

# The Effect of Exercise Addiction Levels of Physical Education and Sports School and Sports High School Students on Healthy Living Skills

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## Abstract

The aim of this study is to examine the effects of exercise addiction levels of physical education and sports school and sports high school students on healthy living skills. The research group consists of 269 (88 female, 181 male) volunteer students studying at Bitlis Eren University School of Physical Education and Sports (124 people) and Bitlis Ziya Eren Sports High School (145 people). In the research, “Personal Information Form” was used as data collection tool, “Exercise Addiction Scale” to determine students’ exercise addiction levels, and “Healthy Living Skills Scale” to determine students’ healthy life levels. The data were analyzed with SPSS 22 statistical package program. Significance level was accepted as  $p < 0.05$ . In line with the findings obtained from the research, it was determined that there was a positive and low-level significant relationship between the exercise addiction and healthy living skills scales and the sub-dimensions of the scales. With the gender variable, the total and sub-dimensions of the exercise addiction scale, postponement of individual-social needs and emotional change, tolerance development and passion sub-dimension; the type of school variable and the sub-dimensions of the exercise addiction scale, hyperfocus and emotion change sub-dimension; health priority sub-dimension, which is one of the sub-dimensions of the healthy living skills scale with the height variable; It was determined that there was a statistically significant difference between the exercise frequency variable

and the total score of the exercise addiction scale and the sub-dimensions of the scale, extreme focus and emotion change, tolerance development and passion total score ( $p < 0.05$ ).

**Keywords:** Sport, Athlete, Exercise addiction, Healthy life.

## 1. Introduction

Today, when addiction is mentioned, cigarette, alcohol or drug addiction usually comes to mind. However, internet, social media, gambling and exercise addictions are also among the frequently encountered addictive behaviors. “According to Eysenck (1997), addiction is a concept that expresses an individual’s predisposition to certain types of behavior that may have abnormal and harmful consequences”.

Exercise; planned and programmed physical activities to maintain or improve physical fitness (Taylor, 2000). Although it is universally accepted as a healthy habit, it is accepted that exercise behavior has the potential to turn into an obsessive and harmful behavior on people (Szabo & Griffiths 2007).

Exercise, physical activity, which is the key to a healthy life; It is defined as any bodily movement produced by skeletal muscles that causes energy expenditure of individuals (Matiba, 2015; Tavazar et al., 2014). It is important for the individual to be healthy and to fulfill healthy life skills as a part of his/her life in order to maintain it. Healthy living skills affect both the quality of life and the life span of the individual, and are also expressed as the basic principle in preventing chronic diseases and improving health (Glanz et al., 2008; Kılıç, 2011).

In line with this information, in this study, it was aimed to examine the relationship between exercise addiction levels and healthy living skills of sports high school students who are just at the beginning of their youth and playing sports and physical education and sports high school students.

## 2. Method

The research group consists of 269 (88 female, 181 male) volunteer students studying at Bitlis Eren University School of Physical Education and Sports (124 people) and Bitlis Ziya Eren Sports High School (145 people). While scale was preferred as data collection tool, descriptive survey model was used to determine “Exercise Addiction and Healthy Living Skills”. The scale used in the research consists of two parts, in the first part of the scale, “Personal Information Form” to determine the demographic information of the students, and in the second part, “Exercise Addiction Scale” developed by Tekkurşun Demir et al., (2018) to determine the exercise levels of the students. The “Healthy Living Skills Scale” developed by Genç and Karaman (2019) was used to determine.

### 2.1 Exercise Addiction Scale (EAI)

Ranking and score limits of a five-point Likert-type questionnaire;

Rating:

Strongly Disagree: 1.00-1.79;

Partially Disagree: 1.80-2.59;

Moderately Disagree: 2.60-3.39;

Agree: 3.40-4.19;

Strongly Agree: 4.20-5.00.

