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Investigation of Weight Loss Methods of Wrestlers Fighting in Different Styles and Categories During the Competition Period

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Abstract

This research was conducted in order to determine the preferred weight loss methods of wrestlers in the category of juniors, cadets and espoir who compete in Greco-Roman and freestyle wrestling. 215 male wrestlers between the ages of 14 and 17 participated in the study. In order to determine the weight loss methods of wrestlers, the "athlete weight loss methods and effects scale" developed by Yarar et al. (2016) and the personal information form developed by the researchers were used. In the analysis of the data obtained from the wrestlers SPSS package program was used. Independent t test was used from binary comparisons and ANOVA test was used for multiple comparisons. Significance level was accepted as $p<0.05$. According to the styles variable, it was found that there was a significant difference between free and Greco-Roman wrestlers in the diet sub-dimension of the athlete weight loss and effects scale ($p<0.05$). According to the category variable, it was determined that there was a significant difference in the diet and ergogenic aids sub-dimensions of the juniors and the espoir ($p<0.05$).
As a result, it is observed in the research findings that wrestlers usually use the diet method as a method of weight loss. It is thought that one of the most appropriate methods to protect the health and athletic performance of athletes is to apply a conscious diet, which will be more advantageous than other methods. In addition, it can be said that wrestlers consciously and healthily apply weight loss methods as they get older.

Keywords: Wrestle, Weight Loss, Competition Period

INTRODUCTION

According to the definition of the International Amateur Wrestling Federation (FILA), wrestling; is a struggle in which two people try to bring each other's backs to the ground or achieve technical superiority in accordance with certain rules by using their strength, endurance, technique, skill, flexibility and intelligence on the mat that meets certain standards, without using any tools (1,2). Wrestling is a sport that is among the Olympic competition sports and whose popularity is increasing day by day (3). Mattress wrestling, which is conducted according to the rules established by the World Wrestling Association, is applied in two ways: freestyle wrestling and Greco-Roman style wrestling (4). United Word Wrestling (UWW), which aims to make wrestling known as a fairer competitive sport and to develop the basic rules of this sport, has created weight categories to enable its athletes to participate in the competition with certain body weights (3).

Athletes lose weight in order to compete in their own weight, to look more aesthetic, or to improve their performance capacity and gain an advantage over a weaker and thinner opponent in a lower weight category (5). Due to the fact that wrestling consists of different weights, athletes may want to participate in the competition in a lower weight category by losing weight. Because weight loss has been a method that attracted attention by athletes since the 1924 Paris Olympics (6). Weight loss and participation in the underweight competition, which is also of interest to Turkish wrestlers, is a very common practice (4,7). In these applications, athletes generally reduce 2 to 10% of their body weight before each competition (usually 2-3 days before the weigh-in) to compete in the lighter weight category (8,9). It has been determined by studies that athletes deliberately starve for a long time (>24 hours), exercise excessively, reduce their food and fluid intake, train with plastic/rubber clothing, and resort to traditional methods such as sauna in order to reduce their body weight sharply and rapidly. As a result of these methods, it has been reported that rapid weight loss creates disadvantages in the physiological and psychological states of wrestlers along with a decrease in their sportive performance (5, 10,11).

It has been indisputably true that rapid weight loss negatively affects a number of health-related variables (12, 13). Weight loss of athletes with calorie restriction method will cause the loss of minerals or vitamins necessary for the body and the participation of athletes in competitions at low energy levels (14). Rapid weight loss methods harm the aerobic and anaerobic performance of the athlete, accelerate the emptying of glycogen stores in the muscles, cause negativity in the heat regulation system, reduce the volume of fluid plasma, disrupt the fluid-electrolyte balance and increase the number of heart beats above normal (12). In addition, rapid weight loss is reported to increase the level of depression, aggression, anger and fatigue in athletes, as well as to cause short-term memory, self-confidence and concentration decreases (12, 15).

Athletes unconsciously apply the weight loss methods they prefer to compete in a lower weight category and ignore the negative effects of this situation (16). In addition, it is known that families, sports and health professionals are concerned about methods used for rapid weight loss such as excessive fluid loss, calorie restriction, use of diuretic drugs, diet pills, diarrhea medications, training clothes made of nylon material, vomiting and some other methods (17).

It is important to determine the rapid weight loss methods preferred by the athletes and the disadvantages resulting from these methods. Therefore, this research was carried out in order to determine the weight loss methods preferred by the wrestlers in the categories of juniors, cadets and espoir competing in Greco-Roman and freestyle before the competition period, and to determine the negative effects of these methods.

