



An investigation of exercise addictions of students at a faculty of sports sciences in terms of some variables (Kocaeli University case)

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Abstract

Regular physical activities, called exercise, have an important role in maintaining both physical and mental health. However, some researches have shown that exercise done at uncontrollable rates can be harmful and cause addiction. The study adopted survey method and aimed to examine the exercise addictions of the students in the Faculty of Sports Sciences and to determine the differences according to gender, age, exercise year, weekly exercise frequency and daily duration. The participants were selected using criterion sampling method on voluntary basis and consisted of 160 students (71 females and 89 males), aged 18-24 and over at Kocaeli University Faculty of Sport Sciences in Turkey. The data were collected quantitatively via the Exercise Addiction Scale (EAS-21) developed by Housenblas and Downs (2002) and Turkish validity and reliability study was conducted by Yeltepe and İkizler (2007), and a personal information form developed by the researcher. The normality distributions of the data were determined by the Kolmogorow-Smirnov test. The data showed a normal distribution. Independent group t-test and one-way analysis of variance (ANOVA) were used to determine the differences of 7 sub-dimensions of EBÖ-21 according to gender, age, exercise frequency (per week), exercise duration (daily), and exercise year. Tukey and LSD tests were performed to find out which groups the difference originated from. The results showed that 41 of the participants were asymptomatic, 106 were symptomatic, and 13 were exercise dependent. When the sub-dimensions were compared according to the age variable, a significant difference was found in the continuity and time sub-dimensions ($p < 0.05$). The difference in the continuity sub-dimension were determined in the individuals aged 18-20 years and 24 years and over, between the ages of 21-23 and those aged 24 and over, and the difference in the time sub-dimension were observed in the individuals aged 18-20 and 24 years and over. According to the exercise frequency variable, a significant difference was found in other sub-dimensions except withdrawal and lack of control ($p < 0.05$). The significant difference in tolerance, intention effect and time sub-dimensions arose between individuals who exercise 7 or more times a week and individuals who exercise 1-2 times, 3-4 times and 5-6 times a week. In the sub-dimension of continuity and decrease in other activities, it was due to individuals who perform sports 5-6 times a week 1-2 times and 5-6 times a week 3-4 times. In the comparison according to the variable of daily exercise duration, a significant difference was found in all other sub-dimensions, except for the lack of control sub-dimension ($p < 0.05$). As a result, it was determined that when exercise was performed regularly, it was an element that caused addiction, but it could cause negative effects in cases such as lack of control, efficient use of time, and withdrawal from social life and family.

Keywords: Faculty of Sport Sciences, exercise, addiction, exercise addiction

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1. Introduction

Regular physical activities can be called exercise and exercise is one of the important components in maintaining health. Besides its physical benefits, its spiritual benefits are also well known. However, some scientific studies provide data that exercise done at uncontrollable rates can be harmful and cause addiction. (Yates, 1991; Szabo, 1995; 1998; 2004; Griffiths, 1997). Exercise addiction is a very rare condition, but obsessive repetitive behaviors can have devastating consequences (Veale, 1987; Adams, 2009; Terrya et al. 2003). Although it is quite complicated to define addictive behaviors in general, Exercise addiction; It is defined as getting the exercise routine out of the individual's control, continuously increasing the duration, frequency and intensity of exercise in order to achieve the desired effect from exercise, not being able to spare time for family and friends due to not being able to give up exercising, exercising instead of participating in social activities, and rearranging the individual's life within the framework of exercise habits. & Kirkby, 2002; Zmijewski & Howard 2000).

Based on the substance addiction criteria in the Diagnostic and Statistical Manual of Mental Disorders, DSM-IV, it is aimed to continuously increase the duration, frequency and intensity of exercise, to not spare time for family and friends due to exercise, to stay away from social activities and instead to constantly exercise and exercise. The reorganization of the individual's life within the framework of the irregular exercise habits are important criteria in the definition of addiction (Zırhhoğlu, 2011). The first of the three main components of exercise addiction is tolerance (increasing the amount of exercise to achieve the desired effect or decreasing the effects as a result of continuing to do the same amount of exercise), the second is the withdrawal effect (negative effects are seen when the behavior is prevented, withdrawal) and the third is compulsive behavior (avoiding stress and anxiety). is defined as the repetition of the behavior for Tolerance or withdrawal symptoms are called physiological dependence, and those who do not show these symptoms are classified as exercise addicts who do not show physiological dependence (Vardar, 2012).

