base values, such norms are identical only for a specific population.