

The Mediating Role of Narcissistic Attitudes in Exercise Addiction and Self-Esteem Among Referees

Hakemlerin Egzersiz Bağımlılığı ve Benlik Saygılarında Narsistik Tutumlarının Aracı Rolü

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ABSTRACT

This study examines the relationship between exercise addiction and self-esteem among referees, investigating the mediating role of narcissistic attitudes in this relationship. The effects of physical activity on individuals' psychological health have long been a subject of debate in the fields of psychology and sports science. This study aims to understand the interactions between exercise addiction, self-esteem, and narcissistic personality traits by statistically evaluating their relationships. The research was conducted on 300 referees selected using a random sampling method. Data collection involved a personal information form developed by the researchers, the Exercise Addiction Scale, the Rosenberg Self-Esteem Scale, and the Narcissistic Personality Inventory. Data were collected from participants via Google Forms, and SPSS 25.0 and SPSS Process 4.0 software were used for data analysis. The analyses revealed a significant positive correlation between exercise addiction and self-esteem, but the level of this correlation varied with narcissistic personality traits. These findings suggest that exercise can be a supportive factor for individuals' psychological well-being, but excessive exercise may carry potential risks associated with certain personality traits, particularly in individuals with narcissistic tendencies. The study's results highlight the importance of considering not only the physical but also the psychological dimensions of exercise habits. These findings provide significant contributions to developing strategies that can be implemented to promote more balanced and controlled exercise behaviors in this field.

Keywords: Exercise addiction, self-esteem, narcissistic personality

Öz

Bu çalışma, hakemlerin egzersiz bağımlılığı ve benlik saygısı arasındaki ilişkiyi incelerken, narsistik tutumların bu ilişkideki aracı rolünü araştırmaktadır. Fiziksel aktivitenin bireylerin psikolojik sağlığı üzerindeki etkileri, psikoloji ve spor bilimleri alanlarında uzun süredir tartışılan bir konu olmuştur. Bu çalışma, egzersiz bağımlılığı, benlik saygısı ve narsistik kişilik özellikleri arasındaki ilişkileri istatistiksel olarak değerlendirerek, bu değişkenlerin birbirleriyle olan etkileşimlerini anlamayı amaçlamaktadır. Araştırma, rastgele örnekleme yöntemiyle belirlenen 300 hakem üzerinde gerçekleştirilmiş olup, veri toplama sürecinde araştırmacılar tarafından geliştirilen bir kişisel bilgi formu, Egzersiz Bağımlılığı Ölçeği, Rosenberg Benlik Saygısı Ölçeği ve Narsistik Kişilik Envanteri kullanılmıştır. Veriler, katılımcılardan Google form aracılığıyla toplanmış ve elde edilen verilerin analizi için SPSS 25.0 ve SPSS Process 4.0 yazılımları kullanılmıştır. Yapılan analizler sonucunda, egzersiz bağımlılığı ile benlik saygısı arasında pozitif yönde anlamlı bir ilişki bulunmuş, ancak narsistik kişilik ile bu ilişkinin düzeyi değişkenlik göstermiştir. Bu bulgular, egzersizin bireylerin psikolojik iyilik hallerini destekleyici bir faktör olabileceğini, fakat aşırı egzersizin, özellikle narsistik eğilimleri olan bireylerde, belirli kişilik özellikleriyle ilişkili potansiyel riskler taşıyabileceğini ortaya koymaktadır. Çalışmanın sonuçları, egzersiz yapma alışkanlıklarının sadece fiziksel değil, aynı zamanda psikolojik boyutlarını da göz önünde bulundurmanın önemini vurgulamaktadır. Bu bulgular, bu alanda daha dengeli ve kontrollü egzersiz davranışlarını teşvik etmek amacıyla uygulanabilecek stratejiler geliştirmek için önemli katkılar sağlamaktadır.

