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Examination Of The Relationship Between Exercise Addiction And Physical Self-Concept Levels Of Students Studying At The Faculty Of Sport Sciences

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Abstract

The aim of this study is to examine the relationship between exercise addiction and physical self-esteem levels of students studying at the Faculty of Sport Sciences. Survey method was used as the research design in the study. The scope group of the study consisted of students studying in the faculties of sport sciences of 7 universities, randomly selected as one from each geographical region of Turkey. "Personal Information Form" was used to obtain the socio-demographic information of the participants, "Exercise Addiction Scale (EIS)" was used to determine the level of exercise addiction and "Physical Self Scale" was used to determine the level of physical self. Normality test was performed on the data obtained and it was determined that the data were normally distributed. Independent Sample T test was used for pairwise comparisons, One Vay ANOVA for multiple comparisons and Tukey HSD test was used to determine the source of difference. Pearson correlation test was used to determine the relationship between the two scales. In the statistical analysis and interpretations of the data, $p<0.05$ significance level was taken into consideration. As a result; gender, age, department of study, class of study, perceived economic level, sport branch and perception of exercise addiction affect the level of exercise addiction. In addition to this, gender, age, department of study, class of study, perceived economic level, sport branch and perception of exercise addiction affect the level of physical self. Finally, it was concluded that there was a positive correlation between exercise addiction and physical self-image level. According to these results; in order to facilitate students' access to psychological counselling services within educational institutions and to prevent false body perception that may occur due to the influence of the media, it may be recommended to conduct informative studies on healthy and realistic body standards in schools.

Keywords: Exercise Addiction, Physical Self, University Students

Özet

Spor Bilimleri Fakültesinde Öğrenim Gören Öğrencilerin Egzersiz Bağımlılığı ve Fiziksel Benlik Düzeyleri Arasındaki İlişkinin İncelenmesi

Bu araştırma ile Spor Bilimleri Fakültesinde öğrenim gören öğrencilerin egzersiz bağımlılığı ve fiziksel benlik düzeyleri arasındaki ilişkinin incelenmesi amaçlanmaktadır. Araştırma tarama (survey) metodu kullanılarak tasarlanmıştır. Araştırmanın kapsam grubunu Türkiye'nin her coğrafi bölgesinden birer tane olacak şekilde rastgele seçilmiş, 7 üniversitenin spor bilimleri fakültelerinde öğrenim gören öğrencileri oluşturmuştur. Katılımcıların sosyo demografik bilgilerinin elde edilebilmesi için "Kişisel Bilgi Formu", egzersiz bağımlılığı düzeylerinin belirlenebilmesi için "Egzersiz Bağımlılığı Ölçeği (EBÖ)" ve fiziksel benlik düzeylerinin belirlenebilmesi için "Fiziksel Benlik Ölçeği" kullanılmıştır. Elde edilmiş olan verilere normallik testi yapılmış olup, verilerin normal dağıldığı tespit edilmiştir. İkili karşılaştırmalarda Independent Sample T testi, çoklu karşılaştırmalarda One Vay Anowa ve farklılık kaynağının belirlenmesinde Tukey HSD testi kullanılmıştır. İki ölçek arasında nasıl bir ilişki olduğunun belirlenebilmesi için ise Pearson korelasyon testi kullanılmıştır. Verilerin istatistiksel analizinde ve yorumlarda, $p<0,05$ anlamlılık düzeyi dikkate alınmıştır. Sonuç olarak; cinsiyet, yaş, öğrenim görülen bölüm, öğrenim görülen sınıf, algılanan ekonomik düzey, spor dalı ve egzersiz bağımlılığı algısı egzersiz bağımlılığı düzeyini etkilemektedir. Buna ek olarak, cinsiyet, yaş, öğrenim görülen bölüm, öğrenim görülen sınıf, algılanan ekonomik düzey, spor dalı ve egzersiz bağımlılığı algısı fiziksel benlik düzeyini etkilemektedir. Son olarak, egzersiz bağımlılığı ile fiziksel benlik düzeyi arasında pozitif bir ilişki olduğu sonucuna varılmıştır. Bu sonuçlara göre; öğrencilerin eğitim kurumları bünyesinde psikolojik danışmanlık hizmetlerine erişimini kolaylaştırmak ve medyanın etkisiyle oluşabilecek yanlış beden algısının önüne geçmek için okullarda sağlıklı ve gerçekçi beden standartları konusunda bilgilendirici çalışmalar yapılması önerilebilir.

Anahtar Kelimeler: Egzersiz Bağımlılığı, Fiziksel Benlik, Üniversite Öğrencileri

INTRODUCTION

It is known that regular physical activity is of great importance in maintaining the physical fitness of individuals. However, there is awareness that intense and excessive exercise may have negative psychological and physiological effects on individuals (9). Excessive exercise behaviour is seen as a behaviour that negatively affects the individual as in other types of addiction (16). In this direction, although exercise has many positive effects on individuals, it has been accepted that it has the potential to become a behaviour that can negatively affect individuals if it reaches obsessive dimensions (36).

Eysenck (15) used the concept of addiction to express the predisposition of individuals to harmful and abnormal actions. These behaviours may include the use of drugs or stimulants, alcohol, exercise, sex or work. Until recently, addiction manifested itself primarily as alcohol and drug use, but in recent years, behavioural addictions have also attracted considerable attention. When the relevant literature is examined, addiction is examined under two headings: behavioural addiction and substance addiction.

Substance addiction is defined as continuing to use a substance that a person uses for pleasure regardless of the physiological, psychological or social problems that arise during use. When a person becomes addicted to a substance, that substance becomes a psychological and physiological desire for him (2). Studies on the human brain have revealed that substance addiction is a continuous and recurrent disorder based on genetic and biological basis (43).

Behavioural addiction is a type that can create addiction without being addicted to the substance. Addictions of this type have pathological characteristics and are concerned with performing an addictive behaviour (35). Behaviour addiction, which can be seen in behaviours other than substance use such as games, internet, television, exercise, etc., can be evaluated by using the criteria used in the detection of substance addiction (21, 41). These criteria consist of six stages: mood change, tolerance, attention, withdrawal symptoms, relapse and conflict (42).

