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**Dr. Meral Demir**  
Ministry of Sport, Manisa,  
Turkey, 2. Anafartalar Mah,  
1516 Sok, No: 25/6, 45020  
Manisa, Turkey

## Examination of exercise addiction and physical literacy awareness levels of physical education teachers, trainers and sports managers

**Dr. Meral Demir**

### Abstract

**Aim:** In this study, it was aimed to examine the exercise addiction and physical literacy awareness levels of physical education teachers, trainers and sports managers.

**Method:** A total of 186 individuals, 78 women and 108 men, consisting of Physical Education teachers, Trainers and Sports Managers working in Manisa, participated in this study. "Sports Literacy Awareness Scale" (SLAS), "Exercise Addiction Scale" (EAS) and "Personal Information Form" were used to collect data. Data were evaluated with Mann-Whitney U Test, Kruskal Wallis-H (Bonferroni correction) Test, Spearman Relationship Test and Chi-square analysis.

**Findings:** As a result of the analyzes made, the variables of gender and age didn't make a difference in the SLAS and EAS scores. Regular Physical Activity (RPA) ( $p=.001$ ), team supporting ( $p=.007$ ), occupational group ( $p=.005$ ), exercise dependence level ( $p=.001$ ) and weekly exercise repetition ( $p=.035$ ) made the difference. In terms of exercise addiction level, Physical Education teachers were in the "risk group" and the trainers were in the "highly dependent" groups. The relationship between SLAS and EAS total scores was  $r=.189$ , and the relationship between SLAS and EAS's "Extreme Focus and Emotion Change" subscale was  $r=.391$ .

**Result:** While Regular Physical Activity (RPA), team supporting, occupational group, exercise addiction level and weekly exercise repetition made a difference on exercise addiction, it didn't affect physical literacy awareness. A low level of positive correlation was found between SLAS and EAS. It was concluded that the trainers experienced the highest level of exercise addiction.

**Keywords:** Exercise addiction, physical literacy, awareness

### 1. Introduction

Exercise is generally a healthy behavior. It has been amply demonstrated in the literature that exercising regularly not only improves one's quality of life, but also its positive role on psychological and physical health (Orhan *et al.* 2019; Landolf 2013) [21, 17]. However, excessive exercise can have negative effects. (Berczik *et al.* 2012) [5]. Researchers examining the negative consequences of physical activity have primarily focused on exercise addiction. Exercise addiction is characterized by increased amounts of exercise or excessive participation in strenuous physical activity, which takes precedence over other areas of life (Lichtenstein *et al.* 2014) [18]. According to Hausenblas and Downs (2002) [12], exercise addiction is a craving for physical activity in spare time, manifested by physiological and/or psychological symptoms, resulting in uncontrollable excessive exercise behavior.

Exercise addiction appears to be a socially accepted behavior (Lichtenstein *et al.* 2017) [19]. In other words, the individual's continuous increase in the duration, intensity and frequency of exercise, not allocating time to his/her family, friends and social life to exercise, perceiving and planning his/her life within the framework of exercise, failure to control his/her behaviors, and deprivation in maintaining the behavior in cases where he/she does (not) perform physical exercise are important factors of exercise addiction (Zmijewski and Howar, 2000; cited Akgöl, 2019 [1]; Weinstein *et al.* 2015) [1, 30]. In short, exercise provides individuals with both physical and psychological well-being ((Bouchard *et al.* 2008; cited, Akgöl, 2019) [1], however, excessive exercise can cause distress and addiction to the individual in these areas (Yates, 1991; Szabo, 2000; cited Polat and Yıldırım Şimşek, 2015) [22].

