



EXAMINATION OF EXERCISE ADDICTION LEVEL OF SPORT SCIENCE STUDENTS¹

Spor Bilimleri Öğrencilerinin Egzersiz Bağımlılığı Düzeylerinin İncelenmesi

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ABSTRACT

Exercise addiction has recently become quite an interesting issue. Researchers have developed various tools for the purpose of investigating the negative effects of intense and excessive exercises on individuals. It should be recognized that there can be negative effects of exercise as well as positive effects. One of them is the exercise addiction, which can also be defined as a type of addiction. This study was conducted for the purpose of identifying exercise addiction levels of sports science students in terms of different variables in the sample of Kahramanmaraş province. The survey method was used in the research as study pattern. The sample consisted of a total of 338 university students, including 191 male and 147 female students, who study at Kahramanmaraş Sutcu Imam University, Faculty of Sport Sciences. In this study, the data were collected using the "Exercise Addiction Scale" (EAS). The research results show that exercise addiction of participants differs according to age, gender, grade level, department, number of weekly exercise (day), sport branches, sharing exercise status on social media, economic status, budget of exercise variables ($p<0.05$).

Keywords: Exercise, Addiction, Exercise Addiction

ÖZET

Son zamanlarda egzersiz bağımlılığı oldukça dikkat çekici bir konu haline gelmiştir. Araştırmacılar, yoğun ve aşırı egzersizlerin bireyler üzerindeki olumsuz etkilerini araştırmak için çeşitli araçlar geliştirmişlerdir. Egzersizin olumlu etkilerinin yanı sıra olumsuz birtakım etkilerinin de olabileceği bilinmelidir. Bunlardan bir tanesi de bir bağımlılık türü olarak tanımlanabilen egzersiz bağımlılığıdır. Bu araştırma Kahramanmaraş ili örneğinde, Spor bilimleri alanında öğrenim gören üniversite öğrencilerinin egzersiz bağımlılığı düzeylerinin farklı değişkenler açısından incelenmesi amacıyla yapılmıştır. Araştırmada çalışma deseni olarak tarama (survey) metodu kullanılmıştır. Araştırmanın çalışma grubunu Kahramanmaraş Sütçü İmam Üniversitesi Beden Eğitimi Ve Spor Yüksekokulunda öğrenim gören 191'i erkek, 147'si kadın olmak üzere toplam 338 üniversite öğrencisi oluşturmaktadır. Araştırmada veri toplama aracı olarak; Tekkurşun ve ark. (1) tarafından geliştirilmiş olan Egzersiz Bağımlılığı ölçeği (EBÖ) kullanılmıştır. Araştırma sonuçları; katılımcıların egzersiz bağımlılığı düzeylerinde; yaş, cinsiyet, sınıf, bölüm, ekonomik durum, spor branşı, haftalık egzersiz sıklığı, egzersiz durumunun sosyal medyada paylaşımı ve egzersize ayrılan bütçe değişkenlerine bağlı olarak istatistiksel olarak anlamlı fark olduğunu göstermiştir ($p<0.05$).

Anahtar Kelimeler : Egzersiz, Bağımlılık, Egzersiz Bağımlılığı

1. INTRODUCTION AND AIM

While regular exercise and physical activity bear importance for the healthy societies, doing excessive activities has been found to be a health problem in the society as a whole. Exercise has been defined as physical activities done in a programmed and planned way to protect and improve physical fitness. Regular physical activity is of great importance in the protection of health and treatment of diseases (Taylor, 2000). Exercise has been defined as bodily movements which result from the skeleton muscle contractions (Baranowski et al., 1992; Özer, 2001; Rowland & Freedson, 1994; Zorba, 2010). Considering this definition, it is of paramount importance to discharge the excess energy taken through nutrition and to facilitate the effective performance of digestion (Zorba, 2010; Vanhees et al., 2005).

Exercise is a sport activity oriented application carried out regularly and in a planned fashion involving intense muscular movements (Ersoy, 1995). As well as allowing the continuation of the performance, exercise provides a rhythmic order in the organism (Çakır, Toprak & Yüksel, 2002). Attending regular physical activities plays an important role in the protection of physical health and the treatment of diseases. However, doing intense excessive exercises is likely to cause potential negative effects psychologically and physiologically (Berczik et al., 2012).

¹ This study was derived from the Master thesis by the first author under the supervision of the second author.

As it happens in other behavioral types, doing excessive exercise is most often considered by theorists to be an obstructive behavior which strains the individual physiologically and psychologically. (Freimuth, Moniz & Kim, 2011).

