


## The relationship of exercise addiction with alexithymia and orthorexia

### Egzersiz bağımlılığının aleksitimi ve ortoreksia ile ilişkisi

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#### ABSTRACT

**Objective:** Based on the hypothesis that exercise addiction must be in accordance with general rules of addiction, it may be associated with healthy eating obsession as orthorexia and emotion blindness as alexithymia. This study aimed to determine the relationship between exercise addiction level and alexithymia and orthorexia.

**Materials and Methods:** A cross-sectional survey was conducted on individuals who regularly exercise for more than 150 minutes a week. The descriptive characteristics of the participants were recorded, and the 'Exercise Addiction Scale, Teruel Orthorexia Scale, and Toronto Alexithymia Scale' were applied. According to the Exercise Addiction Scale, the athletes (n=95) were divided into two groups addicted ( $\geq 52$ ) and risky (<51). Toronto Alexithymia Scale was used to categorize individuals with 51 point cut of values 'non-alexithymic' and 'alexithymic'.

**Results:** Athletes were found to be 22.1% (n=21) risky, 77.9% (n=74) addicted, and 31.6% (n=30) alexithymic. There was a significant difference between the 'risky' and 'addicted' groups in all sub-dimension scores of the Exercise Addiction Scale ( $p=0.001$ ). There was a positive relationship between exercise addiction, exercise duration, orthorexia nervosa, and alexithymia at different levels from weak to high ( $p<0.05$ ).

**Conclusion:** Higher exercise addiction is a risk factor for alexithymia and orthorexia nervosa.

**Keywords:** Exercise, orthorexia nervosa, alexithymia

#### ÖZ

**Amaç:** 'Bağımlılık psikolojisi' bağlamında egzersiz bağımlılığının ortoreksia gibi sağlıklı beslenme takıntısı ve aleksitimi gibi duygü körlüğü ile bağlantı gösterebileceği hipotezinden yola çıkarak egzersiz bağımlılığı düzeyinin aleksitimi ve ortoreksia ile ilişkisinin belirlenmesi amaçlanmıştır.

**Gereç ve Yöntem:** Bu çalışma haftada 150 dakika üzerinde düzenli egzersiz alışkanlığı olan bireylere yönelik kesitsel anket araştırmasıdır. Katılımcıların (n=95) tanımlayıcı özellikleri kaydedilerek 'Egzersiz Bağımlılığı Ölçeği, Teruel Ortoreksia Ölçeği ve Toronto Aleksitimi Ölçeği' uygulandı. Egzersiz Bağımlılığı Ölçeği'ne göre sporcular egzersiz bağımlılığı açısından 'riskli (<51)' ve 'bağımlı ( $\geq 52$ ), Toronto Aleksitimi Ölçeği'ne göre de 51 puan sınır değer kabul edilerek 'non-aleksitimik' ve 'aleksitimik' olarak iki gruba ayrıldı.

**Bulgular:** Sporcuların %22,1'inin (n=21) riskli, %77,9'unun (n=74) bağımlı ve %31,6'sının (n=30) aleksitimik olduğu saptanmıştır. Egzersiz Bağımlılığı Ölçeği'nin tüm alt boyut puanlarında 'riskli' ve 'bağımlı' gruplar arasında anlamlı fark vardır ( $p=0,001$ ). Egzersiz bağımlılığı, egzersiz süresi, ortoreksia nervoza ve aleksitimi arasında zayıftan yüksek düzey aralığına kadar değişen pozitif bir ilişki vardır ( $p<0,05$ ).

**Sonuç:** Daha yüksek egzersiz bağımlılığı, aleksitimi ve ortoreksia nervoza için bir risk faktörü olabilir.

**Anahtar Sözcükler:** Egzersiz, ortoreksia nervoza, aleksitimi

#### INTRODUCTION

Regular exercise is recommended by health professionals to prevent numerous health problems (1). Those mainly are diabetes, osteoporosis, coronary artery diseases, hypertension, dementia and cancer, prominently breast and colon cancer. In addition, regular exercise reduces mortality (1,2). Therefore, exercise is accepted and recommended as a medicine (2,3). At least 150-200 minutes of moderate-intensity aerobic physical activity per week or at least 75-150 minutes of vigorous-intensity aerobic physical activity, or a balanced combination of these are recommended for healthy pe-

ople between 18-64 years of age (4). On the other hand, uncontrolled exercise at the level of addiction can be associated with various health problems (5,6).