Exercise addiction is defined as the inability of individuals to quit exercise after starting to exercise or to encounter some emotional problems after quitting (19). Exercise addiction is described as the situation in which the individual cannot fulfil his/her responsibilities or spare enough time for his/her social environment by increasing the intensity, frequency and duration of the exercise continuously with the thought that the exercise continuity is out of control and the intensity, frequency and duration of the exercise can increase the efficiency that the individual can get from exercise (1, 46). While normal individuals may choose to rest by taking time for themselves after exercising or when they feel tired after their daily routines, exercise addicts may choose to continue exercising even if they are ill. They see it as a way to relieve stress or to recover, and if they do not do it, they experience frustration or a sense of incompleteness (9).

People consider physical appearance as an important criterion when evaluating themselves and other people. While this situation varies between societies, it is more apparent in some societies. There is a tendency to evaluate with terms such as beautiful-ugly, fat-thin. This standardisation situation can basically emerge through advertisements. Evaluations made on the basis of such criteria in society cause people to judge their physical appearance and consequently affect their happiness. This situation is called physical self-perception and involves individuals' perception and evaluation of themselves in line with certain criteria (10). In this context, when it is taken into consideration that individuals turn to exercise in order to bring themselves to a form they want to see physically or to maintain their own form, it is possible that they will benefit from the positive effects of exercise, but it is also possible to develop an addiction if they overdo it.

The aim of this study is to examine the relationship between exercise addiction and physical self-perception of students studying at the Faculty of Sport Sciences. When the related literature is examined, it is seen that there is a lack of studies in which physical self-perception and exercise addiction are examined together. In this context, it is thought that the study is original and will make an important contribution to the related literature.

METHOD

Research Model

This research was designed based on the relational survey model, one of the quantitative research methods.

Research Group (Population-Sample)

The population group of the study consisted of students studying at the faculties of sport sciences of universities in Turkey, while the sample group consisted of a total of 621 students studying at the faculties of sport sciences of 7 universities (Gazi University, Dumlupınar University, Şırnak University, Atatürk University, Recep Tayyip Erdoğan University, Bandırma Onyedi Eylül University, Akdeniz University) randomly selected as one from each geographical region of Turkey. At least 10% of the population of the faculties were taken as participants.

Data Collection Tools

Before starting the research, the ethics commission report dated 30.12.2022 and numbered 546967 was obtained from the Ethics Commission of Gazi University. In addition, necessary permissions were obtained via e-mail for the use of the scales determined as data collection tools. The "Personal Information Form" created by the researcher was used to obtain the socio-demographic information of the participants, the "Exercise Addiction Scale (EIS)" developed by Tekkurşun Demir et al. (38) to determine the level of exercise addiction, and the "Physical Self Scale" whose validity and reliability was conducted by Çağlar et al. (11) to determine the level of physical self.

Exercise Addiction Scale (EAS)

In order to determine the exercise addiction levels of the participants, the Exercise Addiction Scale (EAS) developed by Tekkurşun Demir et al (38). The scale consists of 17 items in total and has three sub-dimensions: "Excessive Focus and Emotion Change", "Postponement of Individual-Social Needs" and "Tolerance Development and Passion". The scale was constructed using a 5-point Likert scale, and Cronbach's Alpha reliability coefficients were 0.83 for the hyperfocus and emotion change sub-dimension, 0.79 for the Deferral

of Individual-Social Needs sub-dimension, and 0.77 for the Tolerance Development and Passion sub-dimension. Cronbach's Alpha Total value was determined as 0,88. In addition, the test-retest reliability coefficient of the scale was calculated as 0.90 (p<.01).

Physical Self Scale

The "Physical Self Scale", which was developed by Ninot et al. (32) and adapted into Turkish by Çağlar et al. (11), was used to determine the physical self levels of the participants. The scale consists of 25 items in total and includes 6 sub-dimensions. In the study conducted by Çağlar et al. (11), it was found that the R2 and Lambda values for item 3 in the "physical fitness" sub-dimension were quite low (0.07 and 0.28, respectively) and the error variance was quite high (0.93). In line with this information, it should be taken into consideration that item 3 should not be taken into account in the calculation.

Personal Information Form

In the form created by the researcher, there are questions to obtain data such as gender, age, department and class, economic status, sports branch and exercise addiction perception.

Data Analysis

After the data obtained were classified in Excel, statistical evaluations were made using SPSS 25 package programme. Normality tests of the scores obtained from exercise addiction (EAD) and physical self-scale were performed and it was determined that Skewness and Kurtosis values were between ±1.5 . In this case, it is accepted that the data are normally distributed (37). Independent Sample t test was used for pairwise comparisons, One Vay Anova for multiple comparisons and Tukey HSD test was used to determine the source of difference. Pearson correlation test was applied to determine the relationship between the two scales. In the statistical analysis and interpretation of the data, p<0.05 significance level was taken into consideration.

FINDINGS

Table 1. Exercise addiction levels of the participants depending on gender variable

Gender	N	Hyperfocus and Emotion Change		Postponement of Needs and Conflict		Tolerance Development and Passion		General Exercise Addiction	
		x	Ss	x	Ss	x	Ss	x	Ss
Male	357	26.81	6.06	16.30	5.06	11.95	4.14	55.07	12.07
Woman	264	25.78	6.08	15.73	5.68	11.90	4.40	53.43	14.04
Total	621	26.37	6.08	16.06	5.34	11.93	4.25	54.37	12.96
T		2.091		1.279		.140		1.564	
P		**.037***		.201		.889		.127	

p<0,05

When Table 1 was analysed, it was found that there was no statistically significant difference between the postponement of individual-social needs and conflict, tolerance development and passion sub-dimensions of the exercise addiction scale (EAS) and the total score of the scale depending on the gender variable; however, it was determined that the scores of men were higher than women in the sub-dimension of hyperfocus and emotion change and this difference was statistically significant (p<0.05).

