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The Relationship Between Perceived Stress, Body Image and Eating Behaviors in Athletes

Sporcularda Beden İmajı, Yeme Davranışları ve Stres Durumları Arasındaki İlişki

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ABSTRACT

The aim of the study was to evaluate the relationship between body image, eating behaviors, and stress states in athletes. The study was conducted with 72 volunteer athletes aged 13-23. The Perceived Stress Scale, the Dutch Eating Behavior Scale, the Multiphasic Body-Self/Self Relationship Scale and a questionnaire including questions about body weight satisfaction and emotional eating were applied to the athletes. Anthropometric measurements were taken using bioelectrical impedance analysis (BIA). The perceived stress levels of female athletes (28.29±5.24) were found to be higher than those of males (24.34±7.16). Restrictive and emotional eating behaviors were found to be higher in females. While the emotional eating subscale mean score was higher in taekwondo athletes (29.63±14.213) than in rowing athletes (21.69±10.058), the total body image score and physical adequacy orientation, health evaluation and health orientation subscale mean scores were higher in rowing athletes (p<.05). It was observed that being anxious, angry, nervous, excited, happy and cheerful significantly affected appetite according to gender (p<.05). Positive correlations were found between perceived stress and emotional eating subscale and between external eating and appearance evaluation subscales (p<.05). The tendency of athletes to perfectionism can affect their eating behaviors, stress situations and body perception. In order for their performance not to be negatively affected, athletes need to be able to control their emotional eating and perceived stress levels, be aware of which emotinos trigger these situations and seek solutions to these situations.

Keywords: Athlete, eating behaviors, stress, body ımage

ÖZ

Araştırmanın amacı, sporcularda beden imajı, yeme davranışları ve stres durumlarının ilişkisini değerlendirmektir. Çalışma yaş aralığı 13-23 olan 72 gönüllü sporcu ile yürütülmüştür. Sporculara Algılanan Stres Ölçeği, Hollanda Yeme Davranışı Ölçeği, Çok Yönlü Beden-Benlik/Benlik İlişkisi Ölçeği ve vücut ağırlığı memnuniyeti ile duygusal yeme ile ilgili soruları içeren bir anket uygulanmıştır. Biyoelektrik empedans analizi (BIA) ile antropometrik ölçümleri alınmıştır. Kadın sporcuların algılanan stres düzeyleri (28.29±5.24) erkeklere (24.34±7.16) göre daha yüksek bulunmuştur. Kısıtlayıcı ve duygusal yeme davranışları kadınlarda daha yüksek saptanmıştır. Duygusal yeme alt ölçek puan ortalamasının tekvando sporcularında (29.63±14.213) kürek sporcularına göre (21.69±10.058) daha yüksek iken beden imajı toplam puanı ve fiziksel yeterlilik yönelimi, sağlık değerlendirmesi ve sağlık yönelimi alt ölçek puan ortalamaları kürek sporcularında daha yüksek saptanmıştır (p<.05). Kaygılı, öfkeli, sinirli, heyecanlı, mutlu ve neşeli olmanın iştahı cinsiyete göre anlamlı şekilde etkilediği görülmektedir (p<.05). Algılanan stres ile duygusal yeme alt ölçeği arasında ve dışsal yeme ile görünüm değerlendirme alt ölçekleri arasında pozitif korelasyonlar saptanmıştır (p<.05). Sporcuların mükemmeliyetçilik eğilimlerine yatkınlığı yeme davranışlarını, stres durumlarını ve beden algılarını etkileyebilmektedir. Sporcuların performanslarının olumsuz etkilenmemesi için duygusal yeme ve algılanan stres düzeylerini kontrol edebilmeleri ve hangi duyguların bu durumları tetiklediğinin farkında olmaları ve bu durumlara çözüm aramaları gerekmektedir.