For the diagnosis of exercise addiction, the same diagnostic criteria of the behavioral addictions in DSM-IV (7) were applied to sports practice, and exercise addiction criteria were developed (6). These criteria are tolerance, withdrawal symptoms, intention, lack of control, time, reduction of other activities, and continuance. The presence of at least 3

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of these criteria in a 12-month period and causing clinical distress and impairment is called exercise addiction (8).

Some dietary methods to promote health may not be correct and may even have harmful consequences. The pursuit of “extreme dietary purity” with an exaggerated focus on food can lead to a disordered eating behavior called “orthorexia nervosa” (7,9,10). For the diagnosis of orthorexia nervosa, obsession with a diet believed to be a healthy diet and consequent clinically significant deterioration is required (11). Orthorexia nervosa is not a DSM diagnosis as of yet. In a study evaluating exercise activity, addiction and eating habits, it was shown that orthorexia symptoms were positively correlated with aerobic and strength training exercise levels (12). It was revealed that those with intense orthorexia symptoms directed themselves to exercise in order to improve their physical and mental health. However, it has been stated that this strong motivation may also lead to exercise addiction, which is characterized by the need to follow a strict and intense exercise program even in the presence of injury (12). In another study, an online questionnaire was applied to 608 people (mean age: 27.5±11.0; female: 76.5%) and it was shown that there was a significant relationship between exercise addiction and orthorexic eating, but the coefficients were smaller than expected and higher in men. No information was given about the duration and level of participation in sports of the volunteers who participated in this study (13). Other studies also investigated recreational athletes and non-athletes, but they were not carried out in this population. Females are more prone to eating disorders than men. The risk of eating disorders appears to be particularly high among models, dancers, and gymnasts who need to be mindful of maintaining a certain weight (14).

Alexithymia is defined as the inability to identify or express emotions. It consists of the following components; difficulty in describing or verbalizing one's emotions, insufficiency or inability to experience emotions, externally oriented cognitive style, and reduced imaginative process (7,15,16). Since it has been understood that alexithymia is not specific to psychosomatic disorders, it has been evaluated as a risk factor for medical, psychiatric or behavioral problems. It has been determined that high alexithymia levels are associated with psychosomatic diseases, depressive disorders, anxiety disorders, substance abuse disorder and personality disorders (17). Alexithymia is most commonly measured using the Toronto Alexithymia Scale, consisting of three main factors (16).

We think that if exercise addiction is associated with 'general addiction psychology', it may show a connection with healthy eating obsession like orthorexia and emotion blindness like alexithymia. Our hypothesis is that exercise addic-

tion is associated with orthorexia nervosa and alexithymia, and the scale scores of athletes with exercise addiction will be different compared to those without exercise addiction. In summary, it is aimed to analyze whether the applied scale scores will make a difference in groups with and without exercise addiction, and to determine the relationship between exercise addiction level and alexithymia and orthorexia.

## **MATERIAL and METHODS**

Our study is a cross-sectional survey conducted between 01.01.2022 and 01.06.2022 for individuals living in the provinces of Ankara and Isparta and exercising regularly. The research was started after the approval of the local ethics committee dated 21.12.2021 and numbered 54/3.

Individuals with regular exercise habits were informed about the study and volunteers were included. Individuals who did not have regular exercise habits (less than 150 minutes of exercise per week) were excluded from the study. The descriptive characteristics of the participants including gender, age, height, body weight, exercise, and smoking habits were recorded. Then, the 'Exercise Addiction Scale, Teruel Orthorexia Scale, and Toronto Alexithymia Scale, which were adapted into Turkish were applied to the participants.

### ***Exercise Addiction Scale***

In order to evaluate exercise addiction, it was preferred to use an assessment tool developed specifically for Turkish culture rather than Turkish language-adapted scale. Exercise Addiction Scale consists of 17 items and 3 sub-factors. Sub-factors are 'excessive focus and mood swings', 'postponement of individual-social needs and conflict', and 'tolerance development and passion'. Those with 1-17 points are in the 'normal group', 18-34 points in the 'low-risk group', and 35-51 points in the 'risk group', 52-69 points in the 'addicted group', 70-85 points are categorized as a 'highly addicted group'. Cronbach Alpha is a highly reliable scale with a total coefficient of 0.88 and a test-retest reliability coefficient of 0.90, and its original language is Turkish (8).