Table 2. Exercise addiction levels of the participants depending on age variable

Yaş	N	Hyperfocus and Emotion Change		Postponement of Needs and Conflict		Tolerance Development and Passion		General Exercise Addiction	
		x	Ss	x	Ss	x	Ss	x	Ss
18-21 Years[1]	270	26.71	6.44	15.82	5.74	11.81	4.43	54.34	14.26
22-25 Years [2]	213	26.46	5.59	16.83	4.79	12.16	4.08	55.46	11.58
26-29 Years [3]	111	25.59	5.10	14.81	4.68	11.59	3.92	52.00	10.23
30 and above[4]	27	25.55	9.16	17.55	6.71	12.77	5.01	55.88	18.07
f		1.061		4.459		.880		1.875	
p		,365		**,004***		,451		,133	
Tukey HSD				2 > 3					

*p<0.05

When Table 2 was analysed, it was found that there was no statistically significant difference between the sub-dimensions of over-focusing and emotion change, development of tolerance and passion, and total values of PBI depending on the age variable, whereas there was a statistically significant difference in the sub-dimension of postponement of individual-social needs and conflict (p<0.05).

Table 3. Exercise addiction levels of the participants depending on their department of study

Department	N	Hyperfocus and Emotion Change		Postponement of Needs and Conflict		Tolerance Development and Passion		General Exercise Addiction	
		x	Ss	x	Ss	x	Ss	x	Ss
Physical Education [1]	174	27.05	5.95	15.12	5.25	11.39	3.94	53.56	12.40
Coaching[2]	198	26.48	5.81	15.92	4.78	11.36	3.86	53.77	11.56
Sports Management [3]	144	23.97	6.70	15.95	5.30	11.72	4.46	51.66	13.85
Recreation [4]	105	28.34	4.83	18.02	6.06	14.20	4.47	60.57	13.32
f		12.488		6.791		12.836		10.962	
p		**.000***		**.000***		**.000***		**.000***	
Tukey HSD		4>1>2>3		-		-		4>2>1>3	

*p<0.05

When Table 3 is analysed, a statistically significant difference was found between the sub-dimensions of over-focusing and emotion change, postponement of individual-social needs and conflict, development of tolerance and passion, and the total score of EBÖ (p<0.05).

Table 4. Exercise addiction levels of the participants depending on the class variable

Grade	N	Hyperfocus and Emotion Change		Postponement of Needs and Conflict		Tolerance Development and Passion		General Exercise Addiction	
		x	Ss	x	Ss	x	Ss	x	Ss
1.Grade [1]	138	25.30	6.68	16.15	5.07	10.93	3.35	52.39	11.75
2. Grade[2]	132	26.63	5.16	16.38	5.74	12.36	3.70	55.38	12.53
3. Grade[3]	177	25.55	6.53	16.28	5.67	12.13	4.70	53.98	14.58
4. Grade[4]	174	27.86	5.45	15.51	4.86	12.20	4.69	55.58	12.32
f		6.175		.884		3.393		1.913	
p		**.000***		.449		**.018***		.126	
Tukey HSD		4>3>1				2>4>1			

*p<0.05

When Table 4 is analysed, a statistically significant difference was found in the sub-dimension of hyperfocus and emotion change and the sub-dimension of tolerance development and passion depending on the class variable of the participants (p<0.05).

Table 5. Exercise addiction levels of the participants depending on their perceived economic level variable

Economic Level	N	Hyperfocus and Emotion Change		Postponement of Needs and Conflict		Tolerance Development and Passion		General Exercise Addiction	
		x	Ss	x	Ss	x	Ss	x	Ss
Very Good[1]	48	26.50	6.40	15.18	6.18	12.50	4.57	54.18	15.41
Good[2]	153	26.80	5.98	16.31	5.58	12.31	4.41	55.43	13.46
Medium[3]	330	26.10	6.19	15.84	4.89	11.45	3.95	53.40	11.81
Bad – Very Bad[4]	90	26.56	5.74	16.90	5.96	12.76	4.70	56.23	14.50
f		.498		1.464		3.268		1.573	
p		.684		.223		**.021***		.195	
Tukey HSD						4>3			

*p<0.05

When Table 5 is analysed, a statistically significant difference was found between the economic level of the participants and tolerance development and passion sub-dimension (p<0.05).

Table 6. Exercise addiction levels of the participants depending on the sport branch variable

Type of Sports	N	Hyperfocus and Emotion Change		Postponement of Needs and Conflict		Tolerance Development and Passion		General Exercise Addiction	
		x	Ss	x	Ss	x	Ss	x	Ss
None[1]	249	25.96	6.10	15.91	5.64	11.91	4.25	53.79	13.48
Individual Sports[2]	153	27.50	6.44	16.70	5.25	12.19	4.21	56.41	12.64
Team Sports[3]	219	26.05	5.72	15.78	5.02	11.78	4.29	53.61	12.47
f		3.558		1.511		,433		2.525	
p		**.029***		.222		,649		.081	
Tukey HSD		2>1							

*p<0.05

When Table 6 is analysed, it is seen that there is no statistically significant difference between the postponement of individual-social needs and conflict, tolerance development and passion sub-dimensions and EBÖ total scores depending on the sport branch variable; however, a statistically significant difference was found in the sub-dimension of over-focusing and emotion change (p<0.05).

Table 7. Exercise addiction levels of the participants depending on the variable of their perception of exercise addiction towards themselves

Exer. Addiction Perception	N	Hyperfocus and Emotion Change		Postponement of Needs and Conflict		Tolerance Development and Passion		General Exercise Addiction	
		x	Ss	x	Ss	x	Ss	x	Ss
Yes[1]	216	29.54	4.85	18.18	5.24	13.80	4.52	61.52	12.14
Undecided[2]	150	25.76	6.14	16.08	4.45	12.04	3.54	53.88	11.71
No[3]	255	24.05	5.85	14.25	5.26	10.29	3.72	48.61	11.30
f		57.236		34.964		45.584		71.400	
p		**.000***		**.000***		**.000***		**.000***	
Tukey HSD		3>2>1		1>2>3		1>2>3		1>2>3	

*p<0.05

When Table 7 was analysed, a statistically significant difference was found between the participants' perceptions of exercise addiction towards themselves and the sub-dimensions and total score of the scale (p<0.05).

