

階級制スポーツにおける急速減量に関する研究

(1) レスリング選手の減量の呼吸・循環機能および筋力に及ぼす影響

片岡 幸雄*

Studies on the Effects of Rapid Weight Reduction in Sports with Weight-Classification System

Report 1. Effects of weight reduction on cardio-respiratory function and muscular strength of wrestlers

by

YUKIO KATAOKA

(Department of Physical Education College of General Education University of Tokyo)

In order to find out the effects of rapid weight reduction on cardio-respiratory function and on muscular strength, six college wrestlers (in preparation for actual competition) and two college weight lifters (only for experiment) were exposed to radical dieting and sweating from physical exercise to reduce weight for the duration of six to seven days and were subjected to the exhaustive treadmill running and strength testing before and after the weight reduction. Results obtained were as follows.

1. The average amount of weight reduced was 3.7 kg (5.8%) for the wrestlers, and 5.3 kg (7.85%) for the weight lifters.

2. All the values of skinfold thickness measured on the triceps, the subscapular, and the abdomen were decreased; significantly especially, in the abdomen.

3. Decrease in muscular strength was significant in knee extension, but was not significant in elbow flexion.

4. As to the cardio-respiratory function, a) The all-out running time on a treadmill at a given speed was reduced in average 30% for the wrestlers and 36% for the weight lifters. b) The heart rate was observed to be lowered, whereas the respiratory rate was acutely increased in the early period of exhaustive running and kept higher level during running. c) Decrease in oxygen intake (l/min.) and oxygen intake per body weight (ml/kg/min.) was significant. Also during running decreasing trends were observed, in oxygen removal, tidal volume, and oxygen pulse.

5. From above results, it might be concluded that the rapid weight reduction of average 5.8% caused adverse effects on the wrestlers who were in preparation for actual competition. [Proceedings of Department of Physical Education, College of General Education, University of Tokyo, No. 7, 29~40, 1972]

緒 言

スポーツにおける「重量階級制度」(以下単に階

級制と略す)は、元来、スポーツの近代化とともに、競技を具備するためにつくられた制度である。しかし、一面において、自己の体重を不自然に減じて、自己の体重の階級より軽い階級に出場し、

* 東京大学教養学部体育研究室