METHOD

Before starting the research, first of all, "Bingöl University, Health Sciences Scientific Research and Publication Ethics Committee has been approved by the decision no. 16 dated 18/10/2022 and meeting number 22/18.

Model of the Research

In this study, general survey model, one of the quantitative research methods, was used. This model is a type of scanning that will be carried out on the whole universe or the sample to be taken from it in order to make a general judgment about the universe in a universe consisting of large numbers (18).

Study Group of the Research

The study group of this research consisted of n= 215 male athletes who participated in wrestling competitions in different styles (Greco-Roman and freestyle) and categories (juniors, cadets and espoir) in Bingol.

Data Collection Tools

In this study, it was focused on determining the methods of losing weight during the competition period in Greco-Roman and freestyle wrestlers aged 14-17. Personal information form and athlete weight loss methods and effects scale were used as data collection tools.

Personal Information Form:

A Personal Information Form developed by the researcher was used to collect data about the independent variables of the study. The personal information form was evaluated by the answers of the athletes participating in the research to five questions in total to determine their style, age, height, normal weight and competition weight.

Athlete Weight Loss Methods and Effects Scale:

The Athlete Weight Loss Methods and Effects Scale, which was developed by Yarar et al. (2016) and was reliably validated (alpha value α=0.74), consists of a total of 19 questions and 5 sub-dimensions. When we look at the content and question distribution of these sub-dimensions;

1. **Diet:** In this sub-dimension, the level of reducing the consumption of fats, the consumption of carbohydrates and food consumption in general, which is one of the diet methods, is measured while the athlete loses weight. (Question 1,2,3).

2. **Fluid Loss:** In this sub-dimension, it is measured to what extent the athlete tends to lose weight with actions such as sweating, spitting and jogging with a raincoat by entering the sauna while losing weight (Question 4,5,6).

3. **Ergogenic Aids:** This sub-dimension measures weight loss methods and measures the degree to which the athlete uses chemical substances such as diureticians, diet pills, etc. while losing weight (Question 7,8,9).

4. **Physiological Effect:** In this sub-dimension, the degree to which the athlete experiences muscle cramps, heart palpitations, respiratory distress, disability, and the physiological effects of an increase in body temperature while losing weight is measured (Question 10,11,12,13,14).

5. **Psychological Impact:** In this sub-dimension, the athlete's psychological state of feeling about his desire to do sports, nervousness, fatigue, stress and performance levels while losing weight is measured (Question15,16,17,18,19).

The questionnaire consists of 5 likerts. The numerical equivalent of the answers to be given; Never=1, Rarely=2, Occasionally= 3, Often= 4, Always=5 (19).

Implementation of Research:

Before the scale was applied, the wrestlers' coaches, their families and themselves were interviewed and the necessary information was given about the purpose of the research, and the athletes who were eligible for the research were included in the research.

Analysis of Data

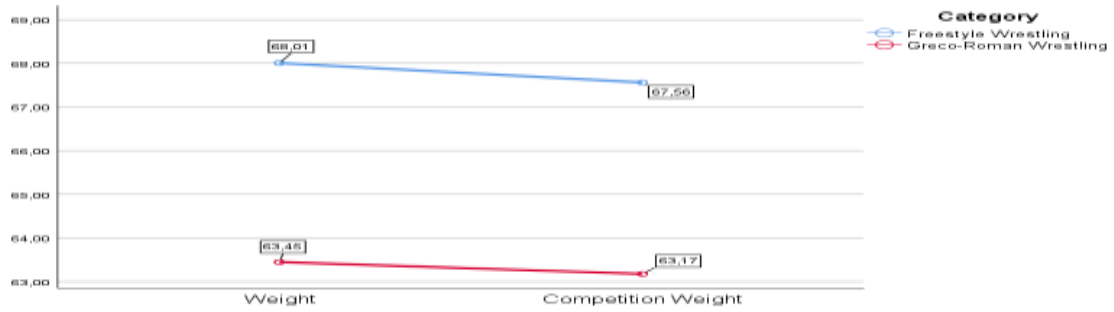
The analysis of the obtained data was performed in SPSS 25 package program. According to the Kolmogorov Smirnov test, since the data showed a normal distribution, the independent t test was used from the binary comparisons in the scale scores and the One-way analysis of variance (ANOVA) was used in multiple comparisons. The differences resulting from ANOVA were evaluated by Tukey HSD test. The significance level was accepted as $p<0.05$.