### ***Teruel Orthorexia Scale***

It consists of 17 items and 2 sub-dimensions to determine the participants' beliefs and behaviors towards healthy eating. The sub-dimensions are healthy orthorexia consisting of 9 items and orthorexia nervosa consisting of 8 items. Healthy orthorexia assesses the tendency to have an interest in healthy food and nutrition, while orthorexia nervosa assesses the negative social and emotional effects of obsessively trying to reach a pure way of eating. It is a 4-point Likert-type self-reported scale (18). There is a Turkish validity

and reliability study. The Cronbach's Alpha coefficient for the healthy orthorexia sub-dimension of the scale was 0.86, and 0.81 for the orthorexia nervosa sub-dimension (19).

### Toronto Alexithymia Scale

It is a 5-point Likert scale consisting of 20 items. It has 3 sub-dimensions: 'Difficulty Identifying Feelings', 'Difficulty Describing Feelings', and 'Externally-Oriented Thinking' (20–22). Questions 4, 5, 10, 18, and 19 in the scale are reversed in terms of scoring. The Turkish version has validity and reliability, and the Cronbach Alpha total coefficient is reported as 0.78 (23). The cut-off values recommended for the Turkish version of the scale are less than "51" to form a group without alexithymia, and more than "59" to form a pure alexithymic group (23).

### Categorization of Athletes

Since there was no individual in the 'normal' group with a score of 1-17 on the Exercise Addiction Scale in the data set of our study, the athletes were divided into two groups 'risky (18-51 points)' and 'addicted (52-85 points)' in terms of exercise addiction. Since the cut-off value of the Toronto Alexithymia Scale was accepted as 51 points, two groups are formed as 'non-alexithymic' and 'alexithymic'.

### Statistical Analysis

SPSS version 23.0 package program was used to analyze the data. Shapiro-Wilk test was used to check the conformity to the normal distribution and it was determined that the data did not show normal distribution. For this reason, the Mann Whitney U test and Chi-Square test with Monte Carlo correction were used for difference analysis between groups.

Spearman correlation test was used to determine the variables associated with exercise addiction. Data were presented as percent (%), frequency (n), and mean±standard error (min-max). The p-value was accepted as significant at the 0.05 level. The r-value was interpreted as a weak correlation between 0.2-0.4, a moderate correlation between 0.4-0.6, a high correlation between 0.6-0.8, and a very high correlation if higher than 0.8.

### Power Analysis

Correlation  $\rho$  H1 (Rho) was accepted as 0.3 and  $\alpha$  err prob was accepted as 0.05 in the posthoc power analysis (G\*Power version 3.1.9.6, Germany), while Power (1- $\beta$  err prob) was 0.847.

## RESULTS

A total of 95 athletes participated in the research. According to the Exercise Addiction Scale, 22.1% (n=21) of the athletes were determined as risky, and 77.9% (n=74) were found to be highly dependent. According to the cut-off value of the Toronto Alexithymia Scale, 68.4% (n=65) of the participants were non-alexithymic, while 31.6% (n=30) were found to be alexithymic. The difference between the descriptive characteristics of risky and dependent athletes according to their exercise addiction status was found in the use of drugs for the treatment of a chronic disease (p=0.044). No difference was found between other variables (p>0.05), (Table 1). The mean weekly exercise duration of all participants was 439.79±35.71 minutes and there was no difference between the risky and addicted groups (p=0.333).

**Table 1.** The descriptive characteristics of athletes

	All (n=95)	Group risky (n=21)	Group addicted (n=74)	p
Age (year)	30.22±1.18	31.81±2.68	29.77±1.32	0.540
Gender (Female/Male, %)	47.4 / 52.6	52.4 / 47.6	45.9 / 54.1	0.602
Body Mass Index (kg/m <sup>2</sup> )	22.62±0.40	22.87±0.83	22.55±0.45	0.840
Smoking Habits (%)				0.293
Yes	11.6	19.0	9.5	
No	74.7	76.2	74.3	
Left	13.7	4.8	16.2	
Exercise History (year)	10.06±1.27	8.71±1.42	10.45±1.58	0.907
Exercise Duration (min/week)	439.79±35.71	375.24±54.38	458.11±43.10	0.333
Presence of Chronic Disease (%)	21.1	33.3	17.6	0.120
Medication usage for treatment (%)	14.7	28.6 <sup>a</sup>	10.8 <sup>b</sup>	<b>0.044*</b>
Usage of ergogenic products (%)	49.5	38.1	52.8	0.237

Mann Whitney U test and Chi-Square test with Monte Carlo correction were used. a-b: there is a difference between the groups. \*: p-value is less than 0.05. min/wk: minutes/week.

