

Exercise Addiction in Faculty of Health Sciences Students

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Abstract

Exercise refers to a mechanism in which the individual spends energy above the basal level and the musculoskeletal system in do actively. It is an undeniable fact that exercise has an impact on the individual's well-being. However, exercise must also have a certain measure in the in do routine of the individual. Exceeding this measure can be defined as exercise addiction. The aim of this study was determined as the examination of exercise addiction in health sciences faculty students. The research is a descriptive study in the survey model in which quantitative data collection technique is used. The study was carried out on the students of the faculty of health sciences (308 people). Exercise Addiction Scale and personal information form developed by Demir (2018) were used to collect the research data. The analysis of the data was made in the SPSS 21.00 statistical package program. Descriptive statistics, t-test and one-way anova analysis were used in data analysis. As a result of the research, it was seen that the level of exercise addiction of the students of the Faculty of Health Sciences changed according to the gender, the education department, participation in social activities, and having another addiction. In addition, it was found that the average of exercise addiction of the students was in the risky category. This result is thought to be related to the sexist socio-cultural codes of women and men in the popular culture society.

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**Sağlık Bilimleri Fakültesi Öğrencilerinde Egzersiz
Bağımlılığı**

Öz

Egzersiz bireyin bazal düzeyin üzerinde enerji harcadığı, kas iskelet sisteminin aktif olarak çalıştığı bir mekanizmayı ifade eder. Egzersizin bireyin iyi oluş hali üzerinde etkili olduğu yadsınamaz bir gerçektir. Ancak egzersizin de bireyin günlük rutini içinde belirli bir ölçüsü olmak zorundadır. Bu ölçünün aşılması egzersiz bağımlılığı olarak tanımlanabilir. Bu çalışmanın amacı Sağlık Bilimleri Fakültesi öğrencilerinde egzersiz bağımlılığının incelenmesi olarak belirlenmiştir. Araştırma nicel veri toplama tekniğinin kullanıldığı tarama modelinde betimsel bir çalışmadır. Çalışma Sağlık Bilimleri Fakültesi öğrencileri (308 kişi) üzerinde yürütülmüştür. Araştırma verilerinin toplanmasında Demir (2018) tarafından geliştirilen Egzersiz Bağımlılığı Ölçeği ve kişisel bilgi formu kullanılmıştır. Verilerin analizi SPSS 21.00 istatistik paket programında yapılmıştır. Veri analizinde betimleyici istatistikler, t-testi ve tek yönlü anova analizi kullanılmıştır. Araştırma sonucunda Sağlık Bilimleri Fakültesi öğrencilerinin egzersiz bağımlılığı düzeylerinin cinsiyete, eğitim alınan bölüme, sosyal aktiviteye katılma durumuna, başka bir bağımlılığa sahip olma durumuna göre değiştiği görülmüştür. Ayrıca öğrencilerin genel olarak egzersiz bağımlılığı ortalamalarının riskli kategoride olduğu bulunmuştur.

Anahtar kelimeler: Bağımlılık, Egzersiz, Sağlık Bilimleri Fakültesi Öğrencileri

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Introduction

Movement is an indispensable part of human life, which is why all human activities are defined as physical activity. However, some of all these physical activities are planned, regular, repetitive, aimed at providing, maintaining or perfecting physical fitness, so exercise is a more specific and organized form of physical activity. Exercise refers to a mechanism in which the individual spends energy above the basal level and the musculoskeletal system works actively (Özer, 2013; Pitta, et al.,2006). The individual's goals related to physical structure from exercise (protection from cardiovascular diseases, increasing endurance, increasing muscle density and strength, reducing fat ratio, shaping the body, etc.) as well as psychosocial goals (looking beautiful-handsome, being attractive, socializing, gaining prestige, gaining approval) appreciation, etc.).It is an undeniable fact that exercise is effective on the individual's well-being, no matter what purpose it is used for (Turkay,et al.,2019; Demir and Türkeli, 2019; Ardıç, 2014; Warburton, et al.,2006). However, exercise must also have a certain measure in the daily routine of the individual. If this measure is exceeded frequently, exercise may cause negative effects on the individual (Szabo, 1998; Adams, 2009; Koçyiğit, et al.,2022). Today, more young people, especially appearance anxiety, socialization and so on. It can be said that exercise performed for psychosocial reasons such as. Constantly exceeding this criterion can cause addiction (Adams,2009), which is expressed as exercise addiction, which is considered the most contradictory among other addictions. Namely; in addition to being a largely supported health behavior, exercise can also be an effective part of the prevention of various disorders and the treatment of psychological problems (Biddle and Mutrie, 2007; Warburton, et al.,2006). It is also encouraged as part of a recovery program, even with other addictions. It can also form part of new and effective approaches to the treatment of mental health problems that occur with or underlie addictions, such as depression and borderline personality disorder (Carek, et al., 2011).