Anahtar Kelimeler: Sporcu, yeme davranışları, stres, beden imajı

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Introduction

Body image perception in societies; Social media perceptions can be affected by many factors such as education level, sports, age, impulsivity, social pressure, health, appearance perception, gender, and peer relations. Due to body dissatisfaction in body image, individuals may push individuals into different behaviors such as dieting, mood disorders, excessive exercise and sports, ergogenic support or drug use in order to achieve the desired body shape (Fidan et al., 2023). Generally, a lean and thin body composition is perceived as the ideal female figure, while a muscular and well-built body composition is perceived as the ideal male figure (Grogan, 1999). Eating disorders can be affected by many factors such as gender, race, ethnicity, body weight, socioeconomic status, sports activities, coach or peer relationships (Frideres & Palao, 2005; Yu & Muehleman, 2023). Eating behavior disorders can be seen more frequently in athletes, especially female athletes, compared to the general population (Joy et al., 2016; Scott et al., 2020). It is stated that the reason for the higher risk in women is that they tend to experience mood disorders such as body dissatisfaction, depression, and stress more frequently compared to men (Yu & Muehleman, 2023). In sports where body weight is at the forefront and endurance sports, the risk of eating disorders may increase due to factors such as the negative attitudes and behaviors of coaches and teammates and their perfectionist nature (Frideres & Palao, 2005; Reardon et al., 2019). The performance of the athlete is affected depending on whether the stress is manageable or not (Keser, 2013). When the threshold limit of unmanageable stress is exceeded, it may be inevitable that learning becomes difficult, hindered, and performance deteriorates (Koyuncu et al., 2015). In this context, the contribution of the research to the literature is to support the development of science and related fields. The aim of the research is to evaluate the relationship between body image, eating behaviors and stress situations in athletes competing in different sports branches according to gender.

Methods

Subjects

This study is a cross-sectional study and G*Power 3.1.9.7 program was used to calculate the sample size of the study. For this purpose, the information obtained from a study conducted by Mutlu et al., (2022) was taken as reference and as a result of the analysis made by taking alpha (α) = 0.05, effect size (g) = 0.5 and power (1-β) = 0.95, It was determined that at least 54 athletes should take part. 72 athletes between the ages of 13-23 who volunteered to participate in the study were included. Athletes who did not volunteer to participate in the study or wanted to leave the study in the middle of the study were excluded from the study. The research population consists of athletes applying to an Athlete Health Center. Necessary permissions and ethics committee were obtained. Relevant consent forms were obtained from both the participants and their parents.

Forms used in data collection:

The contents of the sections and body composition analysis in the survey form prepared by the researchers in the study are as follows;

Demographic Information:

In this section consisting of ten questions, demographic information and ergogenic supplement use status of the participants were questioned.

Anthropometric Measurements:

Body weight (kg), lean mass (kg), fat mass (kg) and body fat percentage (%) values of the athletes were determined by bioelectrical impedance analysis (BIA) (MC 980, Tanita Corp., 1000 kHz, Japan), which is a body composition analysis method applied to athletes. The height of the athletes was measured on a stadiometer in anatomical posture without shoes.

Dutch Eating Behavior Questionnaire (DEBQ):

The Dutch Eating Behavior Questionnaire (DEBQ) consisting of 33 items, the Turkish validity and reliability of which was performed by Bozan in 2009, will be used to evaluate the eating behaviors of the participants. This questionnaire consists of 3 subscales evaluating emotional eating behaviors, external eating behaviors and restricted eating behaviors. The items in the questionnaire are evaluated with a 5-point Likert scale (1: never, 2: rarely, 3: sometimes, 4: often, 5: very often). The total score of the test is not evaluated, but the 3 subscales are evaluated within themselves. While there is no cut-off point in the scoring of the test, a high total score evaluated within the 3 subscales indicates a negative eating behavior. In the Turkish version of the Dutch Eating Behavior Questionnaire, the first 10 questions are restricted eating, 11-23 are emotional eating, and 24-33 are questions evaluating external eating attitudes. The 31st question in the external eating scale is a reverse question (Bozan et al., 2011).

Multidimensional Body-Self/Self-Relationship Questionnaire (MBSRQ):

