Abstract

The Effects of Two Swimming Learning Programs on Children’s Psychophysiological Profile †

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Abstract: AIM: Salivary cortisol has been used in research for studying possible alterations in human mood after different types of exercise. Exercise intensity plays an important role in mood levels and salivary cortisol concentration. The purpose of the study was to find out if two swimming learning programs could affect the salivary cortisol concentration and the score of pleasure in children. MATERIAL & METHOD: Participants were 40 rookie swimmers, aged 9.0 ± 0.9 (mean ± SD). The children were divided into two groups, control (CG, n = 21) and experimental (EG, n = 19), who trained in a pool with a classic and an alternative swimming training program, respectively. Intervention duration was 8 weeks and the training took place 3 times per week. Measurements were taken in the 4th week, before and after a training session, when both groups provided 0.5 mL of saliva. Saliva samples were analyzed for cortisol through ELISA method. Before saliva sampling, the children answered a motivation questionnaire to find out the pleasure levels from participation in training. For the statistical analysis we used the Shapiro-Wilk test of normality, two-way ANOVA with repeated measures, and Mann-Whitney U test. Cortisol concentration and questionnaire scores were correlated through Spearman correlation analysis. The level of statistical significance was set at α = 0.05. RESULTS: Salivary cortisol concentrations decreased in both groups with exercise (p = 0.001). Additionally, EG had higher concentrations than CG (p = 0.007). CG had higher scores than EG in the motivation questionnaire (p = 0.001). Moreover, pleasure scores correlated significantly with cortisol concentrations in CG (r = 0.485, p = 0.04). CONCLUSIONS: Low-intensity swimming training targeting on fun lowers salivary cortisol concentration. The questionnaire revealed that young swimmers need the opportunity and time to understand that they are expressed through training to feel more pleasure with sport, especially in EG.

Keywords: children; pleasure; salivary cortisol; swimming learning

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