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EFFECTS OF CONSTANT AND ACCOMMODATIVE RESISTANCE TRAINING ON STRENGTH, POWER AND MUSCLE SORENESS IN COLLEGIATE WRESTLERS

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Abstract

Resistance training with different methods is often used to increase strength, power and muscular hypertrophy in athletes, and importance of this kind of training in sport's performance is clear. The purpose of the present research was to study the effect of 8 weeks constant and accommodative resistance training on strength, power and muscle soreness in collegiate wrestlers. The subjects were included 14 wrestlers (age 21.78 ± 1.71 years, height 174.07 ± 5.88 cm and weight 68.02 ± 5.56 kg) with at least 3 years training experience (wrestling). Subjects were informed about the process of tests, and divided randomly into two groups named constant resistance and accommodative resistance groups (7 subjects per each group), and all the subjects did the pretest. After the preliminary measurement that includes height, weight, 3-site skinfolds, upper and lower body dynamic strength and upper and lower body power, both groups trained for 8 weeks (2 sessions per weeks) with 80 percent of their 1RM in bench press and squat with the same volume, and it also applied the specificity training principle during the exercise period. 20 percent of 1RM were added gently to the load of accommodative group with chain through the range of motion. This load addition continued until all chain links were lifted off from the ground. The balance of performance speed was being controlled by metronome in both groups. The results of t-test indicated that there was a significant increase in upper and lower body strength and upper and lower body power in both groups after 8 weeks resistance training ($p \leq 0.05$). The results of Independent t-test also showed significant differences in increasing upper and lower body strength, upper and lower body power and also muscle soreness in accommodative group than constant group ($p \leq 0.05$). The results of this study revealed that accommodative resistance method (compound of weight and chain) is more effective on increasing the strength and power in wrestlers than constant resistance method, although this method causes relatively more pain and soreness in muscles.

Keywords: Constant resistance, Variable resistance, Accommodation resistance, Dynamic constant external resistance.