It is a self-assessment scale consisting of 69 items developed to evaluate the self-attitudinal aspects of the structure of body image. The original MBSRQ was developed by Winstead and Cash (1984). It was adapted to the Turkish population by Doğan and Doğan (1992) after a Turkish validity-reliability study. The Turkish version of the scale consists of 57 items and is a 5-point Likert-type scale like the original version. The scale consists of 7 sub-dimensions including “Appearance Evaluation”, “Appearance Orientation”, “Physical Competence Evaluation”, “Physical Competence Orientation”, “Fitness, and Health/Illness Evaluation”, “Fitness, and Health/Illness Orientation” and “Body Areas Satisfaction”. Each statement in the scale is scored from 1 to 5. “Strongly disagree” response receives 1 point, “Mostly disagree” response receives 2 points, “Undecided” response receives 3 points, “Mostly agree” response receives 4 points, “Strongly agree” response receives 5 points. There are items with reverse expression in the scale (12, 13, 14, 25, 26, 27, 29, 30, 31, 33, 35, 37, 39, 40, 41). In these items, the options are reverse scored as 5, 4, 3, 2, 1. A minimum of 57 and a maximum of 285 points can be obtained from the scale. The mean total score is calculated by dividing the sum of the scores obtained from all items in the scale by the number of items. Rising scores indicate a healthy body and high body image. In this study, only the mean total score of the scale was used and the Cronbach's alpha internal consistency coefficient was found to be 0.94 (Doğan & Doğan, 1992; Hovardaoğlu, 1990).

Questions on Body Weight Satisfaction and Emotional Eating:

This is a section in which participants are questioned about their body satisfaction and emotional eating.

Perceived Stress Scale:

The Perceived Stress Scale developed by Cohen, Kamarck and Mermelstein (1983) was designed to determine the extent to which an individual perceives certain situations in his/her life as stressful (Cohen et al., 1983). The lowest score that can be obtained from the 5-point Likert-type scale consisting of 14 items is 0 and the highest score is 56. High scores obtained from the scale indicate that the stress perception of the person is high. The scale was adapted into Turkish by Baltaş et al. (1998) and Eskin et al. (2013). In the study of Eskin et al. (2013), the Cronbach alpha internal consistency coefficient of the scale was found to be .84 and test-retest reliability was found to be .87 (Eksin et al., 2013).

Statistical Methods:

SPSS 23.0 (IBM Corp., Armonk, NY) package program was used for statistical analyses. Descriptive statistics are presented as frequency (n), percentage (%), mean, standard deviation (SD) values. Fisher's Exact Test or Pearson chi-square test was used to analyze the relationships between categorical variables. The normal distribution assumption was checked with the Shapiro Wilk test. Independent t-test was used in the analysis of the difference between the measurements of two independent groups because it conformed to the normal distribution. Pearson correlation test was used to determine the relationships between continuous variables. $p < .05$ values were considered statistically significant.

Ethics of the Research

Ethics committee approval for this study was received from Ankara Medipol University Non-Interventional Clinical Research Ethics Committee (Date: 22 April 2024, Decision Number: 50, Protocol Number: E-81477236-604.01.01-2040). Verbal consent was obtained from all the participants.

Results

Descriptive statistical results obtained from the athletes constituting the research group are given in tables 1 and 2.

Table 1.
Descriptive characteristics

	N	Mean	SD	Minimum	Maximum
Age (years)	72	17.2	2.15	13	23.0
Sports age (years)	72	7.6	3.11	1.0	13.0
Body Weight (kg)	72	66.5	13.26	43.9	115.7
Height (cm)	72	176.2	9.60	148.0	194.0
Body Mass Index (kg/m^2)	72	21.3	2.63	16.5	31.2
Body Fat Percentage (%)	72	17.8	6.68	3.0	30.9
Body fat (kg)	72	11.7	5.01	1.8	24.6
Lean Body Mass (kg)	72	54.7	11.90	33.9	91.1

Table 1 shows the distribution of some demographic characteristics of the athletes participating in the study. According to this table, it was determined that the mean age of the athletes between the ages of 13-23 years was 17.2±2.15 years and the mean number of years of sport was 7.6±3.11 years.

When the mean anthropometric measurement values of the athletes were analyzed, it was found that the mean body weight was 66.5±13.26 and the mean lean body mass was 54.7±11.90 kg. The mean fat percentage was determined as 17.8±6.68.

Table 2.
Descriptive characteristics

		N (n=72)	%
Gender	Female	34	47.2
	Male	38	52.8
Sports Branch	Taekwondo	56	77.8
	Rowing	16	22.2
Education Level	Primary school	2	2.8
	Secondary school	46	63.9
	High school	17	23.6
	University	7	9.7
Ergogenic Supplements Usage	No	58	80.6
	Yes	14	19.4
Type of Ergogenic Supplements*	BCAA	8	57.1
	Mg	5	35.7
	Kreatin	1	7.1
	l-karnitin	2	14.3
	Omega-3	4	28.6
	Whey	2	14.3
	Total	14	157.1

* More than one option is marked.