As Maslow stated, it is possible to generalize the most basic needs of human beings physiologically and psychologically. Throughout the ages, it has been suggested that the individual should move his/her body in order to be healthy, and the necessity of doing this

**Correspondence Author;**  
**Dr. Meral Demir**  
Ministry of Sport, Manisa,  
Turkey, 2. Anafartalar Mah,  
1516 Sok, No: 25/6, 45020  
Manisa, Turkey

movement in conscious ways has gained importance. It seems possible for the individual to reach this consciousness by developing the level of awareness-raising literacy. Literacy is the ability to read the literature of a language, to perceive and comprehend the reading items (TLS, 2022) [37]. Today, literacy has become an educational term that goes beyond reading and writing activities and expresses many mental skills, communication skills and attitudes using language (Aşıcı, 2009) [3]. It can be expected that a literate person can analyze the characteristics of his/her physical environment at a good level, determine what the need for movement is, how it should be met, and anticipate possibilities (Soytürk and Tepeköylü Öztürk; 2022) [36]. One of these terms, physical literacy, refers to the level of competence that includes the skills, practices and abilities that provide access to information in life, as well as the selection of tools necessary for sports in daily life and the effective participation of people in sports-related social activities (Demir *et al.* 2019) [8]. In other words, physical literacy considers all of the basic skills brought by sports as a whole. These skills enable individuals to make useful, respectful, healthy choices for themselves, others and their environment throughout their lives (Ülker, 2019) [28]. In addition, it has been emphasized that it has an important role in sports education because it has multidimensional features that will develop the concepts of physical literacy, self-esteem and self-confidence, and offers the potential to create internal motivation resources that will enable participation in sports (Hastie and Wallhead, 2015) [11].

It is thought that physical education teachers, trainers and sports managers are the important actors of the sport phenomenon and form the basis of education. Apart from training the sportsmen who are open to knowledge and innovations, besides training the athlete, physical literacy is necessary for the individual to question and make sense of the work he/she does as a result (Demir and Soytürk 2021) [7], to take a role in increasing the willingness to participate in sports environments by activating the affective skills of the individuals in the sports environment. In this study, it was aimed to examine exercise addiction and physical literacy of physical education teachers, trainers and sports managers together.

**2. Maternal and Method**

**2.1. Research Model**

This study was carried out with the screening model, which is one of the quantitative research techniques. Scanning model is the scanning arrangements made on the whole universe or a group or sample to be taken from it in order to make a general judgment about the universe in a universe consisting of many elements (Karasar, 2017) [16].

**2.2. Participants**

A total of 186 people, 103 Physical Education teachers, 55 Trainers and 28 Sports Managers, who work in the Ministry of National Education and Manisa Youth and Sports Directorate (MNE and MYSD) in Manisa, participated in the study.

**Table 1:** Frequency Distribution of Participants' Demographic Characteristics

Personal Information	Subgroups	Frequency(f)	Percentage(%)
Sex	Female	78	41.9
	Male	108	58.1
Occupation	Physical Education (PE)	103	55.4
	Trainer (T)	55	29.6
	Sports Manager (SM)	28	15.1
Regular Physical Activity	Yes	124	66.7
	No	62	33.3
Team Supporting (Supporter)	Yes	149	80.1
	No	37	19.9

As can be seen in the table, the sample group consists of a total of 186 people, 78 of whom are female and 108 are male. The number of physical education teachers is 103, the trainer is 55 and the sports manager is 28. In total, 124 people stated that they did regular physical activity and 62 people did not. 149 people stated that they support a team and 37 people stated that they do not support a team.

**2.3. Data Collection Tools**

In this study, Sports Literacy Awareness Scale (SLAS), Exercise Addiction Scale (EAS) and Personal Information Form (PIF) were used as data collection tools.