Table 8. Participants' levels of physical self according to gender variable

Gender	N	General Self		Physical Self		Physical Fitness		Sport Competence		Physical Attractiveness		Physical Strength	
		x	Ss	x	Ss	x	Ss	x	Ss	x	Ss	x	Ss
Man	357	4.43	.84	4.91	.81	4.26	1.00	4.37	.92	4.52	1.08	4.46	.95
Woman	264	4.46	.86	4.98	1.03	4.06	1.16	4.32	1.14	4.67	1.16	4.45	1.13
t		-.511		-.892		2.204		.613		-1.531		.136	
p		.609		.373		**.028***		.540		.126		.892	

*p<0.05

When Table 8 is analysed, it is seen that there is no significant difference between gender variable and general self, physical self, sportive competence, physical attractiveness and physical strength sub-dimensions, whereas there is a statistically significant difference between physical fitness sub-dimension (p<0.05).

Table 9. Participants' levels of physical self according to age variable

Age	N	General Self		Physical Self		Physical Fitness		Sport Competence		Physical Attractiveness		Physical Strength	
		x	Ss	x	Ss	x	Ss	x	Ss	x	Ss	x	Ss
18-21 Years[1]	270	4.48	.80	4.96	.83	4.23	1.19	4.40	1.11	4.56	1.15	4.44	1.14
22-25 Years[2]	213	4.41	.90	4.84	1.03	4.13	1.00	4.27	.94	4.55	1.12	4.49	.97
26-29 Years [3]	111	4.38	.91	5.02	.86	3.91	.78	4.23	.89	4.68	1.07	4.45	.79
30 and above[4]	27	4.55	.69	5.28	.78	5.19	.88	4.83	1.03	4.70	1.04	4.33	1.24
f		.584		2.406		11.084		3.123		.461		.261	
p		.625		.066		**.000***		**.025***		.710		.853	
Tukey HSD						-		4>2,3					

*p<0.05

When Table 9 is analysed, no significant difference was found between the age variable and general self, physical self, physical attractiveness and physical strength sub-dimensions, whereas a statistically significant difference was found between physical fitness and sportive competence sub-dimensions (p<0.05).

Table 10. Participants' levels of physical self according to the variable of the department they are studying

Department	N	General Self		Physical Self		Physical Fitness		Sport Competence		Physical Attractiveness		Physical Strength	
		x	Ss	x	Ss	x	Ss	x	Ss	x	Ss	x	Ss
Physical Education [1]	174	4.45	.92	4.85	.90	4.11	1.14	4.23	1.01	4.55	1.24	4.37	.96
Coaching[2]	198	4.35	.78	4.86	.88	4.22	1.05	4.35	.79	4.49	1.09	4.31	1.08
Sports Management[3]	144	4.56	.86	4.87	1.02	4.15	1.14	4.26	1.15	4.57	1.02	4.47	1.01
Recreation [4]	105	4.42	.85	5.32	.73	4.25	.90	4.65	1.17	4.84	1.05	4.83	1.01
f		1.684		7.462		.548		4.179		2.402		6.535	
p		.169		**.000***		.649		**.006***		.067		**.000***	
Tukey HSD				4>3,2,1				4>3,1				4>3,1,2	

*p<0.05

When Table 10 is analysed, it is seen that there is no statistically significant difference between the variable of the department of study and general self, physical fitness and physical attractiveness sub-dimensions, whereas statistically significant difference is found in physical self, sportive competence and physical strength sub-dimensions (p<0.05).

Table 11. Participants' levels of physical self according to class variable

Grade	N	General Self		Physical Self		Physical Fitness		Sport Competence		Physical Attractiveness		Physical Strength	
		x	Ss	x	Ss	x	Ss	x	Ss	x	Ss	x	Ss
1. Grade[1]	138	4.36	.93	4.83	.95	4.17	1.08	4.27	.97	4.38	1.01	4.49	1.01
2. Grade[2]	132	4.31	.81	4.88	.82	4.09	1.11	4.15	1.08	4.59	1.13	4.23	1.07
3. Grade[3]	177	4.35	.86	4.87	1.05	4.21	1.12	4.47	.92	4.47	1.21	4.45	1.06
4. Grade[4]	174	4.69	.76	5.16	.76	4.21	1.00	4.42	1.07	4.86	1.05	4.60	.96
f		7.029		4.637		.428		3.007		5.696		3.284	
p		**.000***		**.003***		.733		**.030***		**.001***		**.021***	
Tukey HSD		4>1		4>2				-		4>3		4>2	

*p<0.05

When Table 11 is analysed, a statistically significant difference was found between the participants' class variable and the sub-dimensions of general self, physical self, sportive competence, physical attractiveness and physical strength (p<0.05).

Table 12. Participants' levels of physical self according to their perceived economic level variable

Economic Level	N	General Self		Physical Self		Physical Fitness		Sport Competence		Physical Attractiveness		Physical Strength	
		x	Ss	x	Ss	x	Ss	x	Ss	x	Ss	x	Ss
Very Good[1]	48	4.53	.69	4.88	.80	3.73	.99	4.10	1.06	4.77	1.04	4.20	1.05
Good[2]	153	4.56	.70	5.11	.83	4.20	1.03	4.41	1.01	4.77	1.12	4.59	1.06
Medium[3]	330	4.42	.91	4.92	.91	4.20	1.09	4.32	.96	4.43	1.12	4.44	.99
Bad – Very Bad[4]	90	4.28	.90	4.76	1.06	4.29	1.11	4.45	1.19	4.75	1.08	4.41	1.09
f		2.475		3.081		3.166		1.410		4.797		1.919	
p		.061		**.027***		**.024***		.239		**.003***		.125	
Tukey HSD				2>4		4>3,2>1				2>3			

*p<0.05

When Table 12 is analysed, a statistically significant difference was found between the perceived economic level variable and physical self and physical fitness and physical attractiveness sub-dimensions (p<0.05).

