ABSTRACT

Title: Evaluation and training of speed in strength and conditioning preparation of youth basketball players

Aims: The aim of this thesis was to validate effectivity of the training program which goal was to improve speed abilities of youth basketball players under 14 year old category during their competitive period. In the same time, I tried to evaluate how changes in selected anthropometric characteristics, practice attendance, game involvement and a length of participation in organized sport and basketball preparation influenced selected speed and agility manifestation.

Methods: This thesis uses experiment as its research method. Research sample including youth basketball players (n = 9; mean age 13.39 ± 0.22 years) completed six months long training intervention with elements for speed and general strength development. Players were tested before intervention, three months and six months after beginning of the intervention. Three performance tests were used: 20 m sprint, 15 m flying with 10 m run up and lane agility drill. Video recordings of 20 m sprint and 15 m flying tests were made to evaluate changes in technique of running. Changes and interrelationships of all measured parameters were evaluated in the six months period. Results of the research sample after the first three months of intervention were compared with results of the experimental group that underwent a training intervention as a part of my bachelors' thesis.

Results: Results analysis showed that the study group increased mean performance in 15 m flying test ($p < 0.01$), 20 m sprint ($p = 0.08$) and lane agility drill ($p > 0.05$) after completing the training intervention. Video analysis of running technique showed increased forward body lean ($p < 0.01$) and improved foot impact technique ($p = 0.07$) after six months of intervention. There wasn't any significant change of hip flexion angle in players. Research sample accomplished significant ($p < 0.05$) improvement of performance in 15 m flying after completing the first half of the training program compared to tested group from my bachelors' thesis. There was relationship between anthropometric characteristics and linear speed tests. Body

height of players correlated with tests 20 m sprint (r = − 0.54) and 15 m flying (r = − 0.49); body weight correlated with tests 20 m sprint (r = − 0.56) a 15 m flying (r = − 0.62); body fat percentage correlated with tests 20 m sprint (r = − 0.62) a 15 m flying (r = − 0.7); increase of body height correlated with improvement of performance in 20 m sprint (r = − 0.48); decrease of body fat percentage correlated with improvement of performance in 20 m sprint (r = 0.5) and 15 m flying (r = 0.55).

Key words: basketball, speed, acceleration, agility, running technique, training, strength and conditioning