Point limits:

1-17 Normal Group;

18-34 Low Risk Group;

35-51 Risk Group;

52-69 Dependent Group;

It was evaluated as “70-85 High Level Dependent Group”.

The validity and reliability study of the Exercise Addiction Scale was carried out by the researchers, and the KMO (Kaiser-Meyer-Olkin Measure of Sampling Adequacy) value was determined as .891, Bartlett Test 1085.010 and (Cronbach Alpha)  $\alpha = 0.88$ .

### *2.2 Healthy Living Skills Scale*

It is a four-point Likert type scale with “Strongly Agree: 4; I strongly disagree: 1” statements, and the highest score that can be obtained from the scale is calculated as 84 and the lowest score is 21.

The validity and reliability study of the Healthy Living Skills Scale was carried out by the researchers, and the KMO (Kaiser-Meyer-Olkin Measure of Sampling Adequacy) value was 0.91, the Bartlett Test 4011.35 and (Cronbach Alpha)  $\alpha = 0.90$ .

### *2.3 Data Analysis*

SPSS statistical program was used in the analysis of the data. Demographic information, exercise addiction and healthy living skills levels of the research group were summarized using percentage, frequency, arithmetic mean and standard deviation techniques as descriptive statistics. After it was determined that the data showed normal distribution, Independent Samples t and One-Way ANOVA tests were applied for in-group comparisons. Correlation analysis was used to determine the direction of the relationship between the variables, and regression analysis was used to determine the effect of exercise addiction on healthy living skills. Significance was accepted as  $p < 0.05$ .

### 3. Results

Table 1. Demographic information of students

		Frequency	Percent (%)
Gender	Male	181	67.3
	Female	88	32.7
Size	150-160 cm	50	18.6
	161-170 cm	90	33.5
	171-180 cm	87	32.3
	181 cm ve üzeri	42	15.6
School Type	High School	145	53.9
	University	124	46.1
Perceived Income Level	Low	73	27.1
	Middle	173	64.3
	Good	23	8.6
Weekly Exercise Status	1 day	31	11.5
	2 day	62	23
	3 day	95	35.3
	4 day or more	81	30.1

When Table 1 is examined, the students who took part in the research; 67.3% were male, 32.7% were female, 33.5% were 161-170 cm, 32.3% were 171-180 cm, 18.6% were 150-160 cm and It was determined that 15.6% of them had a height of 181 cm and above. It was determined that 53.9% of the research group studied at high school and 46.1% at university. According to the perceived income level of the participants, it was seen that 64.3% had a medium level, 27.1% had a low level and 8.6% a good level. It has been determined that 35.3% of the students exercise for three days, 30.1% for four days and more, 23% for two days and 11.5% for one day a week.

Table 2. T-Test analysis of students by gender variable

		Gender		t	p
		$\bar{X}$	ss		
Extreme Focus and Emotional Shifts	Male	24.67	6.52	.703	0.48
	Female	24.09	6.26		
Postponing Individual-Social Needs and Changing Emotions	Male	16.70	5.23	2.276	0.02*
	Female				
	Male	15.18	4.93		
	Female				
Tolerance Development and Passion	Male	13.06	3.84	2.405	0.01*
	Female				
	Male	11.81	4.27		
	Female				
Exercise Addiction Total	Male	54.44	12.59	2.097	0.03*
	Female	51.09	11.70		
Importance Given to Health	Male	28.14	3.91	-1.054	0.29
	Female	28.80	6.34		
Healthy Eating	Male	15.81	3.01	-1.016	0.31
	Female	16.21	3.13		
Sağlıkla İlgili Kaynaklara Ulaşma	Male	13.77	5.09	.357	0.72
	Female	13.55	3.64		
Health Priority	Male	11.43	1.27	1.373	0.17
	Female	11.19	1.45		
Healthy Living Skills Total	Male	69.16	10.18	-.457	0.64
	Female	69.77	10.59		

Note.  $p < 0.05$ .