Addiction can lead to repetitive and compulsive behaviors that negatively affect daily life. It is expressed as a state of desire that is difficult to resist even if it harms the individual (Batu and Aydın, 2020). Addictive behaviors are classified in two ways as substance addiction and process or behavioral addiction. Exercise addiction is a kind of process addiction in which the individual's mood towards a certain event becomes dependent on addictive behaviors (Eysenck, 1997). It is stated that many educational, occupational and social activities are adversely affected due to excessive exercise. It is stated that in cases where exercise is neglected, depression may develop. Although physical exercise is recommended as a very important prescription in the therapy of both health and diseases because it is a factor that contributes to the quality of life of people, the type, intensity and duration of exercise cause both physiological and metabolic changes in the human body. Therefore, the relationship between athletic performance, heavy exercise and physiological

changes should be well known (Akpınar Kocakulak, et al.,2020; Koçyiğit and Akın, 2020). Like other behavioral addictions, exercise addiction is controversial. Some experts oppose the idea that excessive exercise can create an addiction, considering that for an activity to be a true addiction, a lack of a psychoactive substance that produces symptoms (observation of withdrawal symptoms) must be felt (Freimuth, 2006; Berczik, et al.,2012).Whereas, observed in exercise addiction; It is the behaviors such as increasing the duration of exercise, frequency and intensity of exercise, designing life according to exercise, avoiding social relations, avoiding time for anything other than exercise (Hausenblas and Downs, 2002). However, diagnosing exercise addiction is not always easy. Most exercise addicts do not see or express anything wrong with their behavior. In addition, it is not yet a type of addiction recognized by the American Psychiatric Association (APA), so there is no consensus on the specific diagnostic criteria to be used (Berczik,et al., 2012; American Psychiatric Association, 2010). While regular exercise is generally a healthy activity, exercise addiction usually includes excessive exercise that impairs physical health, spending too much time exercising against personal and professional life, and exercising regardless of physical use (Landolfi, 2013; Demetrovics and Kurimay, 2008).

While talking about exercise addiction, different terminologies such as pathological exercise and compulsive exercise are used in the research literature, but both point to a similar psychological state (Cunningham, et al., 2016; Eberle, 2004; Taranis, et al.,2011). Increasing the number of days, exceeding the planned exercise time, in short, is the situation where the time spent on exercise cannot be controlled. In some studies, it is stated that exercise addiction can develop depending on many personal factors such as personality traits, psychological factors, age, and gender (Bavlı, et al.,2011). In some studies, it is stated that exercise addiction, which is expressed as an unhealthy obsession with physical fitness and exercise, usually starts with a desire for physical fitness, but over time, it can turn into an unhealthy exercise obsession that leads to an eating disorder such as anorexia nervosa, bulimia, or a kind of obsessive compulsive disorder such as bigorexia and muscle dysmorphia. (Trott, et al., 2021). At this point, it should be noted that a body dysmorphic disorder or body image disorder can also cause exercise addiction (Tylka, 2013).

In the literature, there are studies explaining exercise addiction with physiological processes. According to these studies, exercise causes the release of certain chemicals in the nervous system, which creates a feeling of pleasure or reward in the individual. It is thought that exercise addiction can be explained by the addiction to this pleasure response. As a matter of fact, it should not be forgotten that endorphins and dopamine released during exercise are the same neurotransmitters released during drug use. An exercise addict feels reward and joy while exercising. When they stop exercising, these neurotransmitters go away from the body (Adams, 2009).

It is argued that a person will need to maintain an intense level of exercise in order to optimize and activate certain reward systems within the mesolimbic dopamine system. For this reason, exercise addicts need to exercise more and more every day to trigger chemical release (Freimuth, et al.,2011). It is stated that continuous and intense exercises can suppress immune function and increase susceptibility to the same infections. During long-term/intense exercise, the amount of oxygen consumed varies depending on the intensity and type of exercise, but generally increases significantly compared to rest, causing the formation of free radicals (reactive oxygen species, ROS) that cause oxidative stress. ROS are constantly formed in the body, but physical exercise leads to a further increase in ROS and cannot be sufficiently removed by the antioxidant defense system (Radak, et al., 2007). Nucleic acids react with various molecules such as proteins, membranes and cause many damage to cells and tissues. In fact, it has been shown by many studies that intense exercise causes oxidative damage in DNA (Kocakulak, et al., 2020). Other studies have evaluated the prevalence of exercise context in the younger population. Considering the prevalence rates of exercise addiction; It is reported that it is mostly observed in those who work in the field of sports sciences, students and fitness, and this rate is around %3 and %9 worldwide (Villella, et al., 2011). In a study conducted in Russia, exercise addiction was found to be %23, and in another study conducted in Spain, it was found to be the second most common type of addiction with %27. However, the prevalence of exercise dependence is still unknown, because there are very few clinical cases in the literature (Terry, et al., 2004).

It is expected that health sciences faculty students are educated on the basis of health, so that their healthy lifestyle behaviors are more developed (more awareness of addictions) and therefore exercise addiction is less observed. It is noteworthy that more work is needed. For this reason, the aim of this study was determined as the examination of exercise addiction in health sciences faculty students. At the end of the study, it was aimed to make a situation description of the students of the faculty of health sciences about exercise addiction, which has become widespread in today's societies, and to create recommendations for raising awareness in young people who will be the future health professionals based on this situation.

Material and Method

Model of The Research

The research is a descriptive study in the screening model in which quantitative data collection technique is used in terms of describing the exercise addiction levels of the students of the Faculty of Health Sciences. The screening model is a research approach that reveals a past or present situation without changing it (Karasar,2008).

