

## SUMMARY

**Title:** The physical load on the body as a factor influencing perceptual cognitive functions.

**Objective:** The aim of this study is to determine the relationship between the size of the physical load and the visual-motor response time and the accuracy of the decision-making by junior soccer players.

**Methods:** The forty two respondents (in an average age of  $19 \pm 1.2$  years) participated in the study. It was the single factor quasiexperimental, multilevel and intragroup in which we tried to reveal the causal relationship between the visual-motor response time and the accuracy of the decision-making depending on the size of the previous physical load. We proposed a diagnostic instrument containing the video of the offensive game situations which would allow simultaneous evaluation of the visual-motor response time (using Dartfish software program) and the accuracy of the decision-making (through experts assessment).

**Results and discussion:** The diagnostic instrument contains sixteen video clips of the offensive game situations according to the highest degree of conformity of the panelists. I used polychoric correlation matrix to express dependencies between each game situation within each group comprising four video clips of the offensive game situations. The results of the matrix (range -0.437 to 0.306) confirmed the statistical independence ( $p < 0.05$ ) between individual items (game situations) within each group.

The results showed a significant „effect of size“ difference in the visual-motor response time after the administration of the model physical load with the dominant involvement of the aerobic metabolism in comparison to the value after the administration of the model physical load indicated by the intermittent character of the coefficient  $0.60^{\dagger}$  (medium difference) and the model physical load with the dominant involvement of the anaerobic metabolism indicated by a coefficient of  $0.67^{\dagger}$  (medium difference). We have also found out with the help of Friedman test's post hoc analysis, a statistically significant difference,  $p < 0.05$  (0.0015) in the visual-motor response time after the administration of the model movement workload with the dominant involvement of the aerobic metabolism ( $897.02 \pm 57.46$  ms) compared to values after the administration of the model physical load with the dominant involvement of the anaerobic metabolism ( $940.95 \pm 71.14$  ms). Among the other models of the physical load there was not a statistically significant ( $p < 0.05$ ) difference.

There has not been demonstrated statistically significant ( $p < 0.05$ ,  $p = 0.0897$ ) difference in the effectiveness of the accuracy of the decision-making between individual models of the physical load. The total average score ranged from ( $M e 2,5$ ) to ( $M e 2,75$ ). Respondents most frequently picked as the second most effective decision making "very good

decision making", expressed by value of 2 and the third most effective decision making "good decision making", expressed by value of 3.

**Keywords:** perceptual and cognitive skills, physical load, visual-motor response time, tactical decision-making.

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