Table 13. Participants' physical self-identity levels depending on the sport branch variable

Type of Sports	N	General Self		Physical Self		Physical Fitness		Sport Competence		Physical Attractiveness		Physical Strength	
		x	Ss	x	Ss	x	Ss	x	Ss	x	Ss	x	Ss
None[1]	249	4.34	.78	4.83	.87	3.90	1.13	4.05	1.10	4.73	1.13	4.31	1.09
Individual Sports[2]	153	4.45	.87	5.10	.91	4.46	.96	4.56	.96	4.60	1.10	4.64	1.03
Team Sports[3]	219	4.55	.91	4.95	.95	4.29	1.01	4.53	.86	4.41	1.10	4.49	.93
f		3.427		4.174		14.844		18.508		4.776		5.010	
p		**.033***		**.016***		**.000***		**.000***		**.009***		**.007***	
Tukey HSD		3>1		2>1		2>3		2>3		-		2>1	

*p<0.05

When Table 13 is analysed, a statistically significant difference was found between the participants' sport branch variable and all sub-dimensions of the physical self scale (p<0.05).

Table 14. Participants' physical self-esteem levels depending on the variable of exercise addiction perceptions towards themselves

Exer. Addiction Perception	N	General Self		Physical Self		Physical Fitness		Sport Competence		Physical Attractiveness		Physical Strength	
		x	Ss	x	Ss	x	Ss	x	Ss	x	Ss	x	Ss
Yes[1]	216	4.63	.80	5.41	.64	4.62	.94	4.80	.86	4.87	1.02	4.95	.83
Undecided[2]	150	4.18	.94	4.60	1.04	3.97	.99	4.20	1.09	4.32	1.19	4.16	.98
No[3]	255	4.44	.80	4.75	.86	3.92	1.12	4.05	.96	4.50	1.11	4.21	1.06
f		12.884		52.330		31.316		38.083		12.433		43.491	
p		**.000***		**.000***		**.000***		**.000***		**.000***		**.000***	
Tukey HSD		1>3		1>3		1>3		1>3		1>3		1>3	

*p<0.05

When Table 14 is examined, a statistically significant difference was found between the participants' perceptions of exercise addiction towards themselves and all sub-dimensions of the physical self scale (p<0.05).

Table 15. The relationship between participants' exercise addiction levels and their physical self-image levels

		Exercise Addiction	Physical Self
Physical Self	**r**	.427**	1
	p	**.000***	
	n	621	

*p<0.05

When Table 15 was analysed, a positive correlation was found between exercise addiction and physical self-image level (p<0.01).

DISCUSSION AND CONCLUSION

The aim of this study was to investigate the relationship between exercise addiction and physical self-esteem levels of students studying at the faculty of sport sciences. The concepts of exercise and sport are important in the field of sport sciences and should not be used interchangeably. Exercise is a pre-planned and structured subcategory of physical activity that is performed to improve or maintain one or more components of physical fitness (14). Sport, on the other hand, includes concepts such as competition, competition, record breaking, scoring, championship, relegation, etc. and appears as a profession. In this context, an athlete and an individual who exercises are differentiated. In the relevant literature, when the studies on exercise addiction are examined, it is seen that the research group consists of individuals who are athletes (3, 5, 7, 8, 13, 22, 24, 27); there are also studies in which the research group consists of individuals who are not athletes but exercise (12, 17, 20, 26, 39, 44). Considering this remarkable situation, it is recommended that the concept of exercise and sport should be taken into consideration when determining the research group in the studies to be conducted on exercise addiction.

When the exercise addiction levels of the participants depending on the gender variable were analysed, it was found that there was no statistically significant difference between the postponement of individual-social needs and conflict, tolerance development and passion sub-dimensions and the total score of the exercise addiction scale, while men had higher values of hyperfocus and emotional change than women and this difference was statistically significant (p<0.05). The higher values of men may be related to gender roles and masculinity ideals. Men may have been raised with a social expectation that emphasises physical strength, endurance and muscle mass. This expectation may lead to a more intense interest and commitment to exercise and physical activities. In addition, the fact that women had lower values than men in the excessive focus and emotion change sub-dimensions of the exercise addiction scale may be a reflection of differences that may arise from social and cultural influences. Women may tend to be more concerned with body perception and body image, which may affect their motivation to exercise in different ways. In addition, the idea that social

pressures and judgements may be more pronounced among women should also be considered. Such factors may be influential in explaining gender differences in levels of exercise addiction.

When the relevant literature is examined, there are studies showing that exercise addiction is more common among men (29, 30). In the study conducted by Paksoy (34), no significant difference was found between the gender factor of the participants and the postponement of individual-social needs and conflict sub-dimension. Güzel (18) did not find a significant difference between the gender factor and postponement of individual-social needs and conflict, tolerance development and passion, and total values of exercise addiction scale. In addition, there are many studies (25, 33, 42, 45) in which no significant difference was found between gender factor and postponement of individual-social needs and conflict, tolerance development and passion, and exercise addiction scale total values, and these results are in parallel with the findings of our study. In addition, in the study conducted by Kuzucu (28), it was determined that the levels of hyperfocus and emotion change were higher in favour of men depending on gender, and this result is in parallel with the findings of our study.

When the exercise addiction levels of the participants depending on the age variable were analysed, it was found that there was no statistically significant difference between the sub-dimensions of over-focusing and emotion change, tolerance development and passion sub-dimensions and total values of EAS depending on the age factor, while the values of postponement of individual-social needs and conflict of the participants between the ages of 22-25 were higher than the participants between the ages of 26-29 ($p<0.05$). These findings show that the young adulthood period witnesses significant changes in the personality development and social interactions of individuals. Individuals in this age range may have more freedom to determine their individual needs and goals. Therefore, exercise addiction can be used as a tool to fulfil their individual needs, cope with stress or build their identity. On the other hand, it was found that participants aged 26-29 years had lower values for postponing individual-social needs and experiencing conflict. This finding may indicate that with advancing age, individuals gain more experience and are able to balance their individual-social needs more effectively. Participants in this age group may adopt exercise as part of a healthier lifestyle, but may be less likely to be overly dependent on exercise.

