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ORIGINAL ABSTRACT: PHYSIOLOGY

Pre-competition Weight Loss Models among Taekwondo Athletes

Katarzyna Janiszewska*, Katarzyna Eufemia Przybyłowicz

Department of Human Nutrition, Faculty of Food Science, University of Warmia and Mazury in Olsztyn, Poland

Abstract

Purpose: Taekwondo athletes combine different weight loss techniques to compete at the lowest possible weight class. The aim of this study was to determine effective pre-competition weight loss models and to evaluate the risk of negative consequences of using these models.

Methods: This study was conducted among 281 athletes. The pre-competition weight loss process was evaluated with validated questionnaire. The weight loss models were determined by non-hierarchical k-means cluster analysis. The risk of negative consequences was evaluated using various methods: anthropometric measurements for evaluation of body size and composition, dual energy X-ray absorptiometry for bone tissue status evaluation, and interviews for description of fettle before competition.

Results: A majority of the players (80%) practiced pre-competition weight loss during their career. Three weight loss models were identified: "active" or increased physical activity combined with food intake reduction was used by 47% of weight-reducing competitors (WRC), "passive" or food intake reduction without increasing physical activity was used by 31% of WRC, and "dehydration" or a combination of food and fluids intake reduction and exercising in impermeable clothing used by the remaining 22%. Competitors from the dehydration model felt reduced physical capacity, fatigue and decreased immunity more often than competitors from other models. Risk of serious dehydration was the lowest in the "active" models, while it was significantly lower in the "passive" and "active" models than in the "dehydration" model.

Conclusions: The study was the first to describe models of the existing combinations of different pre-competition weight loss techniques. It provides important information about the need of identify of athletes using the "dehydration" model because of the high risk of negative consequences. The weight regulation process can be dangerous to athletes' health or even potential for loss of life.

KEYWORDS

dehydration, body weight, exercise, diet, food, nutrition

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*Corresponding author: Katarzyna Janiszewska, Department of Human Nutrition, Faculty of Food Science, University of Warmia and Mazury in Olsztyn, Michała Oczapowskiego 2, Olsztyn, Poland.
Email: katarzyna.janiszewska@uwm.edu.pl

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