Regular exercisers were evaluated using the Exercise Addiction Scale-21 as exercise-addicted (score=5-6), non-addicted symptomatic (with symptoms - at risk of addiction; score=3-4) and non-dependent asymptomatic (no symptoms; score=1). -2) can be divided into three different groups. This distinction defines cases with different objective weights of exercise addiction (Vardar et al, 2012). DSM-IV is applied and measured as a multidimensional exercise behavior model that clearly demonstrates 3 or more of the following features.

1. Tolerance: Increasing the amount of exercise or the same amount of exercise to achieve the desired effect
reduced effects as a result of continuing to exercise,
2. Withdrawal: Stopping exercise, doing the same amount of exercise to avoid symptoms and provide relief,
3. Intention Effect: Do you exercise in greater amounts or for longer than is often thought?
to be made,
4. Loss of Control: Intense urge to exercise or to control or stop exercising
failure at will,
5. Time: Do not spend too much time exercising,
6. Decreased Other Activities: Social, work-related or recreational activities to be able to exercise
reducing or abandoning activities.
7. Continuity: Despite being aware of the existence of a physical or physiological problem continuing to exercise (Polat, 2015).

2. Method

2.1. Research design

In the study survey method was adopted based on quantitative data. Survey-based research collects participants' responses using a questionnaire that aims to analyze characteristics of a defined population. The methods of data collection can be quantitative, using numerical items or scores; qualitative, via open-ended questions; or a mix of both (Ponto, 2015).

2.2. Participants

The participants were selected via criterion sampling method. In the study 71 female and 89 male students at the Faculty of Sport Sciences at Kocaeli University took part on voluntary basis. All those 160 students performed regular exercise for a period of more than one year

2.3. Data collection instruments

The data of the study were collected using two instruments.

2.3.1. Personal information form

The personal information form, developed by the researcher, consisted of 5 questions aiming to obtain information such as the gender of the participants, the department they studied, the year of exercise, the frequency of exercise (weekly) and the duration of exercise (daily).

2.3.2. Exercise Addiction Scale (EAS)

The EAS-21 was developed in five phases by Heather A. Hausenblas of the Exercise Laboratory, University of Florida Department of Exercise and Sport Sciences, and Daniel Symons Downs of the Pennsylvania State University Department of Exercise Psychology,

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using a sample group of 2420 people. As a result of the test-retest study, significance was found at the $P < 0.001$ level in the analyzes and the alpha value calculated as (Cronbach) $\alpha = 0.95$ was evaluated as perfect. The scale can be administered to individuals aged 18 and over, individually or as a group. The answers were arranged according to the 6-point Likert Scale as never (1) and always (6). The response time of the Exercise Addiction Scale-21 was estimated to be approximately 5 minutes in total. DSM-IV (Diagnostic and Statistical Manual of Mental Disorders - IV) based on substance addiction criteria and consisting of 21 questions, EAS-21 gives the following information:

- 1- The average of the exercise addiction symptoms scores (scores),
- 2- It distinguishes the following:
 - a) Exercise addict
 - b) Non-dependent symptomatic
 - c) Non-dependent asymptomatic
- 3- Detection of the following situations in individuals,
 - a) Physiological dependence (symptoms of tolerance/cessation of exercise)
 - b) No physiological dependence (no evidence of tolerance or cessation of exercise syndrome)

In the Exercise Addiction Scale-21, 7 addiction criteria were based and individuals who showed three or more of these criteria were classified as exercise addicts. The dependency range is determined according to whether the items that make up the criteria receive 5 or 6 points. Individuals who score these items in the range of 3-4 are classified as symptomatic and these individuals can theoretically be considered to be at risk of exercise addiction. Finally, individuals who score the items in the scale between 1-2 are classified as non-dependent asymptomatic.

