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Relationship and influence of body mass index and skin folds on some motor abilities in 14 year old students

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In this paper, the correlation and impact of the body mass index (BMI) and some skin folds in the success of some motor skills have been investigated. The purpose of this paper is to establish the correlation and impact between BMI and skin folds as a predictive system and motor skills as a criterion system. The survey was conducted in a sample of 170 male entities aged 14 years ± 6 months, primary school students at "Bajram Shabani" and "Naim Frashëri" - Kumanovo. A total of 9 variables were used in the research, including one variable for BMI body mass index estimation, 4 variables for evaluating skin folds and 4 variables for assessing the motor space. Variable for body mass assessment is 1. BMI (body mass index), variables for evaluation of skin folds are 4 as follows: 2. ATLKR (arm skin folds), 3. ATLPU (pulp skin folds), 4. ATLKOF (thigh skin folds), 5. ATLBAR (abdominal skin folds), and motor space variables 4 in total as follows: 6. MKLV (standing high jump), 7. MPV (standing five-step jump), 8. MKGJV (standing long jump), and 9. MTV (standing triple jump). Based on the results obtained from the correlation analysis we can conclude that: out of 9 variables, 5 of which for anthropometric space evaluation and 4 variables for motor skills assessment, low level correlation between variables: BMI and MKLV, with negative value of -.187 * and ATLPU and MKLV variables, with negative value of -.247 **, high-level correlations between variables ATLKRA and ATLKOF with positive value of .835 ** and variables MPV and MTV, with positive value of .819 **. Based on the results obtained from the regressive analysis, whereas predictors there are 5 variables of anthropometric space, and as criterion there are 4 variables of the motor space, we can conclude that: between the predictive system and the criterion variable MKLV (standing high jump), there is a linkage of statistical significance, at a confidence level of 0,000. From the whole predictor system, the individual impact on motor ability has the variables: ATLKRA (arm skin folds), with a beta coefficient of -.621 and a confidence level of 0,000, and ATLBAR (abdominal skin folds) beta coefficient of .347 and confidence level of .004. Between the predictor system and the MPV criterion variable (standing five-step jump), there is a link of statistical significance, at a confidence level of 0,000. From the whole predictor system, individual impact on motor ability has the following variables: ATLKRA (arm skin folds), with a negative beta value of -.344 and a confidence level of 0.024. Between the predictor system and the MKGJV criterion variable (standing long jump), there is a link of statistical significance, at a confidence level of 0,000. From the whole predictor system, the individual impact on motor ability has the following variables: ATLKRA (arm skin folds), with a negative beta coefficient value of -.492 and a confidence level of 0,000. Between the prediction system and the MTV criterion variable (standing triple jump), there is a linkage of statistical significance at a confidence level of 0,000. From the whole predictor system, the individual impact on motor abilities has the variables: ATLKRA (arm skin folds), with a negative beta value of -.327 and a confidence level of 0.022. From this research we can conclude that the motor skills in this case of jumps that express the explosive strength of the lower limbs have low BMI level and skin folds, while statistical influence in the motor variables have only the ATLKRA variables (arm skin folds) and in one case an ATLBAR variable (abdominal skin folds), from which we can conclude that to have good results in jumps we should have as little as possible adipose (fat) tissue in the abdomen and arms and the same adipose (fat) tissue should be replaced with pure muscle mass.

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