There was a difference between the groups in all sub-dimension scores of the Exercise Addiction Scale (p=0.001). On the other hand, no difference was found between the

groups in terms of the Teruel Orthorexia Scale and Toronto Alexithymia Scale total scores and sub-dimension scores (Table 2).

**Table 2.** The scores obtained from the applied scales

	All (n=95)	Grup risky (n=21)	Grup addicted (n=74)	p
<i>Exercise Addiction Scale (score)</i>	58.29±1.02	44.71±1.50	62.15±0.78	<b>0.001*</b>
Excessive Focus and Mood Swings	28.35±0.49	22.33±1.31	30.05±0.30	<b>0.001*</b>
Postponement of Individual-Social Needs and Conflict	17.24±0.49	13.00±0.72	18.45±0.52	<b>0.001*</b>
Tolerance Development and Passion	12.71±0.33	9.38±0.59	13.65±0.31	<b>0.001*</b>
<i>Teruel Orthorexia Scale (score)</i>				
Healthy Orthorexia	13.86±0.57	12.14±1.27	14.35±0.62	0.075
Orthorexia Nervosa	3.84±0.40	2.90±0.61	4.11±0.48	0.313
<i>Toronto Alexithymia Scale (score)</i>	47.83±1.14	47.95±2.77	47.80±1.25	0.774
Difficulty Identifying Feelings	14.80±0.57	14.86±1.39	14.78±0.62	0.784
Difficulty Describing Feelings	11.60±0.41	11.24±0.95	11.70±0.45	0.344
Externally-Oriented Thinking	21.43±0.39	21.86±0.80	21.31±0.45	0.300
<i>Categorization of Alexithymia (%)</i>				0.735
Non-alexithymic	68.4	71.4	67.6	
Alexithymic	31.6	28.6	32.4	

Mann Whitney U test and Chi-Square test with Monte Carlo correction were used. \*: p-value is less than 0.05.

It was determined that exercise addiction was correlated with age, exercise duration, orthorexia nervosa, and alexithymia at various levels (Table 3). A weak positive correlation was found between the total score of the Exercise Addiction Scale and the following items; orthorexia nervosa, the Toronto Alexithymia Scale total score, and the sub-dimension scores of 'Difficulty Identifying Feelings' and 'Difficulty Describing Feelings' (Table 3). A weak positive corre-

lation was found between the 'Postponement of Individual-Social Needs and Conflict' sub-dimension score and the following; exercise duration, orthorexia nervosa, Toronto Alexithymia Scale total score, and 'Difficulty Identifying Feelings and 'Difficulty Describing Feelings' sub-dimension scores (Table 3).

**Table 3.** Variables associated with Exercise Addiction Scale score

	Exercise Addiction Scale	Excessive Focus and Mood Swings	Postponement of Individual-Social Needs and Conflict	Tolerance Development and Passion
Age	r	-0.132	-0.022	-0.050
	p	0.204	0.835	0.628
Body Mass Index	r	-0.005	0.008	-0.066
	p	0.963	0.936	0.524
Exercise History (year)	r	-0.012	0.021	-0.053
	p	0.907	0.837	0.610
Exercise Duration (min/week)	r	0.158	0.141	<b>0.222*</b>
	p	0.126	0.174	0.031
<i>Teruel Orthorexia Scale</i>				
Healthy Orthorexia	r	0.169	0.190	0.127
	p	0.101	0.065	0.219
Orthorexia Nervosa	r	<b>0.206*</b>	0.100	<b>0.254*</b>
	p	0.045	0.337	0.013
<i>Toronto Alexithymia Scale</i>				
Difficulty Identifying Feelings	r	<b>0.290**</b>	-0.014	<b>0.365**</b>
	p	0.004	0.895	0.0001
Difficulty Describing Feelings	r	<b>0.271**</b>	0.012	<b>0.357**</b>
	p	0.008	0.908	0.001
Externally-Oriented Thinking	r	<b>0.264**</b>	-0.074	<b>0.366**</b>
	p	0.010	0.474	0.001
Exercise Addiction Scale	r	0.058	-0.004	0.065
	p	0.576	0.967	0.534
Excessive Focus and Mood Swings	r	1.000	<b>0.700**</b>	<b>0.758**</b>
	p	-	0.001	0.001
Postponement of Individual-Social Needs and Conflict	r	<b>0.700**</b>	1.000	<b>0.253*</b>
	p	0.001	-	0.014
Tolerance Development and Passion	r	<b>0.758**</b>	<b>0.253*</b>	1.000
	p	0.001	0.014	-
Exercise Addiction Scale	r	<b>0.756**</b>	<b>0.522**</b>	<b>0.348**</b>
	p	0.001	0.001	0.001

