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Effects of Coordination and Plyometric Training on Running Economy and Other Biomotor Characteristics in Young Women Soccer Players

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The aim of this study is to investigate the impacts of coordination and plyometric exercises on running economy (RE) and biomotor skills which are peculiar to football in young aged girls. In the universe of the study girl football players of two different teams in league 2 are the experimental group (n=12) and control group (n=12). It was decided that experimental and control group girls' (aged; 14.1; 14.3), pre-last test values, in order are, (experimental group height; 164.7 cm / 164.9 cm., weight; 52.6 kg. / 52.4 kg. and control group height; 163.8 cm. / 163.8 cm kg; 56.2 kg. / 55.5 kg.) Control group continued their exercises in their clups. Experimental group, kept on determinated coordination and plyometric exercises additionally to their training, two times in a week that continues twelve weeks. In the beginning and at the end we applied laboratory tests (submaximal differential exercise test) and field tests (10-30 m speed test, vertical jump, leg strength tests, Yo-Yo intermittent recovery test level 1 (YYIRL1) and repeated sprint test (RST) to two groups. For statistical operations SPSS 14.0 package program was used. For pre-last test comparisons between groups we used independent test (Mann-Whitney U Test), to determine the relation between pre and last test values in the experimental and control group within themselves we used equivalent sample test (Wilcoxon Signed Ranks Test). Pearson Correlation Analysis was used to determine the relation between variables. In the evaluation of results, in relation to the RE we found statistical significant difference in experimental group 6.5 km/s (%-3) and 7.5 km/s (%-2.7), but there is no statistical significant difference in RE 8.5 km/s (%-2.3). However, in the control group, in the none of running speed, there is no statistical significant difference. In relation to biomotor skills positive statistical significant difference was found in experimental group standing long jump, 5 step jump, right one foot splash, step length, YYIRL1 distance traveled; but negative statistical significant difference was found in 10-30 m sprint and acceleration time, RST best sprint period. These results verify the study hypothesis which is "coordination and plyometric exercises effects RE development". In terms of sub-hypothesis results show that coordination and plyometric exercises support the development of biomotor skills except speed.

Key words: Running economy, female soccer, plyometric training, coordination, biomotor characteristics