

The relative age effect on physical fitness of school children

ABSTRACT

This study aims to investigate the existence of the relative age effect among school children in Perak, Malaysia. A total of 3143 boys and 2700 girls aged seven years old in Perak, Malaysia were involved in this study. Within each year group, four-quarter birth-month groups were formed. There are quarter 1 (Q1), school children born from January to March; Quarter 2 (Q2), from April to June; Quarter 3 (Q3), from July to September; Quarter 4 (Q4), from October to December. They underwent body weight and standing height measurements with fitness tests that included standing broad jump, sit and reach, hand wall toss, and 20-meter run. A one-way ANOVA test with a Tukey post hoc test was used to determine whether there were any significant differences between the birth quartiles and children's physical fitness. Present findings found anthropometrics, leg power, coordination, and speed are different significantly between birth-quartile groups in boys and girls school children. In summary, there is a relative age effect that contributes to children born early in the year having a physical and physiological advantage. There are naturally different levels of fitness depending on age. This information is useful for researchers, teachers, and education policymakers to consider the month of birth, both in terms of practicality and the impact of physical fitness assessment.