

Comparison of plyometric and interval anaerobic trainings on strength, speed, agility and anaerobic power in karate athletes

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Nowadays, Sport sciences experts are seeking to use scientific achievements regarding athletes' conditioning in order to improve their performance in the national, international and Olympic events. In this regard, the use of effective training modules seem to be vital for championship sport. Thus, the aim of the present study was to compare the effects of two training methods namely plyometric and interval anaerobic trainings on strength, speed, agility and anaerobic power of karatekas. The present research was semi-experimental field study which was done on 20 elite guilan province karate athletes with average age of 19.5 ± 2.2 years, height of 177.88 ± 7.21 cm and weight of 77.6 ± 11.3 kg whom were randomly assigned into two groups, plyometric training (n=10) and interval anaerobic training (n=10). Training sessions was administered 3 times per week for 6 weeks. Physical performance including strength, speed, agility and anaerobic power (lactic and alactic) prior to the trainings and 48 h after the last training session were evaluated using 20m sprint, leg press, Illinois, RAST and Sargent jump tests, respectively. In this study, the paired-t test and independent-t test were used to compare pre to post training intragroup changes and intergroup differences, respectively. The findings showed that plyometric and interval anaerobic trainings resulted in improved ($P=0.001$ for 5m and $P=0.001$ and $P=0.011$ for 20m), strength ($P=0.005$ and $P=0.003$), agility ($P=0.001$) lactic anaerobic power ($P=0.009$ and $P=0.02$) and alactic anaerobic power ($P=0.001$). However, there is no significant difference between two groups in terms of study's variables ($P \leq 0.05$). Collectively, it can be noted that karate athletes do need high levels of physical fitness to improve their competitive performance. In this context, based on the results of the present study and given that strength, speed, agility and anaerobic power are of crucial importance for karatekas,

these athletes can take advantage of both plyometric and interval anaerobic trainings in order to enhance their specific physical fitness, and as a result, improve their competitive performance.

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