Anahtar Kelimeler: Egzersiz bağımlılığı, benlik saygısı, narsistik kişilik

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Introduction

Exercise is an activity that individuals engage in regularly to maintain and improve their physical and mental health. Regular exercise not only has physical benefits such as improving cardiovascular health, muscle strength, and flexibility, but also provides psychological advantages such as reducing stress and enhancing mood. However, excessive exercise can lead to dependency levels that negatively affect an individual's quality of life. Addiction is a chronic condition characterized by a mandatory need and use of substances that create habits, and it is a multifaceted biological, psychological, and social disorder that negatively impacts the individual's physical and mental health (Biçer, 2025; Hesse, 2006). Exercise addiction is defined as the uncontrollable and obsessive desire to exercise to the extent that it impairs the individual's physical, social, and psychological functioning (Goodwin et al., 2014; Hausenblas & Downs, 2002). It is characterized by an increasing intensity, severity, and frequency of exercise that develops beyond the individual's control. This situation leads to reduced time spent with social environments and causes the individual's daily life to become predominantly focused on exercise (Tekkurşun-Demir & Türkeli, 2019). The term "exercise addiction" was initially used to highlight the beneficial aspects of habitual exercise, as compared to drug or alcohol abuse or other self-destructive behaviors (Glasser, 1976).

Self-esteem refers to the individual's overall evaluation of themselves and reflects the degree to which one feels valuable, adequate, and successful. Self-esteem is defined as the total sum of one's feelings and thoughts towards oneself. According to Rosenberg, self-esteem is a fundamental psychological structure that reflects how an individual perceives and evaluates themselves and can be shaped in either a positive or negative direction (Rosenberg, 1965). Self-esteem promotes an individual's acceptance of their positive aspects and their openness to improving and changing their negative aspects, thus supporting their satisfaction with themselves and self-acceptance (Baumeister et al., 2003). High self-esteem contributes to more positive experiences in life, while low self-esteem is associated with depression, anxiety, and other psychological issues. It is suggested that individuals who engage in sports and exercise generally have higher self-esteem. However, in some cases, the relationship between exercise addiction and self-esteem may become complex (Josephs et al., 1992).

Narcissism is a personality trait characterized by excessive admiration of oneself, a sense of superiority over others, and a lack of empathy (Raskin & Hall, 1979). The concept of narcissism is rooted in the Greek myth of Narcissus. According to the myth, the hunter Narcissus, when leaning to drink water from a river, sees his reflection in the water and falls in love with it. Unable to tear himself away from his reflection, he neither drinks nor eats for days and eventually dies. The concept of narcissism, parallel to this mythological story, is used to refer to an excessive admiration of oneself. In the Turkish Language Institution (TDK) dictionary, narcissism is defined as "self-love" (TDK, 2021; Turan, 2022). Narcissistic individuals typically need external approval and admiration and are sensitive to criticism. In the context of exercise, narcissistic tendencies may be related to an excessive focus on physical appearance, which can lead to intensive exercise behaviors.

The aim of this study is to examine the mediating role of narcissistic attitudes in the relationship between exercise addiction and self-esteem among referees. Referees are individuals who ensure impartial decisions between two competing teams or individuals, mediating the game according to the rules (Sevinç et al., 2021). Refereeing is an integral part of sports and is a profession that requires decision-making under high stress and pressure. Therefore, understanding the psychological characteristics and behaviors of referees is essential for improving both their professional performance and overall quality of life.

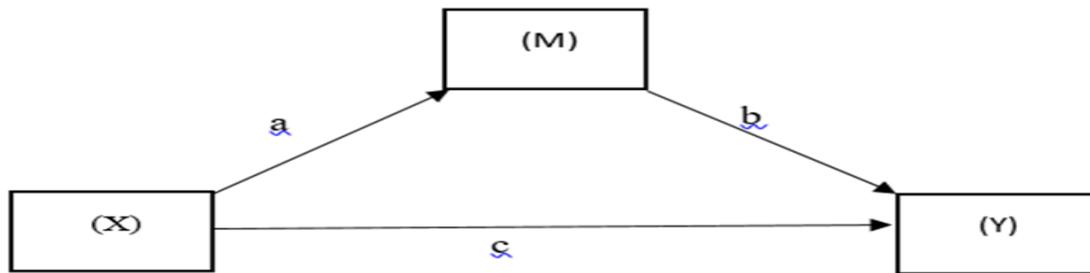
In recent years, exercise addiction, self-esteem, and narcissism have increasingly become topics of interest in both national and international literature (Aslan, 2021; Katra, 2021; Kaya, 2022; Ordu, 2022; Uçar, 2019; Yılmaz, 2022). The relationships between exercise addiction, self-esteem, and narcissism have been increasingly researched in the literature. This study investigates the mediating role of narcissistic attitudes in the relationship between exercise addiction and self-esteem among referees. The findings contribute significantly to understanding the complex interactions between exercise addiction, self-esteem, and narcissism.

