

INPLASY

Regulating body mass in wrestling - advice from the most cited combat sport literature

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 03 July 2024 and was last updated on 30 August 2024.

Note - The study was originally registered as a scoping review, the journal's editors requested a change to a systematic review.

INTRODUCTION

Review question / Objective This paper aims to review highly cited studies dealing with weight regulation in combat sports. These studies should help draw conclusions and make recommendations for wrestlers who manipulate body weight. This paper summarizes a topic written about for nearly 100 years and investigated in thousands of studies.

Rationale Wrestlers strive to compete in the lowest weight category possible to gain an advantage in strength. It did not take long for this phenomenon to be recognized as a problem, and it can be found in the scientific literature as early as the 1930s. Today, almost 100 years later, this issue remains relevant in the literature. The number and arrangement of weight categories have changed, but harmful weight management practices persist. In body mass regulation in wrestling, special emphasis is placed on rapid weight loss (RWL) and

rapid weight gain (RWG) due to their aggressive nature and the manipulation of a significant amount of body mass in a very short time. This problem affects almost 80% of participants in martial arts, it is the same for both sexes and also occurs in younger age groups. This is why a plethora of scientific papers have been written on this topic (at the time of writing this paper, the Web of Science scientific database (Core Collection) produced 2938 results in a search using the terms "weight reduction" and "sport"). Today, the challenge is not accessing research on body weight reduction in wrestling but rather navigating through the data and papers to select relevant ones and draw conclusions that can be helpful in practice (for wrestlers, coaches, and other professionals).

Condition being studied Rapid weight loss RWL is losing more than 5% of body weight in less than 7 days. The problems associated with rapid weight loss are health problems (severe dehydration

affects cardiovascular efficiency, the thermoregulatory system, hormonal imbalance, the immune system and more psychological problems) but also an ethical problem that should be regulated by law. Rapid weight loss is most often achieved by unhealthy and prohibited methods.

METHODS

Strategy of data synthesis We will search the scientific databases Web of Science (WOS) and Scopus, the most relevant databases for sports science. The primary combination of keywords :

1. weight control and combat sport
2. weight management and combat sport
3. weight cycling and combat sport
4. weight loss and combat sport
5. rapid weight loss and combat sport
6. rapid weight gain and combat sport

We will take 5 most cited articles on each keyword combination: 6 keywords × 5 most cited articles = 30 articles × 2databases = 60 articles.

Patient, Participant, or population Combat sport athletes, men and women, all age categories and all quality levels.

Intervention Not applicable.

Comparator Not applicable.

Study designs to be included The main criterion is: 5 most cited articles for each combination of keywords. This includes several types of study design (cross sectional study, randomized controlled trial, case study, systematic review).

Eligibility criteria

Exclusion criteria:

1. not on combat sport sample
2. not about weight regulation
3. duplicate papers

Inclusion criteria:

1. full text
2. English language.

Information sources The review should detect the most cited literature related to the regulation of body mass in combat sports, classify the literature by topic, analyze each topic separately, give concluding opinions and directions for further research.

Data management All authors will search both databases. After comparing their findings, they will determine 60 papers that will be further analyzed. In the first phase, duplicate papers and off-topic

papers will be rejected. Other inclusion and exclusion criteria will then be applied.

Quality assessment /Risk of bias analysis

Quality assessment guarantees high citation of papers in relevant scientific databases WOS, SCOPUS.

Strategy of data synthesis

Collected papers will be classified into 5 categories

1. weight loss and health
2. weight loss and performance
3. weight loss habits
4. weight loss and legal regulations
5. weight loss psychology

Each author will analyze 1 – 2 categories of papers. A review of each category will be done by two other authors who were not involved in the analysis.

Subgroup analysis Subgroups in this research are fighters from different martial arts, men and women, and all age and quality groups. The discussion in this study is conducted on topics and not on groups.

Sensitivity analysis The study design includes the most cited papers on this topic. The numerical data are not analyzed separately due to the large volume of topics, but the discussions and conclusions of the extracted papers are evaluated.

Language restriction Only scientific articles in English are accepted.

Country(ies) involved Croatia (Faculty of Kinesiology University of Split).

Keywords combat sports; weight reduction; health.

Contributions of each author

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