According to Table 2, 47.2% of the athletes were female, 52.8% were male, 77.8% were interested in taekwondo and 22.2% were interested in rowing. Most of the athletes (63.9%) stated that they graduated from secondary school. It was stated that 19.4% of the athletes used ergogenic support. Of the individuals using supplementation, 57.1% stated that they used BCAA, 35.7% magnesium, 28.6% omega-3.

Table 3.
Comparison of DEBQ, MBSRQ, and perceived stress scale scores by gender (statistically significant differences ındicated)

Gender		N	Mean	SD	t	*p*
Perceived Stress Scale -Total	Female	34	28.29	5.24	2.645	**.010**
	Male	38	24.34	7.16		
Restrained Eating (DEBQ)	Female	34	27.76	8.41	2.762	**.007**
	Male	38	22.95	6.34		
Emotional Eating (DEBQ)	Female	34	34.03	13.77	3.956	**.000**
	Male	38	22.34	11.27		
External Eating (DEBQ)	Female	34	28.35	6.95	-.365	.716
	Male	38	28.97	7.42		
Appearence Evaluation (MBSRQ)	Female	34	21.12	4.50	-1.327	.189
	Male	38	22.47	4.17		
Appearence Orientation (MBSRQ)	Female	34	36.53	5.19	.613	.542
	Male	38	35.79	5.04		
Physical Competence Evaluation (MBSRQ)	Female	34	23.38	3.60	.253	.801
	Male	38	23.18	3.03		
Physical Competence Orientation (MBSRQ)	Female	34	34.56	4.69	-1.167	.247
	Male	38	35.87	4.82		
Fitness, and Health/Illness Evaluation (MBSRQ)	Female	34	20.09	3.69	-2.120	**.038**
	Male	38	21.97	3.84		
Fitness, and Health/Illness Orientation (MBSRQ)	Female	34	38.32	5.13	.488	.627
	Male	38	37.66	6.30		
Body Areas Satisfaction (MBSRQ)	Female	34	33.38	8.15	-1.741	.086
	Male	38	36.37	6.37		
Multidimensional Body–Self Relations Questionnaire (MBSRQ)-Total	Female	34	207.09	25.50	-1.077	.285
	Male	38	213.32	23.58		

DEBQ: Dutch Eating Behavior Questionnaire; MBSRQ: Multidimensional Body–Self Relations Questionnaire.

Table 3 shows the total and sub-dimension mean scores of Body Image, Eating Behaviors and Perceived Stress Scale according to the gender of the athletes. According to the information in this table, the mean scores of the perceived stress scale showed a significant difference according to gender and women (28.29±5.24) had higher stress levels compared to men (24.34±7.16) (p<.05).

The mean scores of restrictive eating and emotional eating subscales of the eating behavior scale showed a significant difference according to gender and women were found to have higher restrictive and emotional eating behaviors compared to men (p<.05). While total scores and most of the subscales for body images did not differ significantly by gender, the health assessment subscale was found to differ significantly by gender (p<.05).

Table 4.
Comparison of the participants' dutch eating behavior questionnaire (DEBQ), multidimensional body-self/self-relationship questionnaire (MBSRQ) and perceived stress scale scores according to sports branch

Sports branch		N	Mean	SD	*p*
Perceived Stres Scale-Total	Taekwondo	56	26.68	6.003	.342
	Rowers	16	24.56	8.350	
Restrained Eating (DEBQ)	Taekwondo	56	25.55	7.998	.424
	Rowers	16	24.06	6.797	
Emotional Eating (DEBQ)	Taekwondo	56	29.63	14.213	**.042**
	Rowers	16	21.69	10.058	
External Eating (DEBQ)	Taekwondo	56	29.41	7.336	.059
	Rowers	16	26.13	5.999	
Appearence Evaluation (MBSRQ)	Taekwondo	56	21.55	4.129	.373
	Rowers	16	22.81	5.076	
Appearence Orientation (MBSRQ)	Taekwondo	56	35.46	4.835	.055
	Rowers	16	38.50	5.404	
Physical Competence Evaluation (MBSRQ)	Taekwondo	56	22.98	3.182	.079
	Rowers	16	24.31	3.554	
Physical Competence Orientation (MBSRQ)	Taekwondo	56	34.32	4.632	**.001**
	Rowers	16	38.50	3.795	
Fitness, and Health/Illness Evaluation (MBSRQ)	Taekwondo	56	20.32	3.578	**.002**
	Rowers	16	23.75	3.715	
Fitness, and Health/Illness Orientation (MBSRQ)	Taekwondo	56	37.18	5.772	**.027**
	Rowers	16	40.75	4.879	
Body Areas Satisfaction (MBSRQ)	Taekwondo	56	34.36	7.728	.299
	Rowers	16	37.06	5.651	
Multidimensional Body–Self Relations Questionnaire (MBSRQ)-Total	Taekwondo	56	206.00	24.235	**.005**
	Rowers	16	225.69	19.297	