Population and Sample

The study includes the students of Izmir Democracy University Faculty of Health Sciences. In the sample selection of the study, easily accessible sample selection was preferred and 308 volunteer students with an average age of 21 years were reached. Descriptive statistics related to the research are given in Table 1.

Table 1
Descriptive Statistics of Participants

Variables	Groups	N	%
Gender	Female	193	%62.7
	Male	115	%37.3
Department	Nutrition and Dietetics	108	%35.1
	Exercise and Sport Sciences	64	%20.8
	Physical therapy and Rehabilitation	69	%22.4
	Nursing	67	%21.8
Economic Situation	Lower	17	%5.5
	Middle	255	%82.8
	Upper	36	%11.7
Class Level	I.Class	63	%20.5
	II. Class	78	%25.3
	III. Class	128	%41.6
	IV. Class	39	%12.7
Participation in Social Activities	Yes	226	%73.4
	No	82	%26.6
Purpose of Exercise	I Can't Stop Exercising	21	%6.8
	I Exercise Because Sports Will Be My Profession	25	%8.1
	I Exercise For A Healthy Life	186	%60.4
	I Exercise To Socialize	76	%24.7
Having any addiction	Yes	63	%20.5
	No	245	%79.5
Weekly Frequency of Exercise	Never	78	%25.3
	1 Day	20	%6.5
	2 Day	63	%20.5
	3 Day	61	%19.8
	4 Day	39	%12.7
	5Day	35	%11.4
	6 Day	12	%3.9

Table 1 according to the gender variable, 62.7% of the participants were female, 37.3% were male; according to the department variable, 35.1% were Nutrition and Dietetics, 20.8% were Exercise and Sports Sciences, 22.4% were Physiotherapy and Rehabilitation, 21.8% were Nursing Department; according to the economic status variable, 5.5% were low, 82.8% were medium, 11.7% were high; according to the grade variable, 20.5% were 1st grade, 25.3% were 2nd grade, 41.6% were 3rd grade, 12.7% were 4th grade; according to the variable of participation in social activities, 73.4% participated in social activities, 26.6% did not participate in social activities; according to the purpose of exercise, 6.8% do not exercise, 81.1% do sports professionally, 60.4% do sports for a healthy life, 24.7% do sports for socializing, 20.5% have another addiction, 79.5% do not have any other addiction; 25.3% did not exercise at all, 6.5% exercised 1 day a week, 20.5%

exercised 2 days a week, 19.8% exercised 3 days a week, 12.7% exercised 4 days a week, 11.4% exercised 5 days a week, and 3.9% exercised 6 days a week.

Data Collection Tools

The Exercise Addiction Scale developed by Demir (2018) was used to determine the Exercise Addiction levels of the participants in the study. 5-point Likert-type scale Excessive Focus and Change of Emotion (1, 2, 3, 4, 5, 6, 7), Postponement of Individual-Social Needs and Conflict (8, 9, 10, 11, 12, 13), Development of Tolerance and Passion (14, 15, 16, 17). In the reliability analysis conducted during the research process, the Cronbach Alpha reliability coefficients for the whole scale and its sub-dimensions were determined as .85,.83,.79,.81 respectively ($p < .001$). The score ranges to be used in the evaluation of the exercise addiction scale were defined by Demir (2018) as 1-17 normal, 18-34 low-risk, 35-51 risky, 52-69 dependent, 70-85 highly dependent. In the study, a personal information form prepared by the researchers was used to collect personal information.

Analysis of Data

Research data were analyzed in SPSS (Statistical Package for Social Sciences) 26.00 package program. The Kolmogorov-Smirnov test was used to examine whether the answers given by the participants to the questions in the scale showed a normal distribution, and the skewness and kurtosis values related to the results of the examination are given in Table 2.

Table 2

Kolmogorov-Smirnov Test Values of Participants' Scale Scores

Scale	N	Skewness	Kurtosis	P
Exercise Addiction Scale	308	.035	-.188	.200

When Table 2 is examined, it is seen that the skewness and kurtosis values of the participants' answers to the scale are in accordance with the normal distribution and the difference between these scores is not significant. In the literature, it is emphasized that the skewness and kurtosis values of normal distribution should be within ± 1 (George & Mallery, 2016; Demir et al. 2016). Therefore, in the analysis of the research data descriptive statistics (frequency, percentage, arithmetic mean, standard deviation), t-test, anova test statistical techniques were used. The significance level was taken as $p < .05$.

Ethics of Research

In order to carry out the study, ethics committee approval was obtained from the Social and Human Sciences Ethics Committee of Izmir Democracy University on 13/12/2021 with the decision number 2021/12-19.

Findings

In the study, the exercise addiction levels of the students of the Faculty of Health Sciences were analyzed by t-test according to the gender variable, and the results of the analysis are Table 3 has also been given.

Table 3

Exercise Addiction Levels of Faculty of Health Sciences Students by Gender Variable

Scale Sub-Dimension	Gender	N	X	SS	t	P
Extreme Focus and Emotional Shifts	Female	193	3.16	.87	3.02	.00*
	Male	115	3.47	.88		
Postponing Individual Social Needs and Conflict	Female	193	2.13	.79	3.77	.00*
	Male	115	2.48	.82		
Postponing Individual Social Needs and Conflict	Female	193	2.38	.97	3.96	.00*
	Male	115	2.83	.90		

*p<0.05

When examined Table 3, it is seen that the exercise addiction levels of the students of the faculty of health sciences differ according to the gender variable. It was observed that the said difference was in favor of male students in all sub-dimensions of the scale, that is, the average of exercise addiction of male students was higher than that of females.