Although exercise is regarded as a healthy behavior by everybody, it should also be acknowledged that it has the potential to turn into a dangerous behavior which may exert obsessive and harmful effects on individuals. (Szabo & Griffiths, 2007).

Exercise may be an effective part of the treatment of other mental health problems as well as being a health behavior which is important and commonly supported for the prevention and treatment of variety of diseases. Exercise is recommended as an integral part of complete healing from other addictions. (Carek, Laibstain & Carek, 2011). It constitutes a new and effective approach in the treatment of mental health problems generally resulting from depression or personality disorder. Nevertheless, it may also be observed that excessive exercise which affects human metabolism negatively may reach a level of addiction. The fact that exercise may be an addiction in and on itself is not an accepted concept, but it may lead to confusion.

As far as addiction is concerned, the first thing that comes to mind is drug addiction. Drug addiction may be defined as a condition in which an individual feels momentarily or temporarily good as a result of taking a drug for a long time (Seferoğlu & Yıldız, 2013). The aforementioned addictive drugs are chemical drugs which lead to addiction or drug abuse by causing some kind of disorders or changes in some kind of brain activities like emotion, consciousness and condition (Altuner ve ark., 2009). Addiction which is regarded as a pathological behavior affects individuals psychologically, socially and physically. Addiction is considered as one of the most striking problems of our age. It is today possible to come across addicted individuals in almost every walk of life who were only made known in the way they were reflected by the media in the past (Taşkent, 2010).

It is stated in the literature that exercise addiction is assessed positively and negatively. These two conditions have been assessed to involve facing problems like depression, anxiety, anger and insomnia on the negative side (Hausenblas, 2002) and doing excessive exercise for the purpose of getting help in dealing with the difficulties an individual has in his life on the positive side (Berczik et al., 2012).

No matter what the results are, exercise addicted individuals go through periods during which they have no control over the excessive and disproportionate behaviors due to the satisfaction they have as a result of attending activities (Berczik et al., 2012; Sellman, 2016).

Moreover, despite the fact that exercise has been acknowledged by the society to be a strong action for the protection of health, it is difficult to accept the situation that it may reach a level of addiction for the individuals (Forrest et al., 2016), who have a high risk of addiction (Lichtenstein et al., 2017). Although there have been foreign studies on exercise addiction (Szabo & Griffiths, 2007; Lichtenstein et al., 2014), there is a limited number of studies on it in our country.

When it comes to the term addiction, it is the young people who are generally referred in our country. With this point in mind, studying the exercise addiction level of the young and identifying the effective factors which lead to addiction may provide solutions for exercise addiction which affects health negatively.

It is, for this reason, regarded necessary to analyze the possible factors which are used to associate Sport Science Students, most of whose life and university education involve exercise, with addiction. Regarding this, this study has been planned for the purpose of making a contribution to the literature, and determining how the exercise addiction levels of Sport Science Students change according to the mentioned variables.

2. MATERIAL AND METHOD

2.1. The design of the research

The survey method was used in the research as study pattern. The Survey methods which are commonly used in social sciences and which allow the researcher to study on big groups are those which aim to help determine and describe the manipulation over independent variables or factors (Büyükoztürk, 2014) in the past or still at present (Karasar, 2012).

2.2. Research Group

The target population of this study is composed of sport science students who studied at Kahramanmaraş Sutcu Imam University, Faculty of Sport Sciences between the years 2020 and 2021. It has been confirmed

in the study that the number of students who are enrolled in levels from 1 to 4 of the School of Physical Education and Sports, the Department of Coach Training Evening Education Programs and Sport Management Programs is 440, and utmost effort has been made to be able to reach and cover all the target population. The sample width calculation of the known target population formula has been used in the calculation of the sample size of the study for both genders.

The formula of the sample size population when the population is known; ($n = \frac{Nt^2pq}{d^2(N-1) + t^2pq}$). When the size of the population is calculated, $\alpha = 0.05$ is considered as the level of error, 0.05 as the sampling error, $p = 0.8$, and $q = 0.2$. Totally 338 students, involving 158 Sport Science Students, 140 Coach Training Students, and 40 Sports Management Students, who wanted to participate in the study voluntarily, have been included in the study with a simple non-elective method.

2.3. Data Collection Tools

Both the importance of the study and the possible effects and the contributions of the sincerity of the questioned participants have been made clear before the application of the questionnaires. The required permissions to collect data from the research group have been obtained from the Ethics Committee of Kahramanmaraş Sutcu Imam University. The questionnaire forms could not be applied face to face due to Covid-19 pandemic. Instead, they have been applied through the use of 'Google Form' on the virtual environment to those who wanted to participate in the study voluntarily. Exercise Addiction Scale questionnaire which also involves demographic information has been used as a data collection tool.