When the literature is examined, Güzel (18) found that the values of the participants between the ages of 22-25 were higher than the values of the participants aged 26 and over in the postponement of individual-social needs and conflict dimension in his study, in which the sample group consisted of students of the faculty of sport sciences. The findings of this study are in parallel with the findings of our study. Yıldızdal (45) examined the effect of exercise addiction on psychological endurance in swimmers and found no difference between the age factor and exercise addiction levels of the participants. Çingöz and Mavibaş (12), on the other hand, did not find a significant difference in exercise addiction levels depending on the age factor in their study in which the sample group consisted of university students studying in different fields. As can be seen, there are studies in the relevant literature that are in parallel with the findings of our study, as well as studies that do not show parallelism. The fact that the sample group used in our study and the sample group of other studies in the literature are different may cause the factors affecting exercise addiction to change and may affect the findings.

When the exercise addiction levels of the participants depending on the department in which they study are examined, there is a statistically significant difference between the averages of over-focusing and emotional change, postponement of individual-social needs and conflict, tolerance development and passion sub-dimensions and total dimension of exercise addiction ($p<0.05$). In addition, considering the results of Tukey HSD test, it was determined that the highest value in the dimension of over-focusing and emotion change was found in the students studying in the recreation department, then in the students studying in the departments of physical education and sports, coaching, and sports management, respectively, and in the total dimension of exercise addiction, the highest value was found in the students studying in the recreation department, then in the students studying in the departments of coaching, physical education and sports, and sports management, respectively. This situation shows that students studying in the recreation department are more prone to an excessive focus on exercise and emotional changes. The recreation department generally focuses on programmes and activities for people to use their free time in an effective and healthy way. Therefore, students studying in this department may have a more intense relationship with exercise and a

higher level of commitment to exercise. Extreme focus may mean that they are motivated to continuously improve their performance and achieve their goals while exercising. Emotional change may refer to the intensity of emotional reactions that occur during exercise. Students' higher scores in these dimensions may indicate that they are more deeply affected while exercising and experience this experience more intensely. On the other hand, the fact that the highest value in the total dimension of exercise addiction was found in students studying in the recreation department may mean that students in the recreation department can allocate more time and energy to exercise and make exercise a central part of their lives.

When the related literature is examined, Güzel (18) found that the total dimension values of exercise addiction of the students of the coaching department were higher than the values of the students of the sports management department in his study in which the participants consisted of students receiving sports education. These results are in parallel with our findings. In his study, Uzun (42) did not find a significant relationship between exercise addiction and the department of study. This result contradicts our findings. As can be seen, there are contradictory findings in the relevant literature. It can be said that the reason for these contradictions is sample differences. The sample size in the studies may be different from the sample size in other studies. Sample size may affect the power of statistical analyses. For example, smaller sample sizes may be more difficult to detect statistical significance and may affect the detection of differences.

When the exercise addiction levels of the participants depending on the class variable were examined, it was found that the group with the highest mean in the sub-dimension of hyperfocus and emotional change was 4th grade students, followed by 3rd grade and 1st grade students respectively; while the group with the highest mean in the sub-dimension of tolerance development and passion was 2nd grade students, followed by 4th grade and 1st grade students respectively ($p<0.05$). Firstly, the fact that 4th grade students experienced a higher level of hyperfocus and emotional change in exercise addiction may indicate that as the academic burden and future pressures of students increase, they may tend to turn to exercise and develop an addiction related to it. In addition, the fact that 2nd year students had higher values in tolerance development and passion sub-dimension may indicate that as students adapt to university life and their passion for exercise increases, they develop a higher tolerance and tend to exercise more.

When the related literature is examined, it is seen that the studies in which the sample group consists of students of the faculty of sport sciences are incomplete. Some of the studies are as follows: Güzel (18) found that the values of 2nd year students were higher than the values of 4th year students in the sub-dimension of tolerance development and passion. In this context, the findings are in parallel with the findings of our study. Paksoy (34), on the other hand, found that the values of 3rd grade students were higher than the values of 1st grade students in the sub-dimension of hyperfocussing and emotion change, which is in parallel with the findings of our study.

When the exercise addiction levels of the participants depending on the economic level variable perceived by the participants were examined, it was found that there was no statistically significant difference between the economic levels of the participants and the levels of over-focusing and emotion change, postponement of individual-social needs and conflict sub-dimensions and the total dimension of exercise addiction; in the sub-dimension of tolerance development and passion, the values of the participants with poor-very poor economic level were higher than the levels of the participants with medium level ($p<0.05$). These findings emphasise the effect of economic level on exercise addiction. Especially in the dimensions of tolerance development and passion, it was observed that the exercise addiction levels of the participants who faced economic difficulties were higher. These results suggest that economic factors may contribute to exercise addiction and may be effective in the development of this addiction. It is thought that individuals struggling with economic difficulties may turn to exercise for reasons such as reducing stress, improving mood or feeling better by exercising. This may explain the higher levels observed in the dimension of tolerance development. Likewise, it is thought that individuals who struggle with economic difficulties may have more intense passion for exercise. The fact that participants with poor to very poor economic status showed higher levels in the passion dimension suggests that this addiction may require a deeper and more intense commitment.

When the literature is examined, Demirel and Cicioğlu (13) did not find statistically significant differences between the economic levels of the participants and the levels of hyperfocus and emotion change, postponement of individual-social needs and conflict, and total dimension of exercise addiction. Tekkurşun

Demir and Türkeli (39) did not find statistically significant differences between the economic levels of the participants and the levels of hyperfocus and emotional change, postponement of individual-social needs and conflict, and total dimension of exercise addiction. In his study, Paksoy (34) did not find a significant difference between the economic levels of the participants and the dimension of hyperfocus and emotion change. These findings are similar to the findings of our study. On the other hand, İskender (23) found a statistically significant difference between the economic level of the participants and the total score of the exercise addiction scale. This finding contradicts the findings of our study. It is thought that the reason for this difference is that the participants of the study and the scale used are different.