In the study, the exercise addiction levels of the students of the Faculty of Health Sciences were analyzed by one-way anova according to the department variable, the results of the analysis are Table 4 has also been given.

Table 4

Exercise Addiction Levels of Faculty of Health Sciences Students by Department Variable

Scale Sub-Dimension	Department	N	X	SS	F	P
Extreme Focus and Emotional Shifts	Nutrition and Dietetics	108	3.19	.76	15.27	.00*
	Exercise and Sport Sciences	64	3.84	.74		
	Physical Therapy and Rehabilitation	69	2.88	.92		
	Nursing	67	3.29	.90		
Postponing Individual Social Needs and Conflict	Nutrition and Dietetics	108	2.10	.78	10.26	.00*
	Exercise and Sport Sciences	64	2.74	.82		
	Physical Therapy and Rehabilitation	69	2.16	.85		
	Nursing	67	2.16	.66		
Tolerance Development and Passion	Nutrition and Dietetics	108	2.28	.91	16.44	.00*
	Exercise and Sport Sciences	64	3.24	.89		
	Physical Therapy and Rehabilitation	69	2.37	.91		
	Nursing	67	2.50	.88		

*p<0.05

When examined Table 4, it is seen that the exercise addiction levels of the students of the Faculty of Health Sciences differ in all sub-dimensions of the scale according to the department variable. When the averages of the students are examined, it is observed that the said difference is in favor of the students of the Exercise and Sports Sciences department.

In the study, the exercise addiction levels of the students of the Faculty of Health Sciences were analyzed with the t-test according to the variable of participating in social activities, the results of the analysis Table 5 has also been given.

Table 5
Exercise Addiction Levels of Faculty of Health Sciences Students According to Socialization Behavior Variable

Scale Sub-Dimension	Gender	Status of Participating in Social Activitie	N	X	SS	t	P
Extreme Focus and Emotional Shifts	Male	Yes	78	3.54	.86	1.16	.24
		No	37	3.33	.90		
	Female	Yes	148	3.28	.83	3.64	.00*
		No	45	2.76	.87		
Postponing Individual Social Needs and Conflict	Male	Yes	78	2.43	.79	1.02	.30
		No	37	2.60	.89		
	Female	Yes	148	2.21	.77	2.79	.00*
		No	45	1.84	.76		
Tolerance Development and Passion	Male	Yes	78	2.77	.90	.88	.38
		No	37	2.93	.91		
	Female	Yes	148	2.50	.98	3.17	.00*
		No	45	1.99	.81		

*p<0.05

When examined Table 5, it is seen that there is a difference in all sub-dimensions of the scale in favor of female students participating in social activities according to the variable of the level of exercise addiction of the Faculty of Health Sciences students participating in social activities.No significant difference was observed among male students.

In the study, the exercise addiction levels of the students of the Faculty of Health Sciences were analyzed with the t-test according to the variable of having like cigarettes or alcohol another addiction, the results of the analysis Table 6 has also been given.

Table 6
Exercise Addiction Levels of Health Sciences Faculty Students According to Another Addictive Variable

Scale Sub-Dimension	Gender	Having Another Addiction	N	X	SS	t	P
Extreme Focus and Emotional Shifts	Male	Yes	27	3.41	.81	.44	.66
		No	88	3.49	.90		
	Female	Yes	36	2.96	.87	1.50	.13
		No	157	3.21	.87		
Postponing Individual Social Needs and Conflict	Male	Yes	27	2.38	.84	.75	.45
		No	88	2.52	.82		
	Female	Yes	36	2.00	.87	1.02	.30
		No	157	2.15	.76		
Tolerance Development and Passion	Male	Yes	27	2.73	.97	.64	.52
		No	88	2.86	.82		
	Female	Yes	36	2.43	.77	1.75	.08
		No	157	2.44	.97		

*p<0.05

When examined Table 6, it is seen that the levels of exercise addiction of the Faculty of Health Sciences students do not differ in all sub-dimensions of the scale in both female and male students according to the variable of students having like cigarettes or alcohol another addiction.

In the study, the exercise addiction levels of the students of the Faculty of Health Sciences were analyzed with one-way anova according to the variable of the reason for doing sports, and the results of the analysis are Table 7 has also been given.

Table 7

Exercise Addiction Levels of Faculty of Health Sciences Students According to the Variable of Reason for Doing Sports

Scale Sub-Dimension	Reason for Doing Sports	N	X	SS	F	P
Extreme Focus and Emotional Shifts	I Can't Stop Exercising	21	3.83	.90	15.32	.00*
	I Exercise Because Sports Will Be My Profession	25	3.69	.76		
	I Exercise For A Healthy Life	186	3.37	.79		
	I Exercise To Socialize	76	2.77	.92		
Postponing Individual Social Needs and Conflict	I Can't Stop Exercising	21	2.93	.83	11.43	.00*
	I Exercise Because Sports Will Be My Profession	25	2.54	.78		
	I Exercise For A Healthy Life	186	2.29	.78		
	I Exercise To Socialize	76	1.91	.75		
Tolerance Development and Passion	I Can't Stop Exercising	21	3.05	.96	7.29	.00*
	I Exercise Because Sports Will Be My Profession	25	2.92	.89		
	I Exercise For A Healthy Life	186	2.59	.91		
	I Exercise To Socialize	76	2.18	1.01		

*p<0.05

When examined Table 7, it is seen that there is a difference in all sub-dimensions of the scale according to the reasons for the students of the Faculty of Health Sciences to do sports. It was observed that the said difference was in favor of those who stated that they could not stop without exercising.