2.3.1. Exercise Addiction Scale (EAS)

The Exercise Addiction Scale (EAS) developed by Tekkursun Demir, Hazar and Cicioglu (2018) has been used in the study to determine the exercise addiction level of the participants. The Exercise Addiction Scale consists of 3 sub-dimensions involving 'Over-Focusing and Emotion Change', 'Postponement of Individual-Social Needs and Conflict', and 'Tolerance Development and Passion'. The sub-dimension 'Over-Focusing and Emotion Change' is composed of the first 7 items (1, 2, 3, 4, 5, 6, 7). The Postponement of Individual-Social Needs and Conflict dimension consists of 6 items (8, 9, 10, 11, 12, 13) and the dimension of Tolerance Development and Passion consists of 4 items (14, 15, 16, 17). The Exercise addiction Scale consists of 17 items and it does not contain any negative item (reverse item).

The Cronbach's Alpha coefficient for the scale's sub-dimension 'Over-Focusing and Emotion Change' is 83. The Cronbach's Alpha coefficient for the scale's sub-dimension 'Postponement of Individual-Social Needs and Conflict' is 79. The Cronbach's Alpha coefficient for the scale's sub-dimension 'Tolerance Development and Passion' is 77. The Alpha values of the data obtained from the participants in the study have been calculated to be 78 for the dimension of 'Over-Focusing and Emotion Change', 75 for 'Postponement of Individual-Social Needs and Conflict', and 79 for 'Tolerance Development and Passion' (Tekkursun Demir & Türkeli, 2019). The score range of the exercise addiction scale is categorized as 1-17 normal group, 18-34 less risky group, 35-51 risky group, 52-69 addicted group and 70-85 highly addicted group.

2.4. Analysis of the data

SPSS 22.0 package program was used to analyze the data. Kolmogorov-Smirnov test was carried out for the normality test before the data. In this context, parametric tests were applied to the data because of the normal distribution of the data. T test was used for dual comparisons and ANOVA for multiple comparisons. LSD ve Scheffe tests were used to find out the source or cause of the difference for the cases when there was a meaningful difference. It was determined significant as $p < 0.05$.

3. RESULTS

In this study, the exercise addiction level of Sport Science Students was examined in terms of age, gender, class, department, economic status, sports branch, regular sports attendance in the family, frequency of weekly exercise, social media sharing of the exercise and the budget allocated for exercise. The results of the analysis regarding these variables are shown below in the tables.

Table 1. Results of the analysis according to gender variable

EAS Sub- Dimensions	Gender	n	Mean	SD	t	p
<i>Over-Focusing and Emotion Change</i>	Men	191	21,94	3,16	-,368	,713
	Women	147	22,07	3,13		
<i>Postponement of Individual-Social Needs and Conflict</i>	Men	191	14,96	3,27	-1,233	,267
	Women	147	15,40	3,96		
<i>Tolerance Development and Passion</i>	Men	191	11,75	2,64	2,207	,025*
	Women	147	11,03	3,13		

*p<0,05

The difference was found to be statistically significant in the subdimension Tolerance Development and Passion ($t=2,207$; $p<0,05$). The difference was determined to be not statistically significant in the subdimensions Over-Focusing and Emotion Change ,and postponement of individual-social needs and conflict and emotion change ($t=-,368$; $p>0,05$).

Table 2. Results of the analysis according to age variable

EAS Sub- Dimensions	Age		n	Mean	SD	F	p	Diff. LSD
<i>Over-Focusing and Emotion Change</i>	1-	18-22	280	21,91	3,01	4,210	,016*	1>3
	2-	23-27	40	23,15	3,08			
	3-	28-32	18	20,77	4,46			
<i>Postponement of Individual-Social Needs and Conflict</i>	1-	18-22	280	15,18	3,58	,120	,887	-
	2-	23-27	40	15,25	4,01			
	3-	28-32	18	14,77	2,83			
<i>Tolerance Development and Passion</i>	1-	18-22	280	11,47	2,89	,047	,954	-
	2-	23-27	40	11,40	3,14			
	3-	28-32	18	11,27	2,53			

*p<0,05

Table 2 shows that there was a significant difference in the sub-dimension 'over focusing and emotion change' depending on the analysis according to age variable ($F_{(2-335)} = 4,210$; $p<0,05$).