When Table 2 is examined, it has been determined that there is a statistically significant difference between the gender variable and the total and sub-dimensions of the exercise addiction scale, postponing individual-social needs and emotional change, tolerance development and total passion score averages of the students in the study group ( $p < 0.05$ ). It was determined that there was no statistical difference between the mean scores of hyperfocus

and emotion change sub-dimension ( $p > 0.05$ ). It was observed that there was no statistically significant difference between the gender variable of the students and the total healthy living skills scale and mean scores of all sub-dimensions ( $p > 0.05$ ).

Table 3. Students' T-Test analysis by school type variable

		School Type		t	p
		$\bar{X}$	ss		
Extreme Focus and Emotional Shifts	High School	23.57	6.61	-2.527	0.01*
	University	25.54	6.07		
Postponing Individual-Social Needs and Changing Emotions	High School	15.77	5.38	-1.483	0.13
	University	16.70	4.90		
Tolerance Development and Passion	High School	12.95	4.05	1.295	0.19
	University	12.31	3.98		
Exercise Addiction Total	High School	52.30	13.11	-1.500	0.13
	University	54.57	11.42		
Importance Given to Health	High School	28.67	5.08	1.155	0.24
	University	27.99	4.53		
Healthy Eating	High School	15.77	2.79	-.956	0.34
	University	16.13	3.34		
Accessing Health-Related Resources	High School	13.80	5.25	.396	0.69
	University	13.58	3.87		
Health Priority	High School	11.39	1.21	.530	0.59
	University	11.30	1.46		
Healthy Living Skills Total	High School	69.65	9.95	.506	0.61
	University	69.01	10.72		

Note.  $p < 0.05$ .

When Table 3 is evaluated, it was determined that there was a statistical difference between the students' school type variable and the total mean score of the exercise addiction scale sub-dimensions, excessive focus and emotion change ( $p < 0.05$ ), while the individual-social needs of the total and sub-dimensions of the exercise addiction scale were delayed and It was determined that there was no statistical difference between the emotional change and the

development of tolerance and passion total score ( $p > 0.05$ ). It was determined that there was no statistically significant difference between the school type variable of the research group and the total score averages of the healthy living skills scale and all sub-dimensions ( $p > 0.05$ ).

Table 4. Variance analysis by students' height variable

		Size		F	Sig.
		$\bar{X}$	ss		
Extreme Focus and Emotional Shifts	150-160 cm	24.62	5.02	2.281	0.08
	161-170 cm	24.28	5.74		
	171-180 cm	25.58	6.54		
	181 cm ve üzeri	22.47	8.51		
Postponing Individual-Social Needs and Changing Emotions	150-160 cm	14.96	5.00	2.344	0.07
	161-170 cm	15.72	5.23		
	171-180 cm	17.08	5.30		
	181 cm ve üzeri	16.90	4.73		
Tolerance Development and Passion	150-160 cm	12.06	3.91	2.436	0.06
	161-170 cm	12.55	3.99		
	171-180 cm	13.52	3.90		
	181 cm ve üzeri	11.78	4.26		
Exercise Addiction Total	150-160 cm	51.64	10.38	2.439	0.06
	161-170 cm	52.56	12.29		
	171-180 cm	56.19	12.79		
	181 cm ve üzeri	51.16	13.27		
Importance Given to Health	150-160 cm	29.54	7.50	1.563	0.19
	161-170 cm	27.75	3.86		
	171-180 cm	28.48	3.62		
	181 cm ve üzeri	28.00	4.82		
Healthy Eeating	150-160 cm	15.92	2.53	.089	0.96
	161-170 cm	15.82	3.00		
	171-180 cm	16.03	2.94		
	181 cm ve üzeri	16.04	3.94		

Accessing Health-Related Resources	150-160 cm	13.50	3.83	.937	0.42
	161-170 cm	13.40	3.42		
	171-180 cm	14.37	6.22		
	181 cm ve üzeri	13.19	4.04		
Health Priority	150-160 cm	11.28	1.40	2.788	0.04*
	161-170 cm	11.12	1.75		
	171-180 cm	11.67	0.67		
	181 cm ve üzeri	11.26	1.12		
Healthy Living Skills Total	150-160 cm	70.24	10.70	1.072	0.36
	161-170 cm	68.10	9.35		
	171-180 cm	70.57	10.18		
	181 cm ve üzeri	68.50	11.86		

Note.  $p < 0.05$ .