**2.3.1. Exercise Addiction Scale (EAS)**

The validity and reliability study of the scale was carried out in Turkey by Tekkurşun Demir *et al.* (2018) [27]. EAS is a 5-point Likert-type measurement tool consisting of 17 items and 3 sub-dimensions. The sub-dimensions are Hyperfocus and Emotion Change, Postponing Individual-Social Needs and Conflict, Tolerance Development and Passion. Cronbach Alpha reliability coefficients were found to be 0.83 for Excessive Focus and Change of Emotion factor,

0.79 for Postponement of Individual-Social Needs and Conflict, 0.77 for Development of Tolerance and Passion factor, and Cronbach Alpha as .88 in total (Tekkurşun Demir ve ark. 2018) [27]. In the current study, Cronbach Alpha was found to be .86 in total.

**2.3.2. Sports Literacy Awareness Scale (SLAS)**

The scale was created by Sum ve ark. (2016) [24] to evaluate the views of Physical Education Teachers on Physical Literacy in Hong Kong, was developed by Ülker (2019) [28] and its validity-reliability was made. It is a scale form that consists of 12 items in total, scored as a 5-point Likert scale. It is a one-dimensional scale. For reliability analysis, Cronbach's Alpha and Guttman Split-Half coefficients were examined, and 922 and 865 coefficients were obtained for the single Alpha factor, respectively (Ülker 2019) [28]. In the current study, Cronbach Alpha was found to be .76 in total.

**2.3.3. Personal Information Form**

It was prepared by the researchers in accordance with the literature. The question items consist of Gender, Occupational Group, Regular Physical Activity

Participation, Sports Team Supporters (fans).

**2.4. Analysis of Data**

Descriptive statistical methods such as frequency (f), percentage (%) and standard deviation (SD) were used in the evaluation of the data. Statistical analysis of the data obtained from the research was carried out using the SPSS

25.0 package program. Scores obtained from the scales were evaluated with Mann-Whitney U Test according to gender variable, Kruskal Wallis -H (Bonferroni correction) and Spearman Relationship Test according to occupational groups variable.

**3. Findings**

**Table 2:** Comparison of exercise addiction and physical literacy awareness levels of physical education teachers, trainers and sports managers by gender variable

Subgroups	Sex	N	Rank Avg.	Rank Total	U	P
Exercise Addiction Scale Total	Female	78	89,85	7008.00	-.788	.431
	M	108	96,14	10383.00		
Extreme Focus and Emotional Shifts	Female	78	92,84	7241.50	-.143	.886
	M	108	93,98	10149.50		
Postponement of Individual-Social Needs and Conflict	Female	78	93,56	7298.00	-.014	.989
	M	108	93,45	10093.00		
Tolerance Development and Passion	Female	78	87,63	6835.00	-1.271	.204
	M	108	97,74	10556.00		
Sports Literacy Awareness Scale Total	Female	78	86,47	6745.00	-1.525	.127
	M	108	98,57	10646.00		

As a result of the Mann Whitney-U test, which was conducted to determine whether the scores of the participants from the Exercise Addiction scale differed

significantly according to the gender variable, no significant difference was found in all sub-dimensions and mean scores.

**Table 3:** Comparison of exercise addiction and physical literacy awareness of physical education teachers, trainers and sports managers by occupational variable

Subgroups	Occupation	N	Range Avg.	sd	P
Exercise Addiction Scale Total	PE	103	83.66	2	.005*
	T.	55	112.70		
	SM	28	91.98		
Extreme Focus and Emotional Shifts	PE	103	87.49	2	.121
	T.	55	105.77		
	SM	28	91.52		
Postponement of Individual-Social Needs and Conflict	PE	103	85.75	2	.080
	T.	55	105.01		
	SM	28	99.41		
Tolerance Development and Passion	PE	103	83.70	2	.002*
	T.	55	114.65		
	SM	28	87.98		
Sports Literacy Awareness Scale Total	PE	103	89.30	2	.475
	T.	55	99.73		
	SM	28	96.71		

Physical Education (PE); Trainer (T); Sports Manager (SM) As a result of Kruskal Wallis -H, which was conducted to determine whether the average rank of the Exercise Addiction Scale differs significantly according to the occupational group variable of the participants, the

difference between the average scores in the Exercise Addiction Scale Total score and the Development of Tolerance - Passion sub-dimension was found to be statistically significant.