Methods

Design

This research was designed within the framework of the basic instrumentality model to determine the role of the narcissistic attitude instrument in the referees' exercise flow and self-esteem. The basic instrumentality model can be used as a path analysis to clarify the process in which the independent variable affects the dependent variable (MacKinnon et al., 2007).

Figure 1.
Basic mediation model



As presented in Figure 1, the direct effect of exercise on narcissistic attitude is expanded by a , the effect of narcissistic expression on self-esteem by b , and the effect of exercise change on self-esteem by c . The effect of narcissistic ability on the effect of exercise support on self-esteem (indirect effect) is shown by c' .

Following these models, the following hypotheses are the conditions:

- H1: Positive effects of narcissistic effect of exercise.
- H2: Exercise positively affects self-esteem.
- H3: Narcissistic attitude positively affects self-esteem.
- H4: Narcissistic attitudes have a mediating role in the relationship between exercise flow and self-esteem.

Study Group

The study group of this research consists of a total of 300 referees working in different leagues. The participants were determined by considering demographic variables such as gender, education level, marital status. The study group was formed using the random sampling method.

Data Collection Tools

Personal Information Form:

The personal information form used in the study was prepared to determine the demographic and professional characteristics of the participants. The form included information on gender, educational status, and marital status from the participants.

Exercise Addiction Scale:

The exercise addiction of the participants in the study was determined with the Exercise Addiction Scale (EBÖ) developed by Tekkurşun-Demir et al., (2018). The scale consists of three sub-dimensions: "excessive focus and emotional change", "delay of individual-social needs and conflict", and "development of tolerance and passion." The first 7 items constitute the "excessive focus and emotional change" sub-dimension, the next 6 items constitute the "delay of individual-social needs and

conflict” sub-dimension, and the last 4 items constitute the “development of tolerance and passion” sub-dimension. There is no reverse item in the scale consisting of 17 items. The Cronbach Alpha coefficient for the scale’s excessive focus and emotional change sub-dimension was 0.83; The Cronbach Alpha coefficient for the postponement of individual-social needs and conflict sub-dimension is 0.79; the Cronbach Alpha coefficient for the development of tolerance and passion sub-dimension is 0.77.

Rosenberg Self-Esteem Scale:

In this study, the sub-category of the Rosenberg self-esteem scale consisting of 10 questions was used. The answers given to each question were numerically categorized and grouped as high self-esteem (0-2 points), medium self-esteem (2.1-4 points) and low self-esteem (4.1-6 points) according to the total score obtained from all questions. The adaptation study of the self-esteem scale to Turkish was carried out by (Çuhadaroğlu, 1986). The Rosenberg self-esteem scale is a four-point Likert-type scale with a total of ten items, five positive and five negative. These positive and negative questions are listed consecutively. The scale gives a general value for the person. The lowest value that can be taken here is 10, and the highest value is 40. Since self-esteem is considered a one-dimensional concept, the total score was taken into account (Corwyn, 2000). To evaluate the test; Items 1, 2, 3, 4, 6, 7: Very true=4, True=3, False=2, Very false=1 point; Items 3, 5, 8, 9, 10:

Narcissistic Personality Inventory-13 (NKE-13):

The NPI-13 scale, which Doğan & Çolak (2020) adapted to Turkish and Gentile et al. (2013) consists of three dimensions (authority, exhibitionism and exploitation) and 13 statements, was used. The scale uses a 5-point Likert System.