When Table 4 is examined, it has been determined that there is no statistically significant difference between the height variable of the research group and the total mean scores of the exercise addiction scale and all sub-dimensions of the scale ( $p > 0.05$ ). While it was determined that there was a statistical difference between the students' height variable and the total score average of the health priority sub-dimension, which is one of the healthy living skills scale sub-dimensions ( $p < 0.05$ ), the importance given to health, healthy nutrition and access to health-related resources from the healthy life skills scale total and scale sub-dimensions. It was determined that there was no statistical difference between the total score averages ( $p > 0.05$ ).



Table 5. Variance analysis by students' height variable

		Exercise Frequency		F	Sig.
		$\bar{X}$	ss		
Extreme Focus and Emotional Shifts	1 day	21.58	8.34	4.719	0.00*
	2 day	23.69	6.22		
	3 day	24.42	5.39		
	4 day or more	26.28	6.46		
Postponing Individual-Social Needs and Changing Emotions	1 day	16.77	5.84	.876	0.45
	2 day	15.29	4.99		
	3 day	16.44	5.25		
	4 day or more	16.40	4.96		
Tolerance Development and Passion	1 day	10.38	4.68	4.813	0.00*
	2 day	12.24	3.48		
	3 day	13.11	3.63		
	4 day or more	13.30	4.31		
Exercise Addiction Total	1 day	48.74	15.04	3.444	0.01*
	2 day	51.22	12.03		
	3 day	53.97	11.00		
	4 day or more	56.00	12.55		
Importance Given to Health	1 day	25.51	5.06	4.949	0.00*
	2 day	28.00	4.10		
	3 day	28.83	3.23		
	4 day or more	29.17	6.29		
Healthy Eeating	1 day	14.25	3.87	4.641	0.00*
	2 day	15.95	2.98		
	3 day	16.52	2.54		
	4 day or more	15.90	3.12		
Accessing Health-Related Resources	1 day	12.32	4.24	1.771	0.15
	2 day	13.12	3.48		
	3 day	14.17	3.60		
	4 day or more	14.11	6.33		

Health Priority	1 day	10.93	1.71	1.287	0.27
	2 day	11.32	1.70		
	3 day	11.46	1.03		
	4 day or more	11.40	1.13		
Healthy Living Skills Total	1 day	63.03	12.29	5.533	0.00*
	2 day	68.40	9.25		
	3 day	71.00	7.93		
	4 day or more	70.59	11.77		

*Note.*  $p < 0.05$ .

When Table 5 is evaluated, it has been determined that there is a statistically significant difference between the exercise frequency variable of the students and the total score of the exercise addiction scale and the sub-dimensions of the scale, excessive focus and emotion change, tolerance development and passion total score ( $p < 0.05$ ). It was determined that there was no statistical difference between the postponement of needs and the total mean score of the emotion change sub-dimension ( $p > 0.05$ ). While it was determined that there was a statistically significant difference between the exercise frequency variable of the research group and the healthy living skills scale total and scale sub-dimensions importance to health and healthy nutrition total score averages ( $p < 0.05$ ), there was a statistically significant difference in the sub-dimensions of accessing health-related resources and health priority. It was determined that there was no difference ( $p > 0.05$ ).