Discussion and Conclusion

Since exercise addiction is an exaggerated exercise model that can harm individuals both physically and psychologically, understanding aspects of physical activity behavior can be defined as an important issue in terms of public health (Szabo, et al., 2016). Exercise dependence is between % 0.3 and % 0.5 in the general adult population; It is stated that it varies between %0.3 and % 6.0 among athletes or those who exercise regularly (Mónok, et al., 2012; Szabo, et al., 2016). However, it has been reported that this rate exceeds % 20 in triathlon or elite endurance athletes (Blaydon and Lindner, 2002; Youngman and Simpson,2014).

However, very few of these studies analyzed gender differences. In this study, it was found that the exercise addiction levels of health sciences students were different in favor of male students in all sub-dimensions of the scale according to the gender variable, that is, the average of male

students' exercise addiction was higher than that of females. It is emphasized that men have higher scores than women at the prevalence level (Dumitru, et al.,2018). It can be said that this difference between male and female students according to the gender variable in exercise addiction is due to the type of exercise performed, the characteristics of the sport branch, the reason for participating in exercise, and the frequency of exercise. Contrary to the findings of the study, in some studies, it was found that there was no difference according to gender in the addiction (Uz, 2015; Yıldırım, et al.,2017; Batu and Aydın, 2020; Çetin, et al.,2020; Bootan,2018; Sadık, 2018; Cicioğlu,et al.,2019). For students studying in the Department of Exercise and Sport Sciences, exercise is much more important than students studying in other departments. For this reason, exercise can be a state of devotion for them, rather than an addiction, as it is their future profession. As a matter of fact, according to the results obtained regarding the sub-problem in which the reason for participating in the exercise was asked to the participants in the study; It is seen that the exercise addiction levels of those who participate in exercise because they will do it as a profession in the future are higher than those who participate in exercise for socialization and a healthy life. Some studies have also revealed results that support this finding (Szabo and Griffiths, 2007). In the study, it was also found that the students of the Exercise and Sport Sciences department had higher exercise addiction scores compared to other departments. In addition, it is stated that sports science students report more symptoms related to exercise addiction such as mood changes and internal conflict due to their higher awareness of exercise addiction, and that the population doing exercise may not be aware of exercise addiction in general (Szabo and Griffiths, 2007). It is thought that this level of awareness of the students of the Department of Exercise and Sports Sciences may be due to the fact that they do more regular exercise than others and have more theoretical and practical knowledge about exercise. In the study, a difference was observed among female students in all sub-dimensions of the scale according to the variable of the level of exercise addiction of the students of the Faculty of Health Sciences to participate in social activities. It is remarkable that the said difference is female students who participate in social activities. In this process, the individual learns how to behave in the society of which he is a member; gains the behavioral patterns required by social roles and statuses (Washington and Karen,2001). Therefore, participation in social activities is very important for the socialization process. Gender roles, status and behavior patterns defined for men and women in the social structure are different from each other. While the individual comprehends the cultural values of the society from infancy, he internalizes the gender stereotypes. Considering the socialization process on the basis of sports and physical activity, if the cultural values in the society are knitted with an understanding that keeps women away from the public sphere, which makes women subordinate, women may find it difficult to go beyond these stereotypes in the socialization process. Therefore, women's participation in sports, that is, the use of sports-related public spaces, is possible with more

limited conditions than men. For example, barriers to women's access to recreational areas in society (feeling security concerns about using these areas at late hours, difficult access to these areas, neighborhood pressure, etc.) create invisible walls in front of women's socialization both through sports and by participating in other activities. In the study, it can be said that the fact that female students' participation in sports is possible with more limited conditions than male students causes both a higher level of exercise addiction in male students and a higher level of exercise addiction in female students participating in social activities. As a matter of fact, sports are seen as one of the effective institutions in the socialization process. Exercising is an important tool for socialization. With the change in the social structure and the increase in women's self-awareness, women's participation in sports is becoming more common than before (Güven, et al.,2019; Spaaij ,2012; Whisenant, et al.,2002). However, it is still not at a sufficient level some studies confirm this; in these studies, the percentage of women participating in sports is lower than that of men (Colley, et al., 2011; Troiano, et al., 2008). Therefore, identifying the barriers affecting women's participation in sports helps to encourage women's participation in sports. It is thought that solving problems such as the accessibility and safety of sports fields in the society will create effective results in this regard. In addition, women's participation in sports can be encouraged through mass media (public sports, exemplary social models, etc.) (Huang, et al., 2019). However, care should be taken not to create a perception that it is possible to have certain body sizes that commodify women during this incentive process. Especially in the younger generation, the behavior of having a negative body image or idealizing a body to a certain extent may cause excesses in participation in exercise. In a study, it was stated that the reasons for women's participation in sports were respectively to stay in shape, lose weight, relax, socialize and have fun, while men were to practice exercise, have fun, relax, lose weight and socialize (Skov-Ettrup, et al., 2014). In this study, it was stated as the primary goal for women to stay fit and lose weight. It should be taken into account that the creation of a virtual world in which having a good appearance is presented as the most important condition of the existence of the individual will encourage the development of exercise addiction in young people. As a matter of fact, the exercise addiction levels of the students who stated that they could not stop without exercising in the study were higher than the others in all sub-dimensions of the scale. Considering that the study was conducted on health sciences faculty students, who are thought to have higher awareness of health and sports; Considering the fact that the high exercise dependency of the group, who stated that they could not stop without exercising, could lead to health problems such as anorexia nervosa, bulimia, and bigorexia, necessary studies should be carried out for young people to develop a healthy and regular exercise habit. At this point, it is noteworthy that the majority of the participants in the study stated that they exercised to lead a healthy life. The lower exercise addiction scores of this group can also be explained by the high awareness of the health sciences faculty students. In the

