Abstract

Title: Effect of strengthening exercises on Biokinetic to swimming performance at 50 m crawl.

Objectives: The aim of this work is to find out whether a two-month movement intervention performed on a swimming simulator (Biokinetic) will affect the swimming performance of a 50 m crawl by FTVS students.

Methods: Five probands of the 2nd year of the follow-up study at Charles University FTVS participated in the research. The anthropometric data were obtained using the TANITA testing device. To determine the maximum endurance muscle strength of the upper limbs and other movement parameters, we used the Biokinetic device. In order to determine the maximum swimming performance, we carried out a swimming test for 50 m with the crawl technique. Interest activities were identified through a questionnaire. Data were analyzed by MS EXCEL and NCSS 2019.

Results: The results show, that the Biokinetic weight training exercises had a positive influence on swimming performance at a distance of 50 m crawl in swimming pool. In the analysis of the technique of performing motion shots on Biokinetic, we found an increase in the frame frequency, but a decrease in the overall path. The increased in frequency according to our findings results in a reduction of the total path of the motion cycles. All probands experienced an increase in watts per kg of weight. The mean power of the left hand shot increased compared to the right hand in 4 out of 5 probands. Although the right upper limb of all probands is dominant, it is interesting, that 2 probands show a higher power output in the left upper limb.

Keywords: Biokinetic, upper limb force, crawl technique