Table 6. Pearson correlation analysis of the scales

Scales (n:269)			Extreme Focus and Emotional Shifts	Postponing Individual-Social Needs and Changing Emotions	Tolerance Development and Passion	Exercise Addiction Total	Importance Given to Health	Healthy Eating	Accessing Health-Related Resources	Health Priority	Healthy Living Skills Total
Exercise Addiction	Extreme Focus and Emotional Shifts	r	1	.357**	.514**	.836**	.133*	.124*	.245**	.076	.220**
		p	.	.000	.000	.000	.029	.043	.000	.215	.000
	Postponing Individual-Social Needs and Changing Emotions	r	.357**	1	.448**	.749**	-.004	-.048	.122*	-.121*	.023
		p	.000	.	.000	.000	.946	.430	.045	.048	.703
	Tolerance Development and Passion	r	.514**	.448**	1	.779**	.044	-.005	.171**	-.079	.086
		p	.000	.000	.	.000	.474	.933	.005	.194	.159
	Exercise Addiction Total	r	.836**	.749**	.779**	1	.082	.042	.234**	-.037	.152*
		p	.000	.000	.000	.	.182	.489	.000	.548	.013
Healthy Living Skills	Importance Given to Health	r	.133*	-.004	.044	.082	1	.420**	.327**	.402**	.795**
		p	.029	.946	.474	.182	.	.000	.000	.000	.000
	Healthy Eating	r	.124*	-.048	-.005	.042	.420**	1	.454**	.324**	.742**
		p	.043	.430	.933	.489	.000	.	.000	.000	.000
	Accessing Health-Related Resources	r	.245**	.122*	.171**	.234**	.327**	.454**	1	.143*	.760**
	p	.000	.045	.005	.000	.000	.000	.	.019	.000	
	Health Priority	r	.076	-.121*	-.079	-.037	.402**	.324**	.143*	1	.480**
		p	.215	.048	.194	.548	.000	.000	.019	.	.000
	Healthy Living Skills Total	r	.220**	.023	.086	.152*	.795**	.742**	.760**	.480**	1
		p	.000	.703	.159	.013	.000	.000	.000	.000	.

When Table 6 was evaluated, it was determined that there was a positive and low-level significant relationship between the exercise addiction and healthy living skills scales and the sub-dimensions of the scales ( $R = .152$ ;  $R^2 = .023$ ;  $p > 0.05$ ).

Table 7. Pearson correlation analysis between the research group's attitudes to mental training and playing digital games

		Healthy Living Skills
Exercise Addiction	r	.152*
	p	.013
	N	269

Note.  $p < 0.05^*$ .

When Table 7 is evaluated, it has been determined that there is a significant and positive relationship between exercise addiction and healthy living skills, according to the correlation analysis result.  $r = .152$ ,  $p > 0.05$ .

Table 8. Regression analysis on the prediction of exercise addiction and healthy living skills

Independent variable	The dependent variable	B	Std. Error	$\beta$	t	p	R	$R^2$	F	P
Exercise Addiction	Healthy Living Skills	40.671	5.102	.152	7.972	0.00	.152	.023	6.310	0.00

Note.  $p < 0.05^*$ .

When Table 8 was evaluated, it was determined that there was a positive and low-level significant effect between students' exercise addiction and healthy living skills ( $R = .152$ ;  $R^2 = .023$ ;  $p > 0.05$ ).

#### 4. Discussion

The research group consists of 269 (88 female, 181 male) volunteer students studying at Bitlis Eren University School of Physical Education and Sports (124 people) and Bitlis Ziya Eren Sports High School (145 people). In this study, to examine the relationship between students' exercise addiction and healthy living skills; gender, school type, perceived family monthly income, height and weekly exercise frequency variables were analyzed and examined.