study, it was observed that the level of exercise addiction did not differ according to the participants' status of having another addiction. Exercise addiction is the compulsive repetition of a behavior, which is also the basic characteristic of the behavior of addiction to chemical substances. In the behavioral dimension, there are similarities in both cases. It is thought that the biological processes of addiction to a substance or exercise are similar in terms of its satisfying features (Hausenblas and Downs,2002). However, it is stated that exercise addiction is observed with physical changes such as fatigue, pain, stiffness, hormonal effects, as well as negative effects on ligaments, tendons, bones, cartilage and joints, as well as symptoms of high anxiety, discomfort during resting, and inability to stop exercising (Allegre,et al.,2006). This distinction explains the finding in the study that exercise addiction develops independently from other addictions. As a result, the level of exercise addiction of the students of the Faculty of Health Sciences is at a level that can be defined as risky in general, but it can be said that the students have partial awareness and sensitivity about exercise addiction.It is thought that this result is related to the professional importance of exercise for all departments within the Faculty of Health Sciences. In order to increase this awareness in young people, it can be said that providing information about the diagnostic criteria for exercise addiction will provide more effective results.

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Both authors contributed equally at all stages of the research.

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The authors do not have a conflict statement regarding the research.

References

- Adams, J. (2009).Understanding exercise dependence.journal of contemporary psychotherapy. *Journal of Contemporary Psychotherapy: On the Cutting Edge of Modern Developments in Psychotherapy*, 39, 231–240 doi.10.1007/s10879-009-9117-5
- Akpınar-Kocakulak, N., Polat, Y., Karakükcü, M., Sucan, S., & Çelenk, Ç.(2020). The effects of match conditions on the shaped elements of blood and iron level of football players. *Hacettepe J. Biol. & Chem.*, 48(3), 275-282
- Allegre, B., Souville, M., Therme, P., & Griffiths, M. D. (2006). Definitions and measures of exercise dependence. *Addiction Research and Theory*, 14, 631–646