Statistical Analysis

SPSS 25.0 and SPSS Process 4.0 programs were used in the analysis of the data. Frequency analysis was performed to determine the demographic characteristics of the first sample during the data analysis process. Normality, kurtosis and skewness scores and their cut-off values were examined using (George & Mallery, 2010). Cronbach Alpha coefficient was calculated to measure the reliability of the scales. Then, in order to determine the mediating role of narcissistic attitudes of referees on exercise addiction and self-esteem, analyses were conducted to determine the relationships and mediation between variables within the model framework (Figure 1) created using Process Macro 3.5 for SPSS (Model 4) tool (Hayes, 2018). The results obtained from the model were interpreted using standardized path estimate (β) scores and explained variance (R²) values. In the bootstrap method, deviation-corrected confidence intervals were created at the 95% significance level for indirect effects using 5,000 repetition samples. For the indirect effect, if the confidence interval is above or below zero, this supports that the mediation effect is significant (Preacher & Hayes, 2008).

Results

Table 1.
Demographic information

Variables		f	%
Gender	Woman	142	47.3
	Male	158	52.7
Educational Status	High school	23	7.7
	University	255	85.0
	Postgraduate	22	7.3
Marital status	Married	250	83.3
	Single	50	16.7
Total		300	100

It is seen that 52.7% of the participants are male and 47.3% are female. The data regarding the level of education show that the majority of the sample (85.0%) are university graduates, 7.7% have high school education, and 7.3% have postgraduate education. When evaluated in terms of marital status variable, it was determined that 83.3% of the participants

are married and 16.7% are single. These findings reveal that the sample consists mainly of individuals with a higher level of education and who are married.

Table 2.
Descriptive values of the scales

Variables	Minimum	Maksimum	\bar{x}	SD	Kurtosis	Distortion
Exercise Addiction	24.00	85.00	56.90	10.58	0.163	0.240
Self Esteem	0.41	4.34	2.11	0.75	0.306	-0.389
Narcissistic Personality	14.00	65.00	40.83	10.40	0.195	-0.186

Table 2 shows the distribution of the scores of the measurement tools used. According to the findings in the table, the values obtained by the participants from the scales were determined as 56.90 ± 10.58 for the Exercise Addiction Scale, 2.11 ± 0.75 for the Rosenberg Self-Esteem Scale and 40.83 ± 10.40 for the Narcissistic Personality Inventory. When the Empathy Scale in the Sports Environment was examined, it was seen that the values obtained were 50.40 ± 8.42 . In this direction, it can be said that the data met the normality distribution condition.

Table 3.
Pearson correlation analysis results for variables

	Exercise Addiction	Self Esteem	Narcissistic Personality
Exercise Addiction	1		
Self Esteem	.258*	1	
Narcissistic Personality	.260*	.100*	1

According to Table 3; it was determined that there was a significant and positive relationship between the exercise addiction and self-esteem of the participants ($r = .258$; $p < .05$), a significant and positive relationship between exercise addiction and narcissistic personality ($r = .260$; $p < .05$) and no relationship between self-esteem and narcissistic personality ($r = .100$; $p > .05$). Bootstrap regression analysis was performed with the Process module to test the mediating role of narcissistic personality in the referees' exercise addiction and self-esteem, and the analysis findings are shown in Figure 2 and Table 4.

Figure 2.