Table 3. Results of the analysis according to class change variable

EAS Sub- Dimensions	Class	n	Mean	SD	F	p	Diff. Scheffe
<i>Over-Focusing and Emotion Change</i>	1	94	21,03	2,99	4,011	,008*	3>1
	2	99	22,18	3,18			
	3	71	22,67	2,65			
	4	74	22,01	3,54			
<i>Postponement of Individual-Social Needs and Conflict</i>	1	94	14,62	4,03	3,702	,012*	2>3
	2	99	16,10	3,64			
	3	71	14,55	2,81			
	4	74	15,32	3,65			
<i>Tolerance Development and Passion</i>	1	94	10,92	2,42	4,633	,003*	3>4
	2	99	11,95	2,80			
	3	71	12,03	2,86			
	4	74	10,75	3,27			

*p<0,05

According to Table 3 which shows the results of the analysis according to class change variable, a significant difference was found in all the sub-dimensions of the exercise addiction level scale ($p<0,05$).

Table 4. Results of the analysis according to department variable

EAS Sub- Dimensions		n	Mean	SD	F	p	Diff. LSD
<i>Over-Focusing and Emotion Change</i>	Physical Education and Sports Teaching	158	22,26	2,95	2,141	,119	-
	Coach Training	140	21,95	3,24			
	Sports Management	40	21,12	3,38			
<i>Postponement of Individual-Social Needs and Conflict</i>	Physical Education and Sports Teaching	158	14,81	3,44	3,742	,025*	2>1,3
	Coach Training	140	15,76	3,55			
	Sports Management	40	14,37	4,05			
<i>Tolerance Development and Passion</i>	Physical Education and Sports Teaching	158	11,74	2,55	1,801	,167	-
	Coach Training	140	11,24	3,09			
	Sports Management	40	10,95	3,29			

*p<0,05

According to Table 4 which shows the results of the analysis according to department variable, a significant difference was found in the sub-dimensions of *Postponement of Individual-Social Needs and Conflict* ($F_{(2-335)}=3,742$; $p<0.05$). The difference was determined to be not statistically significant in the other subdimensions of exercise addiction level scale.

Table 5. Results of the analysis according to economic status variable

EAS Sub- Dimensions		n	Mean	SD	F	p	Diff. LSD
<i>Over-Focusing and Emotion Change</i>	Under 1500 TL	138	22,19	3,23	,619	,539	-
	1501-2500 TL	87	22,02	2,96			
	Over 2501 TL	113	21,75	3,17			
<i>Postponement of Individual-Social Needs and Conflict</i>	Under 1500 TL	138	15,21	3,84	5,016	,007*	1>2 2<3
	1501-2500 TL	87	14,20	2,65			
	Over 2501 TL	113	15,80	3,76			
<i>Tolerance Development and Passion</i>	Under 1500 TL	138	11,57	3,24	,242	,785	-
	1501-2500 TL	87	11,39	2,37			
	Over 2501 TL	113	11,32	2,80			

* $p<0,05$

According to Table 5. which shows the Results of the analysis according to economic status variable, it has been found that there was a significant statistical difference in the sub-dimensions of *Postponement of Individual-Social Needs and Conflict* ($F_{(2-335)}=5,016$; $p<0.05$).

Table 6. Results of the analysis according to frequency of weekly exercise variable

EAS Sub- Dimensions	Day	n	Mean	SD	F	p	Diff. Scheffe
<i>Over-Focusing and Emotion Change</i>	1	52	21,61	3,04	2,018	,063	-
	2	75	21,56	3,42			
	3	97	22,75	2,70			
	4	49	22,18	3,66			
	5	43	21,90	2,76			
	6	22	21,20	3,58			
<i>Postponement of Individual-Social Needs and Conflict</i>	1	52	13,21	2,55	6,124	,000*	1<3,6
	2	75	14,34	3,02			
	3	97	16,02	3,84			
	4	49	15,48	4,06			
	5	43	15,60	3,14			
	6	22	17,45	3,51			
<i>Tolerance Development and Passion</i>	1	52	9,46	2,98	6,093	,000*	1<2,3,4,5
	2	75	11,38	2,78			
	3	97	11,98	2,63			
	4	49	11,59	3,24			
	5	43	11,95	2,38			
	6	22	12,77	2,28			

* $p<0,05$

According to Table 6 which shows the results of the analysis according to frequency of weekly exercise variable, The difference was determined to be statistically significant in the subdimension of *Postponement of Individual-Social Needs and Conflict* ($F_{(6-331)}=6,124$; $p<0.05$) and in the subdimension of Tolerance Development and Passion ($F_{(6-331)}=6,093$; $p<0.05$).