FINDINGS

Table 1. Average Height and Body Weight of Wrestlers

Variables	Branch	N	$\bar{x}$ ± S.S.
Height (cm)	Freestyle Wrestling	112	1.70 ±.08
	Greco-Roman Wrestling	103	1.69 ± .10
Normal weight (kg)	Freestyle Wrestling	112	68.01 ± 17.71
	Greco-Roman Wrestling	103	63.44 ± 17.65
Competition weight (kg)	Freestyle Wrestling	112	67.56 ± 17.14
	Greco-Roman Wrestling	103	63.17 ± 17.52

Graphic 1. Normal body weight and competition body weight by category



When the graph is examined, it is seen that the Freestyle wrestlers were 68.01±17.71 kg, but they decreased to 67.56±17.65 kg for the competition. It is seen that Greco-Roman wrestlers were 63.44±17.65 kg, but for the competition, they dropped to 63.17±17.52 kg.

Table 2. Comparison of sub-factors by styles

Variables	Branch	N	$\bar{x}$ ± S.S.	t	p
Diet	Freestyle Wrestling	112	2.98±1.00	**-2.272***	0.045
	Greco-Roman Wrestling	103	3.24±0.99		
Fluid Loss	Freestyle Wrestling	112	2.10±0.99	-0.140	0.889
	Greco-Roman Wrestling	103	2.11±0.94		
Ergogenic Aids	Freestyle Wrestling	112	1.46±0.89	0.622	0.534
	Greco-Roman Wrestling	103	1.38±0.90		
Physiological effect	Freestyle Wrestling	112	1.99±0.83	0.164	0.870
	Greco-Roman Wrestling	103	1.97±0.92		
Psychological impact	Freestyle Wrestling	112	2.09±0.85	-0.741	0.458
	Greco-Roman Wrestling	103	2.18±0.95		

*<0.05

A significant difference was found at the p<0.05 level between freestyle wrestling and Greco-Roman wrestlers in the "Diet" sub-dimension of the athlete's weight loss and effects scale. It was determined that the average scores of Greco-Roman wrestlers were higher, in summary, they were more inclined to diet. There was no significant difference in the sub-dimensions of "fluid loss, ergogenic aids, physiological effect and psychological effect". It was determined that the average scores of "fluid loss and physiological effect" in the categories were close to each other. It was determined that freestyle wrestlers were more prone in the "ergogenic aid" sub-dimension, and Greco-Roman wrestlers were more prone in the "psychological impact" sub-dimension

Table 3. Comparison of sub-factors by categories

Variables	Groups	N	$\bar{x}$ ± S.S	F	p	Tukey HSD
Diet	Juniors	54	2.88±1.12	**4.493***	0.011	Juniors-Espoir *
	Cadets	98	3.04±0.94			
	Espoir	63	3.41±0.91			
Fluid Loss	Juniors	54	2.27±0.96	1.207	0.276	---
	Cadets	98	2.10±1.03			
	Espoir	63	1.98±0.84			
Ergogenic Aids	Juniors	54	1.67±1.12	**3.241***	0.017	Juniors-Espoir *
	Cadets	98	1.43±0.92			
	Espoir	63	1.20±0.49			
Physiological effect	Juniors	54	2.14±0.99	1.108	0.237	---
	Cadets	98	1.97±0.92			
	Espoir	63	1.86±0.65			
Psychological impact	Juniors	54	2.12±0.89	0.090	0.897	---
	Cadets	98	2.16±0.95			
	Espoir	63	2.10±0.83			

*<0.05

A significant difference was found at the p<0.05 level in the sub-dimensions of "Diet and Ergogenic Aids" of the athlete's weight loss and effects scale according to categories. It is seen in the table that this difference stems from the "juniors and espoir" group. It is seen from the average scores that in the "diet" sub-factor espoir tend to diet more, and in the "ergogenic aids" sub-factor, the juniors tend to use more ergogenic aids. No significant difference was found in the sub-factors of "fluid loss, physiological effect and psychological effect". It was determined that the average scores of the juniors in the "fluid loss and physiological effect" sub-factor and the stars in the "psychological effect" sub-factor were higher.