Bootstrapp Regression Analysis Findings with Process Module

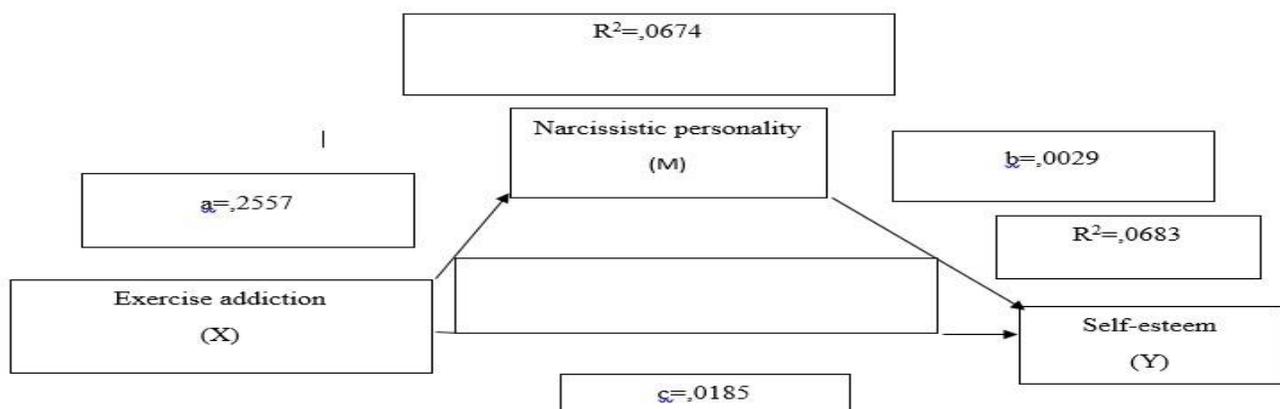


Table 4.
Bootstrap Regression Analysis Findings with Process Module Discussion

Variables	Effect (β)	Standard Error	t	p	LLCI	ULCI
Exercise Addiction → Total Effect on Self-Esteem	.0185	0.0040	4.6178	.000*	.0106	.0264
Exercise Addiction → Direct Effect on Self-Esteem	0.0177	0.0041	4,2745	.000*	.0096	.0259
	Effect (β)	Bootstrap Standard Error	BootLLCI	BootULCI		
Exercise Addiction → Indirect Effect of Narcissistic Personality on Self-Esteem	.0008	.0011	-.0014	.0032		

As a result of the analysis, it was determined that exercise addiction positively affected self-esteem (95% CI [0.0106, 0.0264], $t = 4.6178$, $p < .01$). According to the results of this analysis, the total effect of exercise addiction on self-esteem was found to be 0.01% ($b = 0.0185$).

It was determined that the direct effect of exercise addiction on self-esteem was 01% and this effect was significant and positive ($b = 0.0177$, 95% CI [0.0096, 0.0259], $t = 4.2745$, $p < .01$).

As a result of the Bootstrap regression analysis conducted to test whether narcissistic attitude has a mediating role in exercise addiction and self-esteem, it was determined that narcissistic personality does not have a mediating role in exercise addiction and self-esteem because the 95% confidence interval of the indirect effect bootstrap method includes zero (0) ($c = .0008$, 95%, CI = [-0.0014, 0.0032]).

Discussion

This study examines the relationship between referees' exercise addiction and self-esteem, and how narcissistic attitudes mediate this relationship. Sports referees may be prone to exercise addiction as they engage in an intense process that requires physical endurance and mental focus. In this context, the interaction between exercise addiction and individuals' self-esteem levels is a critical issue in understanding referees' psychosocial well-being.

In addition, it is investigated how narcissistic tendencies, which shape individuals' self-perception and their relationships with the social environment, have an impact on this dynamic. One of the main research questions of the study is to what extent narcissistic attitudes direct the interaction between exercise addiction and self-esteem and how they play a mediating role in this process. In this context, the study will comprehensively analyze how referees' exercise habits, self-perception and narcissistic attitudes form a structure at a relational level.

When the mean and standard deviation values of the scores obtained from the scales are examined, it is seen that the data meet the assumption of normality. This shows that the measurement tools exhibit a balanced distribution among the participants and are suitable for statistical analyses. It is seen that the findings of the studies conducted using different sample groups and methods in the literature have both similarities and differences with the results obtained (Basson, 2001; Bruno et al., 2014; Cook et al., 2020; Giancola et al., 2025; Hazar et al., 2024; Król et al., 2022; Miller & Mesagno, 2014; Spano, 2001; Terry et al., 2004; Terry et al., 2019; Uçar & Korkmaz, 2021; Zeigler-Hill et al., 2021).

As a result of the analyses, it is seen that there is a positive and significant relationship between exercise addiction and self-esteem. There are studies in the literature that reach similar and different results (Katra, 2021; Kulu et al., 2018; Korkmaz and Uslu, 2020; Böke, 2018). Similarly, a significant and positive relationship was found between exercise addiction and narcissistic personality. However, no statistically significant relationship was found between self-esteem and narcissistic personality. These results show that exercise addiction is related to both the individual's self-perception and narcissistic tendencies, but there is no direct link between self-esteem and narcissistic personality. For example, Rosenberg (1965) stated

that self-esteem is directly related to the individual's self-worth, while Hausenblas & Downs (2002) emphasized that regular exercise can increase individuals' self-confidence and self-esteem. The significant and positive relationship between exercise addiction and narcissistic personality shows that excessive exercise may be related to the individual's tendency to idealize himself. Grandi et al., (2011) revealed that individuals with exercise addiction may have higher levels of narcissistic tendencies and suggested that these individuals' excessive focus on their physical appearance and performance may foster narcissistic traits.