Table 7. Results of the analysis according to regular sports attendance in the family variable

EAS Sub- Dimensions	Answers	n	Mean	SD	t	p
<i>Over-Focusing and Emotion Change</i>	Yes	114	22,02	3,19	,097	,923
	No	224	21,99	3,12		
<i>Postponement of Individual-Social Needs and Conflict</i>	Yes	114	14,69	3,11	-1,687	,093
	No	224	15,38	3,79		
<i>Tolerance Development and Passion</i>	Yes	114	11,61	2,45	,773	,440
	No	224	11,35	3,08		

According to Table 7 which shows the results of the analysis according to regular sports attendance in the family variable, the difference was found to be not statistically significant ($p<0,05$).

Table 8. Results of the analysis according to social media sharing of the exercise variable

EAS Sub- Dimensions	Answers	n	Mean	SD	t	p
Over-Focusing and Emotion Change	No	105	21,88	3,16	3,156	,039*
	Yes	233	22,51	2,04		
Postponement of Individual-Social Needs and Conflict	No	105	15,63	3,18	1,394	,164
	Yes	233	15,05	3,70		
Tolerance Development and Passion	No	105	11,86	2,99	1,461	,145
	Yes	233	11,37	2,81		

*p<0,05

According to Table 8. which shows the results of the analysis according to social media sharing of the exercise variable, a statistically significant difference was found in the subdimension of Over-Focusing and Emotion Change in favor of those who stated that they share their exercise status on social media (t=3,156; p<0,05).

Table 9. Results of the analysis according to budget allocated for exercise variable

EAS Sub- Dimensions	Answers	n	Mean	SD	F	p	Difference Scheffe
Over-Focusing and Emotion Change	1- 100-200 TL	140	22,78	2,93	7,249	,000*	4<1,2
	2- 201-500 TL	80	22,23	2,87			
	3- 501-1000 TL	20	22,10	4,31			
	4- 0 TL	98	20,94	2,91			
Postponement of Individual-Social Needs and Conflict	1- 100-200 TL	140	15,42	3,02	15,969	,000*	4<1,2,3
	2- 201-500 TL	80	16,51	3,98			
	3- 501-1000 TL	20	17,45	3,54			
	4- 0 TL	98	13,47	3,14			
Tolerance Development and Passion	1- 100-200 TL	140	12,20	2,80	14,481	,000*	4<1,2
	2- 201-500 TL	80	12,15	2,31			
	3- 501-1000 TL	20	11,75	3,05			
	4- 0 TL	98	10,01	2,81			

*p<0,05

According to Table 9 which shows the results of the analysis according to budget allocated for exercise variable, the difference was found to be a statistically significant in all the subdimensions (p<0,05).

Table 10. Results of the analysis according to sports branch variable

EAS Sub- Dimensions	Sports Branch	n	Mean	SD	t	p
Over-Focusing and Emotion Change	Individual	131	21,74	3,22	-1,587	,114
	Team	207	22,29	2,99		
Postponement of Individual-Social Needs and Conflict	Individual	131	16,14	4,18	3,807	,001*
	Team	207	14,66	2,96		
Tolerance Development and Passion	Individual	131	11,83	3,04	1,595	,112
	Team	207	11,32	2,75		

*p<0,05

According to Table 10. which shows the results of the analysis according to sports branch variable the difference was found to be a statistically significant in the subdimension of Postponement of Individual-Social Needs and Conflict (t=3,807;p<0,05). It was also determined that the average points of those who took part in individual sports branches were higher.

4. DISCUSSION

Exercise Addiction Level of Sport Science Students has been discussed under the scope of the data in the literature. Accordingly ;

As Table 1. displaying the results of the analysis according to gender variable shows, the difference was found to be statistically significant in the subdimension Tolerance Development and Passion. Therefore, it was understood that there was a significant difference in favor of men in the subdimension tolerance development and passion. However, the difference was not found to be significant in the subdimensions over focusing and emotion change, and Postponement of Individual-Social Needs and Conflict.

Tekkurşun Demir and Türkeli (2019) found a statistically significant difference in their studies on Exercise Addiction Level of Sport Science Students according to gender. It was stated that there was a significant

difference in favor of men in the subdimension tolerance development and passion, and Postponement of Individual-Social Needs and Conflict. The results obtained from this study have been found to be in parallel with the results obtained in the existing study. It has been stated as a result of the analysis of the data that male students tend to postpone their basic needs like eating and drinking and social requirements more compared to female students. It has also been found that male students cannot help attending longer exercises and are more impatient to attend them than female students.