- American Psychiatric Association,(2010). Diagnostic and statistical manual of mental disorders, text revision (DSM- IV).
- Ardıç, F. (2014). Egzersizin sağlık yararları. *Türkiye Fiziksel Tıp ve Rehabilitasyon Dergisi* 60, 9-14
- Bavlı, Ö., Kozanoğlu, M. E., & Doğanay, A. (2011). Düzenli egzersize katılımın egzersiz bağımlılığı üzerine etkisi. *Selçuk Üniversitesi Beden Eğitimi ve Spor Bilimleri Dergisi*, 13(2), 150-153.
- Batu, B., & Aydın, A. D. (2020).Elit yüzme sporcularının egzersiz bağımlılığı düzeylerinin incelenmesi.*Gaziantep Üniversitesi Spor Bilimleri Dergisi*, 5(4), 399-412.
- Berczik, K., Szabó, A., & Griffiths, M. D. (2012). Exerciseaddiction: Symptoms, diagnosis, epidemiology and etiology. *Subst Use Misuse.*, 47(4), 403417. doi:10.3109/10826084.2011.63912
- Biddle, S. J. H., & Mutrie, N. (2007). Psychology of physical activity: *Determinants, well-being and interventions*. (2nd Edition). Routledge: London. <https://doi.org/10.4324/9780203019320>
- Blaydon, M. J., & Lindner, K. J. (2002). Eating disorders and exercisedependencein triathletes.eating disorders, 10(1)49–60 <https://doi.org/10.1080/106402602753573559>
- Bootan, J. S. (2018). *Kickboks, taekwondo ve muay thai sporcularının egzersiz bağımlılığının araştırılması*.Yüksek Lisans Tezi, Fırat Üniversitesi, Sağlık Bilimleri Enstitüsü, Beden Eğitimi ve Spor Anabilim Dalı, Elazığ
- Carek, P. J., Laibstain S. E., & Carek S.M. (2011). Exercise for the treatment of depression and anxiety. *Int J Psychiatry Med*. 41(1), 15–28. doi:10.2190/PM.41.1.c
- Cicioğlu, H. İ., Tekkurşun-Demir, G., Bulgay, C., & Çetin, E. (2019). Elit düzeyde sporcular ile spor bilimleri fakültesi öğrencilerinin egzersiz bağımlılığı düzeyleri. *Bağımlılık Dergisi*, 20(1), 1-5
- Colley, R. C., Garriguet, D., Janssen, I., Craig, C. L., Clarke, J., & Tremblay, M. S. (2011) Physical activity of Canadian children and youth: Accelerometer results from the 2007 to 2009 Canadian health measures survey. *Health Rep*, 22, 15–23.
- Cunningham, H. E., Pearman, S., & Brewerton, T. D. (2016). Conceptualizing primary and secondary pathological exercise using available measures of excessive exercise. *International Journalof Eating Disorders*, 49(8)778792. <https://doi.org/10.1002/eat.22551>
- Çetin, E., Bulğay, C., Demir, G. T., Cicioğlu, H. İ., Bayraktar, I., & Orhan, Ö. (2020). The examination of the relationship between exercise addiction and performance enhancement in elite athletes.*International Journal of Mental Health and Addiction*, 1-2.
- Demetrovics, Z., & Kurimay, T.(2008). Exercise addiction:a literature review. *Psychiatr Hung* (in Hungarian), 23(2), 129–41. PMID 18956613
- Demir, E., Saatçioğlu, Ö., & İmrol, F.(2016). Uluslararası dergilerde yayımlanan eğitim araştırmalarının normallik varsayımları açısından incelenmesi. *Current Research in Education*, 2(3), 130-148
- Demir, G., & Türkeli, A. (2019). Spor bilimleri fakültesi öğrencilerinin egzersiz bağımlılığı ve zihinsel dayanıklılık.*Spor Bilimleri Araştırma Dergisi* 4(1), 10- 25.
- Dumitru, D. C., Dumitru, T., & Maher, A. J. (2018). A systematic review of exercise addiction: examining gender differences. *Journal of Physical Education and Sport*, 18(3), Art 253, 1738 –1747. doi:10.7752/jpes.2018.03253
- Eberle, S. (2004). Compulsive exercise: too much of a good thing? *National Eating Disorders Association*, 2237
- Eysenck, H. J. (1997).Addiction, personality and motivation.*Human Psychopharmacology* 12(2), 79–87
- Freimuth, M., Moniz, S., & Kim, S.(2011).Clarifying exercise addiction differential diagnosis, co-occurring disorders and phases of addiction. *Int. J. Environ. Res. Public Health*, 8, 4069-4081; doi:10.3390/ijerph8104069
- George, D., Mallery, P. (2016). *IBM SPSS Statistics 23 Step by Step: A Simple Guide and Reference*. New York: Routledge: 112-120.
- Güven, B., Kara, F. M., Özdedeoglu, B. (2019).The socialization process for women with disabilities in sports: A double barrier? *Pamukkale Journal of Sport Sciences*, 10(3), 07-17.
- Hausenblas, H. A., Downs, D. S. (2002).Exercise dependence:a systematic review.*Psychology of sport and exercise*, 3(2), 89-123.