2.4. Analysis of the data

Within the scope of the research, descriptive statistics were used to summarize the demographic characteristics and personal information of the sample group. In order to determine the level of exercise addiction in the sample group, individuals who score between 5-6 in at least 3 dimensions of 7 dimensions that make up EBÖ-21 are exercise addicts, individuals who score in the range of 3-4 are exercise dependent (symptomatic), and individuals who score in the range of 1-2 scorers were classified as non-exercise dependents (asymptomatic). The normality distributions of the data were determined by the Kolmogorow-Smirnov test. The data show a normal distribution. Independent group t-test and one-way analysis of variance (ANOVA) were used to determine the differences of 7 sub-dimensions of EBÖ-21 according to gender, age, exercise frequency (per week), exercise duration (daily),

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 and exercise year. To find the source of the difference, Post Hoc statistics were made with Tukey and LSD tests. Findings were considered significant at the $p < 0.05$ level.

3. Results

Results of the study are tabulated and presented as follows:

Table 1. Demographic information about the participants

Gender	N	%
Female	71	44,4
Male	89	55,6
Age		
18-20 years	55	34,4
21-23 years	73	45,6
24+ years	32	20,0
Year(s) of exercise		
1-2 years	29	18,1
3-4 years	28	17,5
5-6 years	26	16,3
7+ years	77	48,1
Exercise frequency (Weekly)		
1-2	35	21,9
3-4	75	46,9
5-6	45	28,1
7 +	5	3,1
Duration of exercise (minutes)		
30-45	20	12,5
46-60	46	28,7
61+	94	58,8
Addiction level		
Asymptomatic	41	25,6
Symptomatic	106	66,3
Addicted	13	8,1

When Table 1 is examined, 44.4% of the sample group is female and 55.6% is male. 45.6% of the sample group consists of individuals between the ages of 21-23, 34.4% between the ages of 18-20 and 20% of individuals aged 24 and over.

It is seen that 48.1% of the sample group has an exercise age of 7 years and above, 46.9% exercises 3-4 times a week, and 58.8% exercises for 61 minutes or more.

Considering the addiction levels of the individuals participating in the research, it is noteworthy that 66.3% are Symptomatic, 25.6% Asymptomatic and 8.1% Exercise Addicted.

Table 2. Descriptive Statistics Results of Exercise Addiction Scale Sub-Dimensions of Students Studying in Sport Sciences

Dimensions	N	Min	Max	\bar{x}	SD
Tolerance	160	3,00	18,00	11,1250	3,04009
Continuity	160	3,00	18,00	8,4000	3,57525
Back off	160	3,00	18,00	9,6062	3,30636
Lack of Control	160	3,00	18,00	9,1000	3,50418
Time	160	4,00	18,00	9,9250	3,09910
Intent Effect	160	3,00	18,00	9,4188	3,31657
Decreased Other Activities (DOA)	160	3,00	16,00	7,6688	3,00884

When the Exercise Addiction Scale sub-dimensions are examined in Table 2, the students' average tolerance ($\bar{x}=11.12\pm 3.04$) was high, Continuity ($\bar{x}=8.4\pm 3.57$), Withdrawal ($\bar{x}=9.6\pm 3.30$), Lack of control ($\bar{x}=9.1\pm 3.5$), Time ($\bar{x}=9.92\pm 3.09$), Intention effect ($\bar{x}=9.41\pm 3.31$) and Decrease in other activities (The mean of $\bar{x}=7.6\pm 3.0$) is seen to be at a low level.

Table 3. Comparison of Exercise Addiction Scale Sub-Dimensions of Students Studying in Sport Sciences by Gender Variable.

Dimensions	Gender	N	\bar{x}	SD	F	p
Tolerance	Female	71	10,7042	2,90022	,043	,118
	Male	89	11,4607	3,12270		
Continuity	Female	71	8,3944	3,48662	,322	,986
	Male	89	8,4045	3,66407		
Back off	Female	71	9,6901	3,30191	,183	,775
	Male	89	9,5393	3,32708		
Lack of control	Female	71	9,4225	3,68651	,997	,300
	Male	89	8,8427	3,35037		
Time	Female	71	9,9296	3,17726	,865	,987
	Male	89	9,9213	3,05341		
Intent Effect	Female	71	9,4648	3,28995	,054	,876
	Male	89	9,3820	3,35581		
Decreased Other Activities (DOA)	Female	71	2,4554	1,02235	,574	,257
	Male	89	2,6367	,98555		

When the sub-dimensions of the Exercise Addiction Scale were examined according to the gender variable, no statistically significant difference was found ($p>0.05$).