Spearman correlation test was used. \*: Correlation is significant at the 0.05 level (2-tailed), \*\*: Correlation is significant at the 0.01 level (2-tailed). If r -0.2-0.4 is weak correlation, r=0.4-0.6 is medium correlation, r=0.6-0.8 is high correlation, r>0.8 is very high correlation. min/wk: minutes/week.

A weak negative correlation was determined between the 'Development of Tolerance and Passion' sub-dimension and age. This sub-dimension showed a weak positive corre-

lation with the Toronto Alexithymia Scale total score and the 'Difficulty Identifying Feelings' sub-dimension scores (Table 3). No relationship was found between the 'excessive

focus and mood swings' sub-dimension of the Exercise Addiction Scale with any of the variables examined (Table 3).

## DISCUSSION

There are not many studies investigating the existence of a relationship between exercise addiction and alexithymia. In the study of Manfredi et al., 137 individuals doing sports were evaluated and according to the Toronto Alexithymia Scale consisting of 20 questions, 29.93% (n=41) were found to be alexithymic. For the presence of alexithymia, no significant difference was found in terms of gender, age and marital status; however, individuals with lower education levels were found to have the highest value on average (24). In our study, 68.4% (n=65) of 95 athletes were found to be alexithymic and similarly, it was not associated with gender and age. However, marital status and education level were not evaluated in our study. In a study comparing sportive and non-sportive students from Italy, there were significant differences between those who did and did not do sports according to the total scores obtained from the Toronto Alexithymia Scale ( $p < 0.05$ ). In particular, it was observed that the sportive group had a higher average score on the extraverted thinking subscale compared to the non-sportive group ( $p < 0.001$ ). This study highlights that the female gender attaches more importance to body image than the male gender, showing that women are fond of lower body weights. It has been reported that bodily perception associated with the inability to recognize emotions might cause exercise addiction (25). Unlike this study, our study was conducted on individuals who do sports for more than 150 minutes a week, and although there was a difference between the groups in terms of exercise addiction, no difference was found between the groups in terms of Toronto Alexithymia Scale total scores and sub-dimension scores. In a study comparing amateur swimmers who train 6 hours a week (n=10) and amateur expert swimmers who train 22 hours a week (n=10) using the discourse analysis method, it was found that the amateur expert swimmer group showed higher alexithymic verbal behavior (26). In our study, unlike this study, the Toronto Alexithymia Scale was used instead of the discourse analysis method. Gori et al. found a significant positive correlation between exercise addiction and age, exercise addiction and alexithymia in their study on 288 Italian individuals who regularly exercise (at least 3 times a week, 30 min/day) (4). In their study, the overall effect of alexithymia on exercise addiction was evaluated as significant and positive. Emotion regulation theory proposes that physical activity can lead to improvements in positive moods and reductions in negative moods such as anxiety, irritability, and guilt. Accordingly, some people may eventually use exercise to cope with stress, albeit addicti-

vely (4). In our study, a weak negative correlation was determined between age and 'Development of Tolerance and Passion', a sub-dimension of the exercise addiction scale. In addition, although a high level of relationship between exercise addiction and alexithymia could not be demonstrated, a weak positive relationship was found between exercise addiction and alexithymia, and the sub-dimensions of 'Difficulty Identifying Feelings' and 'Difficulty Describing Feelings', similar to the studies mentioned above. Similarly, a weak positive correlation was found between 'Postponement of Individual-Social Needs and Conflict', a sub-dimension of exercise addiction, and 'Difficulty Identifying Feelings' and 'Difficulty Describing Feelings', which are sub-dimensions of alexithymia. The 'Development of Tolerance and Passion' sub-dimension of exercise addiction and Alexithymia and 'Difficulty Identifying Feelings' sub-dimension showed a weak positive correlation (4). In our study, no relationship between the 'Excessive Focus and Mood Swings' sub-dimension of the Exercise Addiction Scale was determined with any of the variables examined. This might be resulted from the similar intensity and the duration of exercise in both groups. ( $10.06 \pm 1.27$  years,  $439.79 \pm 35.71$  min/week).

