ANTHROPOMETRIC AND MOTOR DETERMINANTS OF ENDURANCE RUNNING IN PRE-ADOLESCENT AGE

Abstract

In this research, author endeavours to determine the extent of speed endurance (criterion) prediction, according to some anthropometric and motor variables (predictor). 174 male and female students (N=174), who are fourth grade of primary school in Valjevo, have been examined. Morphological characteristics have been examined using 14 standard anthropometric measures and motor ability with 6 battery tests, while speed endurance has been checked with the 3 minute running test. Multiple hierarchy analysis has been used for the statistical data processing. On the significance level (p<.05), achieved results show that predictor variables set among boys, with medium multiple correlation of R=.59, explains 21% of the criterion variability. Maximal positive direction of univariant statistically significant variable's correlation has following standardized non-zero regression variable coefficients: standing long jump, torso lifting and torso bending, while body mass has negative contribution to the criterion (β = -38, p < .01). Girl's multiple correlation coefficient has medium intensity (R=.53) and shows that predictor determinants evaluate criterion variance with the 19% on the level of statistical significance, which is less than 5%. The highest positive predictive value with the test for the functional abilities evaluation has following motor variables: tapping with a hand, standing long jump and chin ups endurance; while Beta coefficient of backward polygon predictor (β= -33, p< .03) has significant negative impact on aerobic endurance. Achieved results of multivariate regression model indicate to the fact that applied predictor sets of anthropometric and motor variables in pre-adolescent population, can reliably serve as a base for further longitudinal researches of anthropological fields. In this work is also debated about theoretical and practical implications of achieved findings.

Key words*: morphological characteristics, motor abilities, aerobic endurance, students*