Table 4. Comparison of Exercise Addiction Scale Sub-Dimensions of Students Studying in Sports Sciences by Age Variable.

Dimensions	Age	N	\bar{x}	ss	p	Significance
Tolerance	18-20	55	11,5636	3,41979	,419	
	21-23	73	10,8767	2,67678		
	24+	32	10,9375	3,14117		
	Total	160	11,1250	3,04009		
Continuity	18-20	55	8,7636	3,51169	,029*	18-20 / 24+ 21-23 / 24 +
	21-23	73	8,7808	3,67517		
	24+	32	6,9063	3,13523		
	Total	160	8,4000	3,57525		
Back off	18-20	55	9,7818	3,76480	,681	
	21-23	73	9,6712	2,91097		
	24+	32	9,1563	3,38030		
	Total	160	9,6063	3,30636		
Lack of Control	18-20	55	9,5455	3,72588	,458	
	21-23	73	8,9726	3,46800		
	24+	32	8,6250	3,20030		
	Total	160	9,1000	3,50418		
Time	18-20	55	10,7273	3,44510	,020*	18-20 / 24 +
	21-23	73	9,7945	2,96722		
	24+	32	8,8438	2,39771		
	Total	160	9,9250	3,09910		
Intent Effect	18-20	55	10,0364	3,81985	,231	
	21-23	73	9,0548	2,95753		
	24+	32	9,1875	3,10502		
	Total	160	9,4188	3,31657		
Decreased Activities (DOA)	Other 18-20	55	7,9455	3,19964	,680	
	21-23	73	7,5753	2,85247		
	24+	32	7,4063	3,07812		
	Total	160	7,6688	3,00884		

($p<0.05$) *

When the exercise dependence scale was examined according to the age variable, a significant difference was found in the Continuity and Time sub-dimensions ($p<0.05$). In the Continuity sub-dimension of the difference, 18-20 years ($\bar{x}=8.76$) and 24 years and above ($\bar{x}=6.90$), 21-23 years ($\bar{x}=8.78$) and 24 years and above ($\bar{x}=6.90$) between; In the time sub-dimension, it was determined that it originated between the ages of 18-20 ($\bar{x}=10.72$) and the age of 24 and above ($\bar{x}=8.84$) ($p<0.05$).

Table 5. Comparison of Exercise Addiction Scale Sub-Dimensions of Students Studying in Sport Sciences by Exercise Year Variable

Dimensions	Year of exercise	N	\bar{x}	SD	p
Tolerance	1-2 years	29	11,4483	3,19135	,559
	3-4 years	28	10,3929	3,20115	
	5-6 years	26	11,2308	3,56996	
	7 + years	77	11,2338	2,73811	
	Total	160	11,1250	3,04009	
Continuity	1-2 years	29	8,1724	4,42452	,122
	3-4 years	28	7,0357	3,26011	
	5-6 years	26	8,6923	3,23443	
	7 + years	77	8,8831	3,36770	
	Total	160	8,4000	3,57525	
Back off	1-2 years	29	9,5172	3,53170	,874
	3-4 years	28	9,1786	3,80111	
	5-6 years	26	9,6538	3,27344	
	7 + years	77	9,7792	3,08487	
	Total	160	9,6063	3,30636	
Lack of Control	1-2 years	29	9,3793	4,03922	,624
	3-4 years	28	8,4643	3,51170	
	5-6 years	26	9,6538	2,85576	
	7 + years	77	9,0390	3,51104	
	Total	160	9,1000	3,50418	
Time	1-2 years	29	10,0345	3,93231	,993
	3-4 years	28	9,8571	2,82468	
	5-6 years	26	9,8077	3,18772	
	7 + years	77	9,9481	2,86492	
	Total	160	9,9250	3,09910	
Intent Effect	1-2 years	29	9,9655	3,88663	,799
	3-4 years	28	9,3214	3,47535	
	5-6 years	26	9,1538	3,43735	
	7 + years	77	9,3377	3,02015	
	Total	160	9,4188	3,31657	
Decreased Other Activities (DOA)	1-2 years	29	7,4828	3,20291	,537
	3-4 years	28	7,7857	2,94841	
	5-6 years	26	6,9615	2,98638	
	7 + years	77	7,9351	2,97948	
	Total	160	7,6688	3,00884	

When the Exercise Addiction Scale sub-dimensions were examined according to the exercise year variable, no statistically significant difference was found ($p>0.05$).