However, the lack of a significant relationship between self-esteem and narcissistic personality is parallel to some findings in the literature. Sedikides and Gregg (2008) suggested that healthy self-esteem and pathological narcissism are different psychological structures and may not be directly related. Similarly, Morf and Rhodewalt (2001) stated that narcissistic individuals have a perception of self-worth based on the need for external approval, but this may not coincide with truly high self-esteem. Numerous studies in the literature are similar to our results (Aygün, 2021; Carroll, 1989; Grapsas, 2020; Miller & Mesagno, 2014). In this context, the results of the study reveal that individuals with exercise addiction may have factors that can increase both their self-esteem and narcissistic tendencies, but narcissism and self-esteem are not directly related. These findings suggest that the psychological aspects of exercise addiction need to be examined in more depth, and that more research is needed, particularly to understand how narcissistic tendencies develop independently of self-esteem.

The regression analysis shows that exercise addiction has a significant and positive effect on self-esteem. Exercise addiction stands out as a factor that strengthens individuals' self-perception. However, the analyses revealed that narcissistic personality does not play a mediating role in this relationship. The findings show that the effect of exercise addiction on self-esteem is direct, but this effect does not occur through an indirect mechanism through narcissistic tendencies. These results suggest that the relationship between exercise addiction and self-esteem may be more related to the individual's intrinsic motivations and self-perceptions towards physical activity. In our study, we found that the relationship between exercise addiction and self-esteem is direct and positive, and narcissistic personality does not play a mediating role in this relationship. This finding shows that exercise addiction is a factor that strengthens individuals' self-perception, but narcissistic tendencies are not determinant in this process. There are various studies in the literature examining the relationship between exercise addiction and self-esteem. For example, in a study conducted by Katra (2021), it was stated that exercise addiction levels of individuals who exercised were high and their self-esteem scores were positive, and exercise addiction increased with increasing weekly exercise duration and exercise participation duration. However, there are also studies examining the relationship between exercise addiction and narcissistic personality traits. In a study conducted by Karavelioğlu et al. (2024), a positive relationship was found between the self-esteem and narcissistic personality traits of students at the faculty of sports sciences. However, the direct relationship between exercise addiction and narcissistic personality was not examined in this study. The results of our study reveal that the relationship between exercise addiction and self-esteem is direct and narcissistic personality does not play a mediating role in this relationship. This finding shows that exercise addiction is a factor that strengthens individuals' self-perception, but narcissistic tendencies are not decisive in this process. In addition, it is thought that the relationship between exercise addiction and self-esteem is generally positive in the literature, but the role of narcissistic personality traits in this relationship should be further investigated.

Conclusion and Recommendation

This study aimed to evaluate the effects of exercise addiction, self-esteem and narcissistic personality on the psychological and physical health of individuals by examining the relationships between them. As a result of the analysis, it was seen that exercise addiction had a positive and significant relationship with self-esteem, but different levels of effects were observed in its relationship with narcissistic personality. The findings show that individuals' motivation to exercise is closely related to psychological factors.

Based on the findings, the following recommendations can be made:

- Programs should be developed to ensure that individuals participate in physical activities in a balanced manner, considering the positive and negative aspects of exercise addiction.
- Psychosocial support mechanisms should be established to improve the self-esteem of individuals who exercise, and risk factors associated with narcissistic personality traits should be taken into account.
- Future studies can contribute to the literature by examining the effects of variables such as different age groups, occupational groups, and gender in more detail.
- By conducting studies using different designs, the long-term effects of exercise addiction on self-esteem and narcissistic

personality can be revealed more clearly.

The findings of this study provide important contributions to understanding the psychological dimensions of individuals' exercise habits and to offering suggestions for the development of this field.

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