DEBQ: Dutch Eating Behavior Questionnaire; MBSRQ: Multidimensional Body–Self Relations Questionnaire.

According to Table 4, the total and sub-dimension mean scores of Body Image, Eating Behaviors and Stress Status of the athletes according to their branches are given. According to the information in this table, while the perceived stress scale scores did not show a significant difference between the sports branches ($p > .05$); the mean score of the emotional eating subscale of the eating behavior scale was significantly higher in taekwondo athletes than in rowing athletes ($p < .05$).

It was found that the total score for body images and physical competence orientation, health assessment and health orientation subscale mean scores differed significantly according to the branches and rowing athletes had a higher mean score ($p < .05$).

Table 5.
Comparison of the participants' answers about body composition and emotional eating questions

		Gender			
		Female (n=34)	Male (n=38)	X^2	*p*
What do you think about your current body weight is?	I want to gain weight	3	6	3.498	.174
	I want to lose weight	16	10		
	I don't have a weight problem	15	22		
Do you have your body composition measured?	Yes	21	23	0.012	.554
	No	13	15		
What do you think about your muscle mass?	Few	7	8	0.068	.967
	Normal	24	26		
	High	3	4		
What do you think about your fat mass?	Few	3	10	4.727	.094
	Normal	22	23		
	High	9	5		
How is your appetite affected when you're anxious?	My appetite increases	7	2	19.616	**.00**
	My appetite decreases	22	11		
	My appetite is not affected	5	25		
How is your appetite affected when you're angry?	My appetite increases	7	1	8.93	**.012**
	My appetite decreases	17	15		
	My appetite is not affected	10	22		
How is your appetite affected when you're angry?	My appetite increases	9	1	10.711	**.005**
	My appetite decreases	15	15		
	My appetite is not affected	10	22		
How is your appetite affected when you're excited?	My appetite increases	14	6	9.239	**.01**
	My appetite decreases	6	3		
	My appetite is not affected	14	29		
How does your appetite affected when you're happy?	My appetite increases	27	18	7.936	**.019**
	My appetite decreases	1	2		
	My appetite is not affected	6	18		
How does your appetite get affected when you're pessimistic?	My appetite increases	11	6	5.931	.052
	My appetite decreases	12	9		
	My appetite is not affected	11	23		
How is your appetite affected when you are happy?	My appetite increases	20	8	11.188	**.004**
	My appetite decreases	0	1		
	My appetite is not affected	14	29		

According to Table 5, the results of the chi-square test for the difference of the questions related to body composition and emotional eating of the athletes according to gender are given. According to the information in this table, it is seen that being anxious, angry, nervous, excited, happy and joyful according to gender significantly affects appetite ($p < .05$). It was observed that appetite decreased in women when they were anxious, angry and irritable, while appetite increased when they were excited, happy and joyful. In men, appetite was not affected more in these emotional states, while appetite increased when they were happy. There was no significant difference between the athletes' self-assessment of body weight, muscle and fat weights according to gender, but most of them thought that they had a normal body composition ($p > .05$).