Table 6. Comparison of Exercise Addiction Scale Sub-Dimensions of Students Studying in Sports Sciences by Exercise Frequency Variable

Dimensions	Exercise frequency (weekly)	N	\bar{x}	SD	p	Significance
Tolerance	1-2	35	10,0857	2,71566	,012*	1-2 / 5-6 1-2 / 7 + 3-4 / 7 +
	3-4	75	10,9867	2,74843		
	5-6	45	11,8667	3,24458		
	7 +	5	13,8000	4,91935		
	Total	160	11,1250	3,04009		
Continuity	1-2	35	7,8000	2,98821	,031*	1-2 / 5-6 3-4 / 5-6
	3-4	75	7,8667	3,50032		
	5-6	45	9,5333	3,93469		
	7 +	5	10,4000	2,70185		
	Total	160	8,4000	3,57525		
Back off	1-2	35	9,2000	2,79495	,260	
	3-4	75	9,2800	3,35132		
	5-6	45	10,3556	3,27633		
	7 +	5	10,6000	5,59464		
	Total	160	9,6063	3,30636		
Lack of Control	1-2	35	7,8571	2,78803	,084	
	3-4	75	9,2800	3,39936		
	5-6	45	9,5778	3,91088		
	7 +	5	10,8000	4,43847		
	Total	160	9,1000	3,50418		
Time	1-2	35	8,2000	2,31110	,000*	1-2 / 3-4 1-2 / 5-6 1-2 / 7 + 3-4 / 5-6 3-4 / 7 +
	3-4	75	9,7600	2,77460		
	5-6	45	11,2000	3,44832		
	7 +	5	13,0000	2,54951		
	Total	160	9,9250	3,09910		
Intent Effect	1-2	35	7,9714	3,06293	,006*	1-2 / 3-4 1-2 / 5-6 1-2 / 7 + 3-4 / 5-6 3-4 / 7 +
	3-4	75	9,6400	2,74423		
	5-6	45	9,8222	3,86293		
	7 +	5	12,6000	4,50555		
	Total	160	9,4188	3,31657		
Decreased Other Activities (DOA)	1-2	35	6,8000	2,58730	,028*	1-2 / 5-6 3-4 / 5-6
	3-4	75	7,4267	2,92322		
	5-6	45	8,5556	3,32043		
	7 +	5	9,4000	1,81659		
	Total	160	7,6688	3,00884		

($p<0.05$) *

When the exercise dependence scale was examined according to the exercise frequency variable, a significant difference was found in the sub-dimensions of Tolerance, Continuity, Time, Intention Effect and DDA ($p < 0.05$). Difference; 1-2 times a week ($\bar{x}=10.08$) to 5-6 times ($\bar{x}=11.86$) and 7 times or more ($\bar{x}=13.80$), 3-4 times a week ($\bar{x}=10.98$) to 7 times or more ($\bar{x}=13.80$),

In the continuity sub-dimension, 1-2 times a week ($\bar{x}=7.80$) to 5-6 times ($\bar{x}=9.53$), between 3-4 times a week ($\bar{x}=7.86$) to 5-6 times ($\bar{x}=9.53$),

In the sub-dimension of time, 1-2 times a week ($\bar{x}=8.20$) and 3-4 times ($\bar{x}=9.76$); 1-2 times a week ($\bar{x}=8.20$) to 5-6 times ($\bar{x}=11.20$), 1-2 times a week ($\bar{x}=8.20$) to 7 times or more ($\bar{x}=13.00$), 3-4 times a week ($\bar{x}=9.76$) 5-6 times ($\bar{x}=11.20$), and between 3-4 times a week ($\bar{x}=9.76$) and 7 times or more ($\bar{x}=13.00$),