In a study conducted with a total of 140 volunteers who participated in bodybuilding, crossfit, calisthenics, powerlifting or fitness courses, a relationship was shown between exercise addiction and orthorexia. In addition, alexithymia features have been found in individuals who are addicted or at risk of addiction. As long as the weekly training amount was low, there was a statistically significant weak positive correlation between exercise addiction and orthorexia nervosa ( $r = 0.28$ ;  $p < 0.01$ ). The Exercise Addiction Scale total score seems to be weakly positively correlated with the alexithymia total score ( $r = 0.26$ ;  $p < 0.01$ ). A positive correlation was shown between "difficulty identifying feelings" and some sub-headings of exercise addiction scale in particular. It has been reported that the results could not be fully correlated because the variables had low correlation. No relationship was found between orthorexia and the Toronto Alexithymia Scale's "Externally-Oriented Thinking" factor, except for a low positive correlation ( $r=0.18$ ;  $p < 0.05$ ), (27). The results of this study show that exercise addiction was associated with orthorexia nervosa and alexithymia at various levels, similar to our study. In our study, a weak positive correlation was found between the total score of the Exercise Addiction Scale, orthorexia nervosa, the Toronto Alexithymia Scale total score, the sub-dimension scores of 'Difficulty Identifying Feelings and 'Difficulty Describing Feelings'. Similarly, other weak positive relationships were found. Unlike the above-mentioned

study, participants of our study had higher weekly training durations.

Although these results do not fully overlap with each other, they reveal that addiction situations do not only consist of substance use, alcohol use and gambling, but can also manifest themselves with exercise addiction. A healthy lifestyle obsession may trigger not only healthy eating, but also exercise addiction to get rid of disturbed moods. In a small number of studies conducted on athletes, the relationship between exercise addiction and orthorexia nervosa and/or alexithymia was found to be weak. Some of the researchers concluded that encouraging people to participate in physical activity and exercise during their youth can reduce psychological problems, help control these and improve their mental health. These results are also compatible with other studies examining the effects of exercise on mental health: It is known and used as an effective treatment method to reduce the symptoms of depression (28). It has been shown that aerobic exercise contributes positively to the treatment of patients diagnosed with anxiety disorder (29). From this point of view, athletes who exercise for a long time and high intensity may have adjusted to emotion regulation theory and improved their mood, even if they started sports to cope with stress. In addition, athletes who exercise intensely will need more food due to the high need for calories. However, since the obsession with healthy eating puts orthorexic individuals under psychological pressure, they tend to give up consuming food. Therefore the orthorexic individual starts to lose weight, as in anorexia nervosa eating disorder (30). In this case, it is expected that athletes who do intense exercise will not be able to meet their calorie needs and resulting in poor performance or injury. This may cause an interruption in exercise or failure to reach the goal. But the reality is that there is not a meaningful exercise addiction cut-off score, people are all addicted at varying levels and that level seems to be associated with orthorexia and alexithymia according to this study.

The major limitation of this study is that the participants are not selected from specific sports branches. Moreover, they could not be divided into low and high weekly training durations. Although observed power was acceptable, it should be noted as a limitation that the "risky" and "addicted" groups were of different sizes.

## CONCLUSION

Higher exercise addiction is actually a risk factor for alexithymia and orthorexia nervosa. It is thought that there is a need for studies on sports branches where visuality is at the forefront.

## Ethics Committee Approval / Etik Komite Onayı

The approval for this study was obtained from Suleyman Demirel University, Clinical Research Ethics Committee, Isparta, Türkiye (Decision no: 54/3 Date: 21.12.2021).

## Conflict of Interest / Çıkar Çatışması

The authors declared no conflicts of interest with respect to authorship and/or publication of the article.

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## Author Contributions / Yazar Katkıları

Concept – AÖ, SE; Design - AÖ, SE; Supervision – AÖ, SE; Materials – AÖ, SE; Data Collection and/or Processing – AÖ, GB, SE; Analysis and Interpretation – SE; Literature Review – AÖ, SE, GB; Writing Manuscript - AÖ, SE; Critical Reviews - AÖ, GB, SE

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