According to the results of the analysis, statistically, in terms of the Exercise Addiction and Healthy Living Skills Scale and its sub-dimensions of the gender variable; While a significant difference was found between the total and sub-dimensions of the exercise addiction scale, the postponement of individual-social needs and the change in emotion, and the total mean of tolerance and passion, there was no statistical difference between the mean scores of the extreme focus and emotion change sub-dimension ( $p > 0.05$ ). In addition, it was observed that there was no statistically significant difference between the gender variable of the students and the total healthy living skills scale and mean scores of all sub-dimensions ( $p >$

0.05). In this context, it was determined that male students' exercise addiction mean scores were higher. On the other hand, it can be said that male students are more fond of exercise and they tend to postpone their basic needs such as eating and drinking and their social needs to exercise more than women. Tekkursun Demir and Türkeli (2019) stated that there was a significant difference in favor of men in the sub-dimensions of tolerance development and passion, delaying individual-social needs and conflict. Paksoy (2021) determined that there was a significant difference in favor of men in the sub-dimension of tolerance and passion. There are also studies in the literature that found that there was no significant difference between the gender variable and exercise addiction, and that reached different results from our research (Vardar, 2012; Bingöl, 2015; Demirel, 2019).

According to the results of the analysis, statistically, in terms of the Exercise Addiction and Healthy Living Skills Scale and its sub-dimensions of the gender variable; While it was determined that there was a statistical difference between the total mean score of the exercise addiction scale sub-dimensions, hyperfocus and mood swing sub-dimensions ( $p < 0.05$ ), there was no statistically significant difference between the total and other sub-dimensions of the exercise addiction scale. It was determined that there was no statistically significant difference between the school type variable of the research group and the total score averages of the healthy living skills scale and all sub-dimensions ( $p > 0.05$ ). In this context, it has been determined that the average of extreme focus and emotion change score of the students in the age group who continue their university education is higher than the students in the high school age group. Considering that the school type variable is directly proportional to the age groups; It can be interpreted that university students have higher exercise addiction levels. Costa and Hausenblas (2013) found that male adults (25-44 years) have higher exercise addiction levels than young male adults (18-24 years). Uzun (2020) reported that the risk of being addicted to exercise is higher in young people between the ages of 18-22 compared to the average exercise addiction score. Sadeq (2018), Bootan (2018) and Cicioğlu et al. (2019) did not find a significant difference between age and exercise addiction.

According to the results of the analysis, statistically, in terms of Exercise Addiction and Healthy Living Skills Scale and sub-dimensions of the exercise frequency variable; It was determined that there was a statistically significant difference between the total mean scores of the exercise addiction scale and the sub-dimensions of the scale, excessive focus and emotion change, tolerance development and passion ( $p < 0.05$ ). In addition, while it was determined that there was a statistical difference between the total healthy living skills scale and the scale sub-dimensions importance to health and healthy nutrition total score averages ( $p < 0.05$ ), no significant difference was found from other dimensions. In this context, it is seen that the total score averages of the students who have exercise frequency of 4 days or more are higher than the dimensions of extreme focus and change of emotion, development of tolerance and importance given to healthy life with passion. On the other hand, it is seen that the healthy life skills of the students who have a healthy nutrition and healthy life skills general total score average of 3 days are higher. It can be stated that students' exercise more regularly and more frequently affects their healthy living skills and healthy nutrition. It is stated that it is of great importance especially in the healthy growth and development of high

school adolescents, the prevention of bad habits that may arise in this period, the increase in socialization, which gains importance in this period, and the acquisition of healthy lifestyle behaviors (Tavazar et al., 2014). Bavli et al. (2011) reported that high weekly exercise frequency may be effective in the emergence of exercise addiction.

## 5. Conclusion

According to the analysis results, as a result; It was determined that there was a positive and low-level significant relationship between the exercise addiction and healthy living skills scales and the sub-dimensions of the scales. Exercise has many psychological, social and physical benefits on the individual. We can think that a person's healthy lifestyle behaviors can also develop positively. As long as exercise is controlled, it has many positive effects both physically and mentally. When it is overdone, when it comes to addiction, negative results can occur. It is thought that supporting exercise with healthy living skills will move exercise away from addiction and contribute to its progress in a positive way.

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