- Huang, H. C., Liu, L. W., Chang, C. M., Hsieh, H., & Lu, H. C.(2019). The effects of locus of control, agents of socialization and sport socialization situations on the sports participation of women in taiwan. *Int. J. Environ. Res. Public Health*, 16, 1841; doi:10.3390/ijerph16101841
- Karasar, N. (2008). *Bilimsel araştırma yöntemi*. Ankara: Nobel Yayıncılık.
- Kocakulak-Akpınar, N., Hamurcu, Z., Donmez-Altuntas, H., Sungur, G., Koca, F., & Çoksevim, B. (2020). Effects of exercise performed at high altitude on the chromosomal dna damage in human peripheral lymphocytes. *Hacettepe J. Biol. & Chem.*, 48(1), 13-20.
- Koçyiğit, B., & Akın S. (2020). Farklı irtifada antrenman yapan tenis oyuncularının kalp atım hızı ve oksijen saturasyon değerlerinin karşılaştırılması. *Süleyman Demirel Üniversitesi Sağlık Bilimleri Dergisi*, 11(4), 399-406.
- Koçyiğit, B., Pepe, O., İçen, & Şahin, İ. (2022) Elit bisikletçilerde egzersiz bağımlılığı düzeylerinin incelenmesi. *Düzce Üniversitesi Spor Bilimleri Dergisi*, 2(2), 119-127.
- Landolfi, E., (2013). Exercise addiction. *Sports Med*, 43, 111–119. Doi:10.1007 /s402 79-012-0013-x
- Mónok, K., Berczik, K., Urbán, R., Szabo, A., Griffiths, M. D., Farkas, J., & Demetrovics, Z.(2012). Psychometric properties and concurrent validity of two exercise addiction measures: A population wide study. *Psychology of Sport and Exercise*, 13(6), 739–746. <https://doi.org/10.1016/j.psychsport.2012.06.003>
- Okutan, M. (2003). Okul müdürlerinin idari davranışları. *Milli Eğitim Dergisi*, 157, 226-236
- Özer, K.(2013). *Fiziksel uygunluk*. Nobel Publishing
- Pitta, D., Franzak, F., & Fowler, D.(2006). Quantifying physical activity in daily life with questionnaires and motion sensors in copd. *European Respiratory Journal*, 27(5).
- Radak, Z., Hae,Y., Chung, D., Koltai, E., et al. (2007). Exercise, oxidative stress and hormesis. *Ageing Research Reviews*, 9,170
- Sadıq, B. J. (2018). *Investigation of the exercise dependence of Athlets' Kick Boxing, Taekwondo and Muay Thai*. Fırat University, Institute of Health Sciences Department of Physical Education and Sports Master Thesis.
- Skov-Ettrup, L. S., Petersen, C. B, Curtis, T., Lykke, M., Christensen, A. I., & Tolstrup, J. S.(2014).Why do people exercise? A cross-sectional study of motives to exercise among Danish adults. *Public Health* 128(2014).
- Spaaij, R.,Anderson, A. (2012). Parents or peers: Which is it? Sport socialization and team identification in Australia: A rejoinder to Melnick and Wann. *Int. Rev. Sociol. Sport* , 47, 526–530.
- Szabo, A. (1998). Studying the psychological impact of exercise deprivation: Are experimental studies hopeless? *Journal of Sport Behaviour*, 21,139-147
- Szabo, A., & Griffiths, M. D.(2007). Exercise addiction in british sport science students. *Int J Ment Health Addiction* 5, 25–28. Doi:10.1007/s11469-006-9050-8).
- Szabo, A., Griffiths, M. D., & Demetrovics, Z. (2016). Exercise addiction. *In Neuropathology of Drug Addictions and Substance Misuse*. <https://doi.org/10.1016/B978-0-12-800634-4.00097-4>
- Taranis, L., Touyz, S., & Meyer,C.(2011). Disordered eating and exercise: Development and preliminary validation of the compulsive exercise test (CET). *European Eating Disorders Review*, 19(3), 256–268. <https://doi.org/10.1002/erv.1108>
- Terry, A., Szabo, A., & Griffiths, M.(2004). The exercise addiction inventory: a new brief screening tool. *Addiction Research & Theory*, 12,5, 489-499, DOI: 10.1080/16066350310001637363
- Troiano, R. P., Berrigan, D., Dodd, K. W.,Mâsse, L. C.,Tilert, T., & Mc Dowell, M.(2008). Physical activity in the United States measured by accelerometer. *Med. Sci. Sports Exerc.*, 40, 181–188.
- Trott, M., Jackson, S., Firth, J., Jacob, L., Grabovac, I., Mistry, A., Stubbs, B., & Smith, L. (2021). A comparative meta-analysis of the prevalence of exercise addiction in adults with and without indicated eating disorders. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity*, 26, 37–46<https://doi.org/10.1007/s40519-0190842>
- Turkay, H., Mumcu, H. E., Çeviker, A., Güngöz, E., & Özlü, K.(2019). Beden eğitiminde temel psikolojik ihtiyaçlar ölçeğinin Türkçe'ye uyarlanması. *Gazi Üniversitesi Eğitim Fakültesi Dergisi*, 39(2), 1135-1155.
- Tylka, T. L. (2013). Evidence for the body appreciation scale's measurement equivalence/invariance between U.S. college women and men. *Body Image*, 10(3), 415–418. <https://doi.org/10.1016/j.bodyim.2013.02.006>

- Uz, İ. (2015). *Fitness merkezlerine düzenli katılan bireylerde egzersiz bağımlılığın incelenmesi*. Yayınlanmamış Yüksek Lisans Tezi. Çanakkale Onsekiz Mart Üniversitesi, Sağlık Bilimleri Enstitüsü. Çanakkale.
- Villella, C., Martinotti, G., Di Nicola, M., Cassano, M., La Torre, G., Gliubizzi, M. D., & Conte, G. (2011). Behavioural addictions in adolescents and young adults: results from a prevalence study. *Journal of Gambling Studies*, 27(2), 203–214. <https://doi.org/10.1007/s10899-010-9206-0>
- Yıldırım, İ., Yıldırım, Y., Ersöz, Y., Işık, Ö., Saraçlı, S., Karagöz, Ş., & Yağmur, R. (2017). Egzersiz bağımlılığı, yeme tutum ve davranışları ilişkisi. *CBÜ Beden Eğitimi ve Spor Bilimleri Dergisi*, 12(1), 43-54.
- Youngman, J., & Simpson, D. (2014). Risk for exercise addiction: a comparison of triathletes training for sprint-, olympic-half-ironman-, and ironman-distance triathlons. *Journal of Clinical Sport Psychology*, 8(1), 19–
<https://doi.org/10.1123/jcsp.2014-0010>
- Warburton, D. E., Nicol, C. W., & Bredin, S. S. (2006). Health benefits of physical activity: the evidence. *CMAJC: Canadian Medical Association Journal, Journal de l'Association Medicale Canadienne*, 174(6), 801–809. <https://doi.org/10.1503/cmaj.051351>
- Washington, R. E., & Karen, D. (2001). Sport and society. *Annu. Rev. Sociol.*, 27, 187-212
- Whisenant, W. A., Pederson, P. M., & Obenour, B. L. (2002). Success and gender: Determining the rate of advancement for intercollegiate athletic directors. *Sex Roles*, 47, 485–491.



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