Table 6.
Correlations between dutch eating behavior questionnaire (DEBQ), multidimensional body-self/self-relationship questionnaire (MBSRQ) and perceived stress scale scores

	Restrained Eating (DEBQ)		Emotional Eating (DEBQ)		External Eating (DEBQ)		Perceived Stres Scale-Total	
	r	*p*	r	*p*	r	*p*	r	*p*
Appearence Evaluation (MBSRQ)	-.063	.597	-.175	.141	.277*	.018	-.311**	.008
Appearence Orientation (MBSRQ)	.221	.063	-.091	.446	.043	.717	-.167	.160
Physical Competence Evaluation (MBSRQ)	.075	.534	-.059	.623	.182	.126	-.076	.525
Physical Competence Orientation (MBSRQ)	.086	.472	-.070	.557	.154	.198	-.233*	.049
Fitness, and Health/Illness Evaluation (MBSRQ)	-.097	.420	-.342**	.003	-.035	.772	-.335**	.004
Fitness, and Health/Illness Orientation (MBSRQ)	.221	.062	-.012	.923	-.069	.564	-.138	.249
Body Areas Satisfaction (MBSRQ)	-.127	.287	-.275*	.019	-.003	.981	-.364**	.002
Multidimensional Body–Self Relations Questionnaire (MBSRQ)-Total	.058	.631	-.213	.072	.091	.446	-.341**	.003
Perceived Stres Scale-Total	.114	.342	.382**	.001	.025	.835	1	

According to Table 6, the correlation of total scores and subscales of the athletes with various parameters is given. According to the information in this table, there are significant negative correlations between perceived stress and total scores of appearance evaluation, physical competence orientation, health evaluation, satisfaction with body areas and multidimensional body-self/self-relationship, while there is a positive correlation between perceived stress and emotional eating subscale (p<.05). Negative correlations were observed between emotional eating subscale and body image, satisfaction with body areas and health assessment subscales. A significant positive correlation was found between the external eating subscale and the appearance evaluation subscale (p<.05).

Discussion

Since perfectionist tendencies increase in individuals doing sports, their eating behaviors, stress states and body perceptions may be affected due to both performance and body appearance (Cash, 1990; Icbudak, 2021). In one study, it was found that there was no difference between the perceived stress status of tennis athletes and gender variable (Ilhan, 2021). In this study, the mean perceived stress scale scores showed a significant difference according to gender and stress levels of women were found to be higher (p< .05). In a study conducted with national wrestlers, it was reported that 12.9% of wrestlers between the ages of 18-35 had negative stress levels (Coşkun, 2011). In this study, it was found that perceived stress scale scores did not differ significantly between taekwondo and rowing athletes.

Eating disorders may be affected by psychological, individual, sociocultural and external factors related to competition in sports activities (Frideres & Palao, 2005). In some studies, it was observed that gender was effective on DEBQ scores (Andres et al., 2017; Nagl et al., 2016). In a study conducted with volleyball players, it was found that there was no significant difference between the DEBQ scores of individuals according to gender (Mutlu et al., 2022). In a study, the mean restrictive

eating scores of female athletes and male athletes were found to be 30.12 and 23.50, respectively. In line with these results, it was observed that female athletes tended to restrictive behavior in their diets due to fear of weight gain or the possibility of weight gain (İçbudak, 2021). In a study conducted in dancers, no statistically significant difference was found between DEBQ scores and gender (Felek, 2018). In this study, restrictive eating and emotional eating subscale mean scores of the eating behavior scale showed a significant difference according to gender, and restrictive and emotional eating behaviors were found to be higher in women compared to men (p<.05).

In a study on wrestling athletes, the mean scores of emotional, restrictive and external eating subgroups were found to be 24.4±9.6, 24.4±6.3 and 32.0±6.4, respectively. In 40.0% of the individuals in the study group, the restrictive eating subgroup score was found to be above the mean score of 27.6 (Coşkun, 2011). In this study, while there was no difference in restrictive eating and external eating subscales according to branches, the mean score of emotional eating subscale of the eating behavior scale was significantly higher in taekwondo athletes (29.63±14.21) than in rowing athletes (21.69±10.06) (p<.05).

Perceived stress has been found to increase eating behaviors related to the prediction of emotional eating behavior (Sims et al., 2008; Young, 2016; Elagöz & Çenesiz, 2022). In this study, a positive correlation was found between perceived stress and emotional eating subscale supporting these findings (p<.05). At the same time, significant negative correlations were observed between perceived stress and appearance appraisal, physical competence orientation, health appraisal, satisfaction with body areas and multidimensional body-self/self-relationship total scores.