In the sub-dimension of intention effect, 1-2 times a week ($\bar{x}=7.97$) to 3-4 times ($\bar{x}=9.64$), 1-2 times a week ($\bar{x}=7.97$) to 5-6 times ($\bar{x}=9.82$), and 1-2 times a week ($\bar{x}=7.97$) 7 times or more ($\bar{x}=12.60$), between 3-4 times a week ($\bar{x}=9.64$) and 7 times or more ($\bar{x}=12.60$),

In the sub-dimension of decrease in other activities, 1-2 times a week ($\bar{x}=6.80$) 5-6 times ($\bar{x}=8.55$) and 3-4 times a week ($\bar{x}=7.42$) 5-6 times ($\bar{x}=8.55$) ($p < 0.05$).

Table 7. Comparison of Exercise Addiction Scale Sub-Dimensions of Students Studying in Sports Sciences by Exercise Duration Variable

Dimensions	Duration of exercise (mins)					Significance
		N	\bar{x}	SD	p	
Tolerance	30-45	20	9,5000	2,52357	,000*	30-45 / 61 + 46-61 / 61+
	46-61	46	10,2826	2,77819		
	61 +	94	11,8830	3,04397		
	Total	160	11,1250	3,04009		
Continuity	30-45	20	7,7000	3,43511	,003*	46-61 / 61 +
	46-61	46	7,0870	2,99500		
	61 +	94	9,1915	3,67578		
	Total	160	8,4000	3,57525		
Back off	30-45	20	9,4500	2,81864	,020*	46-61 / 61 +
	46-61	46	8,5217	3,18845		
	61 +	94	10,1702	3,35254		
	Total	160	9,6063	3,30636		
Lack of Control	30-45	20	7,8500	2,62127	,182	
	46-61	46	8,9783	3,50548		
	61 +	94	9,4255	3,63226		
	Total	160	9,1000	3,50418		
Time	30-45	20	8,3000	2,88554	,000*	30-45 / 61 + 46-61 dk. / 61 +
	46-61	46	8,9565	2,54695		

	61 +	94	10,7447	3,14159		
	Total	160	9,9250	3,09910		
Intent Effect	30-45	20	7,9500	2,70429	,000*	30-45 dk. / 61 + 46-61 dk. / 61 +
	46-61	46	8,1304	2,91058		
	61 +	94	10,3617	3,32100		
	Total	160	9,4188	3,31657		
Decreased Other Activities (DOA)	30-45	20	6,9000	3,00701	,004*	46-61 / 61 +
	46-61	46	6,6739	2,90635		
	61+	94	8,3191	2,91534		
	Total	160	7,6688	3,00884		

($p < 0.05$) *

When the exercise dependence scale was examined according to the exercise duration variable, a significant difference was found in the other sub-dimensions, except for the Lack of Control sub-dimension ($p < 0.05$).

Looking at the Tolerance sub-dimension of difference, 30-45 min. ($\bar{x} = 9.50$) to 61 minutes and more ($\bar{x} = 11.88$), between 46-61 minutes ($\bar{x} = 10.28$) and 61 minutes and more ($\bar{x} = 11.88$),

In the Continuity sub-dimension, between 46-61 minutes ($\bar{x} = 7.08$) and 61 minutes and more ($\bar{x} = 9.19$), in the Back off sub-dimension between 46-61 minutes ($\bar{x} = 8.25$) and 61 minutes and more ($\bar{x} = 10.17$),

In the time sub-dimension, 30-45 minutes. ($\bar{x} = 8.30$) to 61 min. and more ($\bar{x} = 10.74$), between 46-61 minutes ($\bar{x} = 8.95$) and 61 minutes and more ($\bar{x} = 10.74$),

In the sub-dimension of intention effect, 30-45 minutes. ($\bar{x} = 7.95$) to 61 min. and more ($\bar{x} = 10.36$) and 46-61 min. ($\bar{x} = 8.61$) to 61 minutes and more ($\bar{x} = 10.36$),

In the DOA sub-dimension, 46-61 min. ($\bar{x} = 6.61$) and 61 minutes and more ($\bar{x} = 8.31$) exercise durations.