The participants of the study have been found to be at a risk group with regard to being addicted to exercise and there was a significant difference in exercise addiction depending on the age. It has also been observed in some studies that there was a change in exercise addiction according to gender variable. (Davis, 1990; Diekhoff, 1984).

Gün has determined in his study that 13.2% of the male students, 15.8% of the female students, and 14.1% of the general population of the study were exercise addicted. Moreover, 65.8% of the male students, 52.5% of the female students and 58.7 % of the general population of the study were found to be a candidate for exercise addiction.

Although their level of addiction seems to be low, it is clear that female and male students are highly likely to be candidates for addiction. In another study carried out on athletes, it has been recognized that the exercise addiction level of female athletes is higher than that of male athletes. (Pierce, Rohaly & Fritchley, 1997).

Polat and Şimşek (2015) found in their study that the difference observed was found to be in favor of men doing more exercise than women to avoid stress when exercise addiction level was analyzed according to gender.

There also exist studies in the literature which show that there is not a significant difference between gender and exercise addiction (Vardar, 2012; Bingöl, 2015; Bootan, 2018; Cicioğlu et al., 2019; Hailey & Bailey, 1982; Yeltepe, 2005; Yıldırım et al., 2017). For example, it was observed that there was no difference according to gender as a result of a study in which the exercise addiction level of 88 males and 97 females was examined. (Davis & Claridge, 1998).

Similarly, Bootan (2018) has observed the exercise addiction levels of Kickbox, Taekwondo and Muay-thai sportsmen according to different variables and factors, and he reported that there was not a significant difference in between gender and exercise addiction level.

In a study carried out by Gün (2018) it was determined that exercise addiction was observed in 13.2% of the male students and 15.8% of the female students, and it was also found that 65.8% of the male students, and 52.5% of the female students had a high risk of becoming a candidate for exercise addiction.

In a study performed by Karademir (2020), it was aimed to analyze how the exercise addiction levels of the individuals doing exercise regularly for a period of at least two years shape. It was understood as result of this study that there was not a significant difference in the level of exercise addiction according to gender variable, and that the study group consisted of individuals, 34.7% of whom did not show any symptom, 58.5% of whom showed symptom and 6.8% of whom were addicted to exercise.

The difference was found to be significant in the sub-dimension 'over focusing and emotion change' depending on the analysis according to age variable (Table 2). It was determined that students aged 18-22 had a higher average points than those aged 28-32 in the subdimension over focusing and emotion change. In a study carried out by Uzun (2020) it was found that minority of students of sports teaching and education were addicted to exercise, and that age variable is an important factor in exercise addiction. These results confirm the results of our study. For this reason, it can be said that age is an important factor in exercise addiction. As it is understood from the result of exercise addiction average points of the study, the risk of exercise addiction is higher for young individuals aged between 18 and 22. There are also studies which suggest that there is no direct relation between age and exercise addiction and that age is not an important factor in exercise addiction. For example; Bootan(2018) reported in his study that there was not a significant difference in the relationship between age and exercise addiction. Similarly, in a study carried out by Tekkurşun Demir and Türkelin (2019) it was found that Sports Science Students were at a risk group and that the level of exercise addiction was not different in terms of the age level of the participants.

The difference was found to be statistically significant in all the sub-dimensions of the exercise addiction level scale showing the results of the analysis according to class change variable (Table 3). The average

points of the 3rd year students was higher than that of the 1st year students in the subdimension over focusing and emotion change. The average points of the 2nd year students was higher than that of the 3rd year students in the subdimension Postponement of Individual-Social Needs and Conflict. The average points of the 3rd year students was higher than that of the 4th year students in the subdimension tolerance development and passion. As a result of the study, Tekkurşun Demir and Türkeli found that the average points of the 1st year students was statistically significant and higher compared to the average points of the 2nd year students in the sub-dimension over focusing and emotion change.

It has been reported that this situation was caused by the fact that 1st year students tend to relax more by doing exercise when they do not feel good and they become happier after the exercise. It was accordingly found that they have a higher risk of being addicted to exercise. Moreover, it can also be concluded that given the situations like the difficulty to make friends during the first years of the university life and being a stranger to the city, it is quite normal for the 1ST year students to be inclined to exercise and they have a higher risk of exercise addiction.

As it is clearly seen in the table which shows the results of the analysis according to department variable, there found to be a significant statistical difference in the sub-dimensions of *Postponement of Individual-Social Needs and Conflict* (Table 4). It was also understood that the average exercise addiction points of the Sports Coaching students were higher than that of the students of Physical Education and Sports Teaching and Sports Management.

