THE EFFECTS OF RAPID WEIGHT LOSS ON SOME MOTOR PERFORMANCE CHARACTERISTICS IN ELITE KARATE ATHLETES

Eray ŞAMDAN

0009-0001-0661-0454
BURSA ULUDAG UNIVERSITY
GRADUATE SCHOOL OF HEALTH SCEINCES
COACHİNG TRAİNİNG DEPARTMENT
MSc PROGRAM

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SUPERVISOR

DOÇ.DR. YAHYA YILDIRIM
0000-0003-0168-0485
BURSA ULUDAG UNIVERSITY
GRADUATE SCHOOL OF HEALTH SCIENCES
COACHİNG TRAİNİNG DEPARTMENT
BURSA - TÜRKİYE

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CONTACT

E-MAIL:
samdanholding75@hotmail.com

THESIS SUPERVISOR

TELEPHONE:
0224-294-06-85
E-MAIL:
yahyayildirim@uludag.edu.tr

THESIS ABSTRACT

This thesis aimed to investigate the effects of rapid weight loss on reaction time, dynamic balance, and anaerobic power in elite male karate athletes, as well as to evaluate the contribution of a 24-hour post-weigh-in recovery period to these performance variables. Sixteen elite male karate athletes (mean age: **20.44 ± 3.58 years**) participated in the study. Body composition, reaction time, dynamic balance, and anaerobic power were assessed at three different time points: **before rapid weight loss**, **after rapid weight loss**, and **after a 24-hour recovery period**.

The findings demonstrated that rapid weight loss resulted in significant changes in body composition and a reduction in anaerobic power performance. Although upper-limb reaction time showed significant improvement following the recovery period, no significant changes were observed in lower-limb reaction time or dynamic balance performance. These findings indicate that pre-competition weight management should focus not only on body weight reduction but also on maintaining athletic performance. Therefore, rapid weight loss strategies should be implemented in a controlled and individualized manner, while post-weigh-in recovery should prioritize **rehydration, energy replenishment, and neuromuscular recovery**.

APPLICATION AREAS OF THE THESIS RESULTS

This study provides evidence regarding the effects of rapid weight loss on the performance of karate athletes and offers scientific guidance for planning safer and more effective pre-competition weight management strategies.

ACADEMIC ACTIVITIES

Şamdan, E., & Vatansever, Ş. (2023). The Effects of Resistance Exercise Performed at Different Intensities on Muscle Hypertrophy: A Systematic Review. Başkent International Conference on Multidisciplinary Studies, December 21-22, 2023. (Full-Text Proceedings).