When the exercise addiction levels of the participants depending on the sport branch variable were examined, it was found that there was no statistically significant difference between the postponement of individual-social needs and conflict, tolerance development and passion sub-dimensions and exercise addiction scale total scores and the sport branch; in the sub-dimension of hyperfocus and emotional change, it was found that the averages of the participants who were interested in individual sports were higher than the averages of the individuals without a branch ($p<0.05$). Based on these findings, we can conclude that participants who are engaged in individual sports are more hyperfocused and experience emotional changes during the exercise process. Individual sports usually include activities in which the individual is alone with himself/herself, sets his/her own goals and evaluates his/her own performance. In this case, it is possible that participants who are interested in individual sports have more intrinsic motivation and focus themselves more while exercising. At the same time, they may experience more pressure and stress to meet performance goals, which can lead to emotional changes.

When the related literature is examined, Güzel (18) did not find a significant difference between all dimensions of the exercise addiction scale and the sport branch in his study. Likewise, Demirel and Cicioğlu (13) did not find any significant difference in their study. Although these findings are partially parallel to the findings of our study, they differ in the dimension of over-focusing and emotion change. The reason for this difference may be due to different sample characteristics and size, geographical and cultural differences.

When the exercise addiction levels of the participants depending on their perceptions of exercise addiction towards themselves were analysed, it was found that the group with the highest value in the sub-dimensions and total dimension of the EBQ was the group that thought that they were exercise addicted, followed by the group that was undecided and the group that thought that they were not exercise addicted, respectively ($p<0.05$). Several factors and theories can be considered to explain these findings. Firstly, exercise addiction is a concept that reflects individuals' passionate commitment to exercise. Perceived exercise addiction refers to individuals' awareness of their own level of addiction. The group who thought that they were exercise addicted had the highest values in the perceived exercise addiction dimensions. This group thinks that they have a great passion and addiction to exercise. Perceptions of exercise addiction may increase individuals' commitment to exercise and lead them to exercise more. On the other hand, the undecided group cannot clearly determine whether they are exercise addicts or not. This indicates that this group of individuals do not fully understand their level of exercise addiction or are undecided about it. The fact that they scored at moderate levels in the perceived exercise addiction dimensions indicates that they may have a certain level of addiction. However, they may have had difficulty in determining whether they were fully addicted to exercise. The group who thought that they were not addicted to exercise scored lower on the perceived exercise addiction dimensions. This group thought that they did not feel addicted to exercise. This may indicate that individuals' awareness of exercise addiction is low or that they have not really reached the level of addiction.

When the related literature is examined, Paksoy (34) found that the group who thought that they were addicted to exercise had the highest values in the dimensions of postponement of individual-social needs and conflict, tolerance development and passion. In his study, Karabıyık (25) found that the group who thought that they were addicted to exercise had the highest value in all dimensions of the exercise addiction scale, followed by the group who were undecided and the group who thought that they were not addicted to exercise, respectively. These findings are in parallel with the findings of our study.

When the physical self-esteem levels of the participants depending on the gender variable were analysed, it was found that men had a higher mean score than women in the physical fitness sub-dimension ($p<0.05$). This may be due to the fact that men generally participate in more sports and physical activities and therefore

tend to have a higher level of physical fitness. On the other hand, widely accepted gender norms and role expectations in society may cause men to be associated with physical strength and fitness and women to focus more on abilities in other areas. In addition, the influence of the media may contribute to the emergence of gender differences in physical self-perception. In particular, advertisements, magazine covers, films and social media may present idealised physical images and may cause these images to be associated with men more frequently. This may lead men to focus more on their physical self and encourage themselves to achieve a higher level of physical fitness.

When the related literature is examined, Aygün (6) found that the physical fitness values of men were higher than women in his study. Uskan (40) also found that the physical fitness values of men were higher than women in his study. In addition, there are different studies that obtained similar results (4, 31). These findings are in parallel with the findings of our study.

When the physical self levels of the participants depending on the age variable were examined, it was determined that the values of the participants aged 30 years and over in the sportive competence sub-dimension were higher than the values of the participants aged 22-25 years and 26-29 years ($p<0.05$). Participants aged 30 and over are likely to have more experience in sports and to have received more advanced education in the faculty of sport sciences. This experience and expertise may contribute to improving their sporting competences and performing at a higher level. In addition, individuals aged 30 years and older may generally have more physical and mental maturity than their younger counterparts. Being physically stronger and more resilient can increase their sporting competences. At the same time, mental skills such as motivation, discipline and concentration may also improve with age. This may also affect their sporting competences.

When the related literature is examined, it is seen that the studies on physical self-perception are quite few. When the few studies are examined, it is seen that there is no study examining the relationship between physical self-perception levels and age factor. In this context, it is thought that the findings of our study will contribute to the literature.

When the physical self-esteem levels of the participants depending on the department variable, it was found that the students studying in the recreation department had higher values in the sub-dimensions of physical self-esteem, sportive competence and physical strength than the students studying in other departments ($p<0.05$). This situation can be explained as follows; recreation department usually provides education in places where physical activities such as sports halls, outdoor facilities and exercise areas are carried out. Participating in physical, fun activities and gaining practical experience in these environments can positively affect students' physical self-concept. In addition, students studying in the recreation department may be individuals who are generally interested in physical activities and sports activities and adopt an active lifestyle. These students may have more motivation to develop their physical selves and increase their sportive competences by participating in physical activities. In addition, students' major preferences may be based on their physical abilities, interests and goals. Among the participants, those who choose recreation may have higher levels of physical self as they may be more involved in physical activities and sport.

When the related literature is analysed, the number of studies in which physical self-esteem levels are examined in terms of various variables is almost negligible. Among these studies, it is seen that there is no study examining the physical self level with the departments of study. In this context, it is thought that our study will contribute to the relevant literature and will be a source for future studies.