The exercise addiction level of the students of the Faculty of Sports was determined to be high in the studies carried out by Tekkurşun Demir and Türkeli (2019). This finding has been confirming the idea underlying the existing study. It is reasonable to expect from Sports Science students, most of whose life and university education involves sports and exercise, to have a higher level of exercise addiction. The fact that the exercise addiction levels of the Sport Science students who were reported to have a high risk have a different addiction level regarding the department in which they study has also been confirming the existing study results.

Despite the fact that it has been found in the study that exercise addiction level of Sport Science Students differs according to department variable, there are also studies which show that there is not a statistically significant difference according to the department variable (Uzun, 2020; Borazan, 2015; Nogueira ve ark., 2018).

The students of Physical Education and Sports Teaching, Coach Training and Sports Management are generally the students whose physical aptitude is at a medium and high level. Therefore, the thing which is effective in the study may not necessarily be exercise in the general sense, but the type of the exercise and the sports branch may have played a role. Regarding this, the exercise addiction level of the Sports Academy students in England and the general exercise population was compared in the literature. As a result of this study, it was reported that the average exercise addiction level points of the Sports Academy students (% 6,9) was found to be nearly two times higher than the general exercise population(% 3,6) (Szabo & Griffiths (2007).

Regarding the results of the analysis according to economic status variable, the difference was found to be statistically significant in the sub-dimensions of *Postponement of Individual-Social Needs and Conflict* (Table 5). It has been found that students who have a monthly income of 1500 TL or lower have a higher average level of exercise addiction than those with a monthly income of 1501-2500, and students who have a monthly income of 2501TL have a higher average level of exercise addiction than those with a monthly income of 1501-2500 TL. Tekkurşun Demir and et al (2018) determined in their studies that Sports Science students do not have a difference in their level of exercise addiction in terms of their monthly incomes. Similarly, in a study carried out by Tekkurşun Demir and Türkeli (2019), no statistically significant difference was observed between the monthly income and exercise addiction of the students. As a result, it has been concluded that economic status has no effect on exercise addiction. The difference in the existing study data may have resulted from the differences present in the sample group.

Regarding the results of the analysis according to frequency of weekly exercise variable, the difference was determined to be statistically significant in the subdimension of *Postponement of Individual-Social Needs and Conflict* and in the subdimension of Tolerance Development and Passion (Table 6).

It was determined in the subdimension of *Postponement of Individual-Social Needs and Conflict* that the average exercise addiction level points of the participants who did exercise once a week was lower than

those who did exercise 3 and 6 days a week., it was understood regarding the subdimension of Tolerance Development and Passion that the participants who did exercise once a week had a lower level of average exercise addiction points than those who did exercise 2 or 5 days a week.

It is emphasized in the literature that the frequency of the exercise is one of the most important parameters which show the symptom of exercise addiction (Berczik et al., 2012; Costa et al., 2013; Bavlı, Kozanoğlu & Doğanay, 2011). There are research results which show that the number of the weekly exercise has a significant role in the determination of exercise addiction (Kovacsik et al., 2019).

Whether there has been a relationship between exercise addiction and some variables has been examined in a different study, and it has been determined in that study that there is a positive linear relationship between exercise addiction and weekly exercise time (Karademir, 2020). Although there are some findings which contrast with the results of the study, these studies have established the relationship not with the number of the day but between weekly exercise time, intensity, passion and exercise addiction. (Kovacsik et al., 2019). Bavlı et al. (2011) reported as a result of a study which they performed on 140 healthy individuals who had an average age of $28,9 \pm 9,1$ years and who had been doing sports regularly for at least two years that the weekly exercise frequency and total addiction points of the addicted group differed statistically in the groups candidate for addiction and not addicted groups. Furthermore, they also suggested that the group candidate for addiction differed significantly from the unaddicted group in terms of the total addiction points. It is thought that the higher frequency of the weekly exercise may be effective in the development of exercise addiction.

Regarding the results of the analysis according to regular sports attendance in the family variable, the difference was found to be not statistically significant (Table 7). Similar findings regarding family based sports exercise have not been found in the literature. Studies regarding this issue are needed for the sake of examining, comparing and evaluating the findings related with this factor with the other study results. Despite the fact that there are individuals in the family who are doing sports on a regular basis, the physical exercises and activities done can be regarded as those in which the individual himself participated and interested.

Regarding the results of the analysis according to social media sharing of the exercise variable, a statistically significant difference was found in the subdimension of Over-Focusing and Emotion Change in favor of those who stated that they share their exercise status on social media and it has also been found that the average points of the individuals who shared their exercise status on the media are higher than those who did not share it on the social media (Table 8).