DISCUSSION AND CONCLUSION

This research was carried out to determine the weight loss methods preferred by wrestlers in the categories of juniors, cadets and espoir competing in Greco-Roman and freestyle styles. According to the results obtained from the athletes participating in the research; It was observed that there was a significant difference between freestyle wrestling and Greco-Roman wrestlers in the "Diet" sub-dimension of the athlete weight loss and effects scale (p<0.05). It was determined that the average scores of Greco-Roman wrestlers were higher and that the athletes were more likely to diet in the formation of this difference. There was no significant difference in the sub-dimensions of "fluid loss, ergogenic aids, physiological effect and psychological impact".

It was determined that the average scores of "fluid loss and physiological effect" in the categories were close to each other. It was determined that freestyle wrestlers were more prone in the "ergogenic aid" sub-dimension, and Greco-Roman wrestlers were more prone in the "psychological impact" sub-dimension.

When the researches in the literature related to the results of our research were examined, it was seen that the research comparing the weight drop scale of wrestlers competing in Greco-Roman and freestyle was limited. Cesur reported that there was a significant difference in favor of freestyle wrestlers in the physiological effect sub-dimension according to the sport branch variable, and that while freestyle wrestlers lost weight, they were physiologically affected more than Greco-Roman style wrestlers (20). He also reported that there was no significant difference in terms of other sub-dimensions. Although this result does not show parallelism with the result of our research, it is important in terms of contributing to the literature.

In the literature, there are studies examining the weight loss methods of wrestlers with different aspects. The percentage of elite wrestlers who prefer diet and exercise method as a weight loss method is higher than

those who prefer the pills and sauna method (21). Considering the weight loss methods generally preferred by elite wrestlers, it has been reported that they prefer methods such as restricting food intake and reducing fat consumption (22). Freestyle wrestlers have been reported to reduce food consumption and fat consumption mostly in diet size from weight loss methods, while Greco-Roman style wrestlers prefer to reduce fat consumption mostly in diet size (20). It is stated that the main weight loss method of wrestlers is a gradual diet (79.4%) (23). In his study, Çolak reported that wrestling, judo and teakwondo athletes used the diet method the most and the least ergogenic aids method among the physiological, psychological, ergogenic, diet and fluid loss methods (24). It is seen that wrestling and judoka athletes adjust their weight loss process by dieting 1-2 weeks in advance, and the vast majority of them reduce their fat and carbohydrate consumption. In addition, it is stated that athletes have the right approach in both branches as diet and training while losing weight, but they lose weight quickly (25). In his study, Yağmur stated that 92.9% of elite Greco-Roman wrestlers reduced their weight by reducing their food consumption, 87.1% their carbohydrate consumption, and 95.7% their fat consumption (26). Reducing the weight consumption of wrestlers in the diet sub-dimension (heavyweight 54.1%; middleweight 37.2%; light weight 35.6%) was found to be the most preferred response (14). According to the results of the literature research and our study, it is seen that wrestlers generally prefer the diet method as a weight loss method (21,22, 20, 23, 24, 25,26,14).

Individuals who exercise need nutrition programs that contain sufficient energy and nutrients in order to reach their ideal body weight. Individuals who exercise regularly need to take macro and micro nutrients at a sufficient level in order to avoid negative situations that may cause performance loss such as injury and loss of concentration during training and competition. In addition, issues that individuals need support such as health, sports, food choices, body weight and body composition should be planned by experts and dietitians (27,28).

Another result obtained from the wrestlers participating in our research is that there is a significant difference in the "Diet and Ergogenic aids" sub-dimensions of the athlete weight drop and effects scale according to categories ($p<0.05$). This difference stems from the “juniors and espoir” groups. In the diet sub-factor, it is seen from the average scores that young people tend to diet more, and in the "ergogenic aids" sub-factor, the juniors tend to use more ergogenic aids. No significant difference was found in the sub-factors of “fluid loss, physiological effect and psychological effect”. It was determined that the average scores of the juniors in the "fluid loss and physiological effect" sub-factor and the cadets in the "psychological effect" sub-factor were higher.

When the studies in the literature related to the result of our research were examined, it was seen that the studies that compared the sub-dimensions of the weight loss scale of the wrestlers according to the categories were limited. Yılmaz reported in his study that there was a significant difference ($p<0.05$) in the diet, fluid loss, psychological sub-dimensions and total scale scores of judo and wrestlers (25).

As a result, it is seen in the findings of our study that wrestlers generally use the diet method as a weight loss method. We think that one of the most appropriate methods to protect the health and sportive performance of athletes is to implement a conscious diet, which will be more advantageous than other methods. In addition, we can say that as the age progresses, the wrestlers apply the methods of losing weight consciously and in a healthy way.

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