Increased scores on the Multidimensional Body-Self Relationship Questionnaire (MBSRQ) indicate a healthy body and high self-image (Cash, 1990). In a study conducted in soccer players, a statistically significant difference was found between Appearance Orientation, Assessment of Physical Competence, Physical Competence Orientation, Health Assessment and gender variable and the scores of women were found to be higher than men. In terms of Health Orientation and Satisfaction with Body Areas, no significant difference was found between gender variables (Emin & Baştuğ, 2008). In this study, no significant difference was found in total scores and most of the subscales for body images according to gender, whereas the health assessment subscale showed a significant difference according to gender and men had higher scores than women (p<.05).

In wrestler athletes, the individuals in the study group scored higher in all questions of the MBSRQ scale and showed higher body and self-image compared to the control group (Coşkun, 2011). Studies have revealed the positive effects of physical activity on body image (Hausenblas & Gıacobbi, 2003). In this study, it was found that the total score for body images and the mean scores of physical competence orientation, health assessment and health orientation subscales differed significantly according to the branches and rowing athletes had higher mean scores (p<.05). At the same time, a negative correlation was observed between the emotional eating subscale and the body image subscales of satisfaction with body areas and health assessment. A significant positive correlation was found between the external eating subscale and the appearance evaluation subscale (p<.05).

It has been reported that various emotional states such as stress, anger, joy, boredom, sadness and fear affect eating behavior. This effect also affects all digestive stages such as emotional response to food, digestion, metabolism, eating motivation, eating speed, food selection, amount digested, and chewing (Macht, 2008). In one study, it was reported that higher food intake occurred in conditions such as depression, fatigue and distress, whereas lower food intake occurred in emotional states such as pain, tension and fear (Sevinçer & Konuk, 2013; Van Strein et al., 2009). Emotional appetite has been reported to cause individuals to consume more food than normal in negative emotions and states such as depression, loneliness and stress (Litwin et al., 2017). It has been observed that individuals who cannot express themselves in the presence of negative emotions tend to eat more than normal (Cotter & Kelly, 2018). On emotional appetite, it is generally stated that stress-related food intake is higher in women than in men (Bektaşoğlu, 2021). According to the information in this study, being anxious, angry, irritable, excited, happy and joyful significantly affected appetite according to gender (p<.05). It was observed that appetite decreased in women when they were anxious, angry and irritable, while appetite increased when they were excited, happy and joyful. In men, appetite increased when they were happy.

In a study, it was reported that 60.0% of male wrestling athletes were satisfied with their current body weight, that is, they did not have weight problems. It was stated that 58.3% of the individuals in the study group who were not satisfied with their

body weight wanted to gain weight. When satisfaction with body muscle ratios was examined, 56.7% were found to be satisfied with muscle ratios (Coşkun, 2011). In this study, no significant difference was observed between the athletes' self-assessment of body weight, muscle and fat weights according to gender, but most of them thought that they had a normal body composition (p>.05).

Conclusion and Recommendations

Since athletes are in competition, perfectionist tendencies can be seen more. This situation affects their eating behaviors, stress and body perceptions due to both their performance and body appearance. It is seen that the perceived stress level is significantly higher in female athletes compared to male athletes. According to their emotional states, the effect on appetite states differs compared to men. Restrictive eating and emotional eating behaviors were also found to be higher in women compared to men. Emotional eating subscale was found to be higher in taekwondo athletes compared to rowing athletes. In this sense, it is important to evaluate emotional eating behaviors in weightlifting athletes in branches where body weight is more prominent. Physical competence orientation, health assessment and health orientation towards body images were found to be higher in rowing athletes. Taking action to improve one's physical capacity, thoughts about personal health and taking action were found to be higher in rowing athletes. In order to control emotional eating behavior in individuals with emotional eating behavior, they must first be aware of which emotions cause emotional eating. When athletes are faced with various emotions such as stress, anxiety and excitement, it affects their emotional appetite and eating behaviors. If preventive treatment approaches are not taken, this may negatively affect the performance and health of athletes. In this case, approaches should be taken to increase the self-worth of athletes by providing trainings on psychological support and approach to athletes to both athletes and their peers, families and coaches during training seasons, competition seasons, taking into account peer, family and coach relationships. At the same time, it should be recommended that athletes seek support from dieticians specialized in this field for nutritional advice that will support them in this process, improve their mood and support a healthy microbiota environment. Coaches should consider the impact of stress and emotional eating behaviors on female athletes and develop individualized support programs. Athletes should regularly seek guidance from professional dietitians to ensure mindful eating habits.

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