When the physical self-esteem levels of the participants depending on the class variable were examined, it was found that the values of the students studying in the 4th grade were higher than the students studying in the lower grades in the sub-dimensions of general self, physical self, physical attractiveness and physical strength ($p<0.05$). It can be thought that this result may have been influenced by the increase in self-confidence of the students over time with their sports sciences education and experience. 4th grade students may have received more education and may have developed their knowledge and skills in the field of sport more. This may positively affect their physical self-perception.

When the related literature is examined, it is seen that there is a considerable deficiency in the number of studies on this subject. In this context, it is thought that our study will contribute to the related literature and guide the studies to be conducted.

When the physical self levels of the participants depending on the economic level variable perceived by the participants were analysed, it was found that the values of the participants with good economic level in the sub-dimensions of physical self and physical attractiveness were higher than the values of the participants with lower economic level; in the sub-dimension of physical fitness, the values of the participants with poor-very poor economic level were higher than the values of the participants with better economic level ($p<0.05$). These results suggest that economic status may have an effect on people's physical self-perceptions. The fact that individuals with better economic status have a higher perception of physical self and physical attractiveness may probably be due to the fact that they have more economic security and access to resources. These individuals may have factors such as better nutrition, access to gyms or better clothing. This may positively affect their physical self-concept. On the other hand, participants with poor economic status may be individuals who have less access to material resources or have fewer opportunities for sport and a healthy lifestyle. In this case, their better values in the physical fitness dimension can be explained by their resistance to challenging conditions and greater effort. They may show more motivation and perseverance to improve themselves physically.

When the related literature is examined, it is seen that there is a considerable deficiency in the number of studies on this subject. In this context, it is thought that our study will contribute to the related literature and guide the studies to be conducted.

When the physical self levels of the participants depending on the sport branch variable were analysed, it was found that the values of the participants who were interested in individual sports had higher values than the values of the participants who were not interested in individual sports in the sub-dimensions of physical self and physical strength; in the sub-dimension of physical fitness and sportive competence, the values of the individuals who were interested in individual sports had higher values than the values of the individuals who were interested in team sports; in the general self sub-dimension, the values of the individuals who were interested in team sports had higher values than the values of the individuals who were not interested in team sports ($p<0.05$). Firstly, it can be thought that participants who are interested in individual sports may have more motivation to improve their physical self. Since individual sports are usually related to the individual's own performance, athletes take more personal responsibility and may make more effort to improve their own physical skills. Furthermore, individual sports may often require the development of more specific physical skills. For example, an athlete may need to perfect a specific technique or movement. This can help individuals involved in individual sports to reach higher levels of physical strength, fitness and sporting competence. In team sports, team play skills and co-operation may be at the forefront. Such sports are usually based on communication, coordination and strategy within the team. Therefore, the fact that individuals who are interested in team sports have higher general self-esteem levels may be due to the fact that they are more skilful in teamwork and group dynamics. Finally, the fact that individuals without a sport branch have lower levels of physical self may be due to a low interest or low level of participation in sport. Individuals who are not interested in sports usually spend less time in sports and do physical activities less regularly, which may lead to a decrease in physical self-concept.

When the related literature is examined, the number of studies in which the physical self-esteem level is examined in terms of various variables is almost negligible. Among these studies, it is seen that there is no study examining the relationship between sport branch and physical self level. In this context, it is thought that our study will contribute to the relevant literature and will be a source for future studies.

When the physical self levels of the participants depending on their perceptions of exercise addiction towards themselves were examined, it was found that the values of the participants who thought that they were exercise addicted in the sub-dimensions of general self, physical self, physical fitness, sportive competence, physical attractiveness and physical strength were higher than the values of the participants who thought that they were not exercise addicted ($p<0.05$). Physical self is an individual's perception of his/her own physical characteristics. This perception includes the way of liking, accepting and evaluating oneself physically. In relation to the perception of exercise addiction, since the participants believe that they can improve themselves by exercising, their physical self-esteem levels increase. Individuals who think that they are addicted to exercise may think that they increase their physical fitness by exercising regularly, improve their sportive competences by doing sports, and consequently increase their physical attractiveness and

strength. It is thought that these thoughts increase the participants' self-confidence and increase their general self-confidence.

When the relevant literature is examined, the number of studies in which the physical self level is examined in terms of various variables is almost negligible. Among these studies, it is seen that there is no study examining the relationship between exercise addiction perception and physical self level. In this context, it is thought that our study will contribute to the relevant literature and will be a source for future studies.

When the relationship between the participants' exercise addiction levels and physical self levels was analysed, a positive relationship was found between exercise addiction and physical self level ($p<0.01$). The findings show that as the level of exercise addiction increases, the participants' physical self-esteem levels also increase. In other words, individuals with high levels of exercise addiction generally feel better physically and have a more positive physical self-perception. Students of sport sciences faculties may experience the relationship between exercise addiction and physical self levels more distinctly, as they generally have an active lifestyle and have more knowledge and awareness of exercising. Exercise can increase positive feelings about body image and body perception. Individuals who exercise continuously may experience a higher level of self-confidence and physical abilities with increased physical performance. As a result, individuals who exercise feel better about themselves due to physical activity, which may lead to an increase in their physical self-concept.

As a result, gender, age, major of study, class of study, perceived economic level, sport branch and perception of exercise addiction affect the level of exercise addiction. In addition, gender, age, major of study, class of study, perceived economic level, sport branch and perception of exercise addiction affect the level of physical self. Finally, it was concluded that there was a positive correlation between exercise addiction and the level of physical self.

Based on the results of the study, the following suggestions can be made:

- Students should be emphasised that exercise is a part of a healthy lifestyle and should be told at every opportunity that excessive exercise can lead to negative consequences.

- Students can be advised to regularly perform physical self-assessment. This can increase students' awareness of their bodies and help them develop a positive physical self-perception.

- Students can be given trainings about the concept of healthy body image. Informative studies emphasising healthy and realistic body standards can be conducted in order to prevent the wrong body perception that may occur due to the influence of the media.

- Since this study was conducted only on the students of the Faculty of Sport Sciences, this may be a limitation in terms of generalising the results. Similar studies to be conducted on individuals of different age groups and students studying in different disciplines may provide a more comprehensive understanding of the relationship between exercise addiction and physical self-image levels.

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