Accordingly, it is thought that an increase in exercise addiction can be observed depending on the share of the exercise status on social media. It is also thought that there may be an increase in social media shares for the purpose of gaining popularity, and being acknowledged, admired and supported by the society on the websites. It has been realized that there is a strange relationship between exercise addiction and social media use, and that individuals who have a high level of exercise addiction also have a high rate of social media usage and that social media usage duration of the individuals has a direct correlation with their exercise addiction level. It may be explained with the fact that the high frequency of social media use and share of individuals who are addicted to exercise may be a compensation for the lack of time they can use for making friends to socialize. In addition, it is stated that today social media has become a quite effective agent in social relations and can turn into addiction in advanced cases. Social media which allows individuals to share their improving physical states as a result of the time they have regularly devoted to exercise may be more motivating for them to do sports (Karademir, 2020). It was also realized as a result of the existing study that the exercise addiction level of the participants has a linear connection with their social media shares. Abanoz (2018) stated that individuals use social media tools more in sports due to their interests in sports, and that the reason why social media use increases particularly in sports is directly related to the interest in sports.

Regarding the results of the analysis according to budget allocated for exercise variable, the difference was found to be a statistically significant in all the subdimensions (Table 9).

It has been revealed that in the subdimension over focusing and emotion change, the individuals who stated that they did not spend any Money (0 TL) on exercise have a lower average exercise addiction point than those who spent 100-200TL and 201-500TL; in the subdimension *Postponement of Individual-Social Needs and Conflict* , the individuals who stated that they did not spend any Money (0 TL) on exercise have a

lower average exercise addiction point than those who spent 100-200TL and 201-500TL and in the subdimension *Tolerance development and Passion*, the individuals who stated that they did not spend any Money (0 TL) on exercise have a lower average exercise addiction point than those who spent 100-200TL and 201-500TL. No similar findings regarding the factor 'the budget allocated for exercise' in the existing study have been determined in the literature. There is a need for studies to examine, compare and contrast the findings regarding this factor in general with the results of the other studies.

Regarding the results of the analysis according to sports branch variable the difference was found to be a statistically significant in the subdimension of Postponement of Individual-Social Needs and Conflict (Table 10). It was also determined that the average addiction level points of those who took part in individual sports branches were higher. In a study carried out by Karademir (2020), the participants were determined to have attended different sports branches, and it was reported as a result of the study performed with this perspective that the difference among the branches was statistically significant, and that the individuals who had the highest level of exercise addiction were those who did fitness, and it was followed respectively by other individual sports like dance, and plates and the other team sports. It was revealed in this study that individuals who attended team sports had a lower level of exercise addiction. This finding has been confirmed by the existing studies. Team sports constitute a unique social environment for individuals. Friendship relations are more colorful in these environments. Despite the fact that it is not a definite factor in helping individuals avoiding exercise addiction, team sports attendance is thought to be a guiding factor to solve this complex structure.

It has been stated in the literature that exercise addiction differs according to the type of the exercise. For example, it has been reported that individuals who do bodybuilding exercises have a higher level of exercise addiction than those who do fitness and cardio and that they tend to increase the degree and frequency of the exercise to increase the expected effect by doing more exercises longer than it is planned (Nogueira et al., 2018; Costa, 2013).

It is also stressed that young boys tend to do body building exercises which aim at increasing the amount of the muscle mass in a short time by taking additive supplements and nutrients for the purpose of creating and having an aesthetic image. These findings are important facts to show how important age, type and frequency of exercise are in exercise addiction.

5. CONCLUSION AND SUGGESTIONS

As a result of this study which examines the exercise addiction levels of the Sports Science students, it was determined that physical activity, and the age at which activity is done, gender, the class and the department where the individual studies and the amount of money spent on exercise are each important signs. The fact that exercise frequency and time delays the social needs of the individuals and also the fact that they can share the expected physical improvement they have as a result of the regularly carried out sports activities on the social media are the factors which may affect the exercise addiction level and risk of the individuals.

When a frequently observed behavior in young people reaches an exaggerated level , it may become an addiction and may prepare the basis for other uncontrolled behaviors. The importance of exercise addiction which shows structural similarities to other addiction types should not be ignored. It is suggested that exercise addiction should be analyzed and examined not only on Sports Science students who are continuously involved in sports and exercise but also on different groups. Thanks to this, it will be possible to do detailed comparative analysis. Similarly, it may also be suggested that it may be beneficial to do research and studies on Sport Science students of different universities in different cities to have a general understanding of the existing picture.

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