4. Discussion and Conclusions

This study was conducted to examine the exercise addiction of individuals studying at the Faculty of Sport Sciences and to compare the sub-dimensions that make up the addiction according to the variables of gender, age, exercise frequency (weekly), exercise duration (daily) and exercise year. In the literature, there are a number of studies on exercise addiction, although not many.

In the study, 13 (8.1%) of 160 people participating in the study were found to be exercise addicts, 104 (66.3%) were symptomatic, and 41 (25.6%) were asymptomatic. In the study conducted by Zırhhoğlu, (2011), it was determined that among 145 participants (82.9%), the person was not addicted but was in the symptomatic group with the risk of exercise addiction, and the remaining 30 (17.1%) were the non-addicted asymptomatic group. As a result, Bavlı et al. (2011) found 10 Dependent, 95 Symptomatic and 35 Asymptomatic individuals out of 140. In the study performed by Vardar et al. 2012, 14

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(12%) of the 115 subjects who participated in the study found exercise addiction, 71 (62%) non-dependent symptomatic, and 30 (26%) non-dependent asymptomatic symptoms.

When the sub-dimensions were compared according to the gender variable, no significant difference was found. In the study of Polat et al, (2015), differentiation by gender was found only in the "withdrawal" sub-dimension. In the study of Demir and Türkeli (2019), a significant difference was found in the level of exercise addiction according to the gender of the participants. According to this difference, it was interpreted that men have more average than women in the sub-dimension of postponing individual-social needs from women and conflict, tolerance development and passion. Hailey and Bailey, in their research on athletes, stated that women have a higher level of exercise addiction than men (Pierce et al, 1997).

In the present study, a statistically significant difference was found between the sub-dimensions of continuity, tolerance, reducing other activities, time and intention effect, and exercise frequency ($p < 0.05$).

Polat et al. (2015) found a significant difference in all dimensions of exercise addiction according to exercise frequency. The group that creates the difference is the individuals who exercise 7 times a week or more in all dimensions, except for the "reduction in other activities" dimension. In our study, a statistically significant difference was found between the sub-dimensions of continuity, tolerance, reducing other activities, time and intention effect, and exercise frequency ($p < 0.05$). The significant difference in the tolerance sub-dimension is due to those who exercise 7 times a week or more. Among those who exercise 5-6 times a week, 1-2 times and 3-4 times a week in the continuity sub-dimension, among those who exercise 7 or more times under the influence of time and intention and those who do it 3-4 and 1-2 times, in the other activities decrease sub-dimension It is due to those who exercise 5-6 times, 1-2 and 3-4 times. *Increased exercise frequency is emphasized as one of the most influential factors on the exercise addiction process in the literature.

There was a difference in the dimensions of continuity, tolerance, time and intention effect according to the duration of the exercise. Looking at the results, it is seen that those who exercise for 60 minutes or more, similar to the weekly exercise frequency, reveal the differentiation (Polat, et al, 2015). In our study, when the sub-dimensions were compared according to the exercise duration, statistical significance was found in all of the other sub-dimensions except "Loss of Control" ($p < 0.05$). It is seen that the difference arises from individuals who exercise for 61 minutes or more. As the duration of exercise increases, it should be considered natural that there is a significant difference in the dimensions of exercise dependence and addiction.

As a result of his study, Zırhloğlu (2011) found a statistically significant difference when the individuals in the addicted group were compared with the other groups in terms of the duration of exercise (years) and the type of exercise performed ($p < 0.05$). In this study, no significant difference was found in the comparison of sub-dimensions according to the exercise year variable.

5. Suggestions

In this study, the prevalence of exercise addiction among people who regularly do sports was found to be 7.5%. In line with the data obtained; It has been determined that daily exercise duration and high weekly exercise frequency may cause the emergence of exercise addiction symptoms. Since there is not enough literature on this subject in Turkey, there are not many sources to compare. It is a subject open to new research. In addition, further studies in this area should be encouraged and the presence of underlying psychological problems that may cause the emergence of this symptom should also be investigated. More study findings on exercise addiction are needed.

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