**Table 4:** Comparison of exercise addiction and physical literacy awareness levels of physical education teachers, trainers and sports managers by regular physical activity variable

Subgroups	Regular Physical Activity	N	Range Avg.	Range Total.	U	p
Exercise Addiction Scale Total	Yes	124	104.46	12953.00	-3,931,	000*
	No	62	71.58	4438.00		
Extreme Focus and Emotional Shifts	Yes	124	105.90	13131.00	-4,461,	000*
	No	62	68.71	4260.00		
Postponement of Individual-Social Needs and Conflict	Yes	124	95.88	11889.00	-,857,	391
	No	62	88.74	5502.00		
Tolerance Development and Passion	Yes	124	103.86	12879.00	-3,734,	000*
	No	62	72.77	4512.00		
Sports Literacy Awareness Scale Total	Yes	124	96.41	11954.50	-1,050,	294
	No	62	87.69	5436.50		

As a result of the Mann Whitney-U test, which was conducted to determine whether the scores of the participants from the Exercise Addiction scale differed significantly according to the regular Physical Activity variable, there was a statistically significant difference at

$p < 0.05$  level in the total scores of the Exercise Addiction Scale, the average scores of the Extreme Focus and Emotion Change, and Development of Tolerance and Passion sub-dimensions.

**Table 5:** Comparison of exercise addiction and physical literacy awareness of physical education teachers, trainers and sports managers by team supporting variable

Subgroups	Team Supporting (Fans)	N	Range Avg.	Range Total	U	P
Exercise Addiction Scale Total	Yes	149	88.15	13135.00	-2,721	,007*
	No	37	115.03	4256.00		
Extreme Focus and Emotional Shifts	Yes	149	88.54	13192.50	-2,533	,011*
	No	37	113.47	4198.0		
Postponement of Individual-Social Needs and Conflict	Yes	149	90.51	13486.50	-1,527	,127
	No	37	105.53	3904.0		
Tolerance Development and Passion	Yes	149	89.48	13332.50	-2,055	,040*
	No	37	109.69	4058.50		
Sports Literacy Awareness Scale Total	Yes	149	92.82	13829.50	-,351	,726
	No	37	96.26	3561.50		

A statistically significant difference was found at the  $p < 0.05$  level in the total score of the participants from the Exercise Addiction scale according to the team retention

sub-variable, and Extreme Focus and Emotion Change, Tolerance Development and Passion scores.

**Table 6:** Comparison of exercise addiction and physical literacy awareness of physical education teachers, trainers and sports managers by exercise addiction level variable

Subgroups	Exercise Addiction Level	N	Range Avg.	SD	P	Significant Difference
Exercise Addiction Scale Total	1.Risk Group	55	28.00	2	134.409,000*	1-2-3
	2. Addicted	117	114.00			
	3.HighLevel Addicted	14	179.50			
Extreme Focus and Emotional Shifts	1.Risk Group	55	45.24	2	77.746,000*	1-2-3
	2. Addicted	117	107.62			
	3.HighLevel Addicted	14	165.14			
Postponement of Individual-Social Needs and Conflict	1.Risk Group	55	51.60	2	72.260,000*	1-2-3
	2. Addicted	117	103.09			
	3.HighLevel Addicted	14	177.93			
Tolerance Development and Passion	1.Risk Group	55	40.47	2	92.943,000*	1-2-3
	2. Addicted	117	109.23			
	3.HighLevel Addicted	14	170.39			
Sports Literacy Awareness Scale Total	1.Risk Group	55	81.75	2	4.272,118	-
	2. Addicted	117	97.30			
	3.HighLevel Addicted	14	107.89			

When we look at the Exercise Dependence Level variable, as a result of Kruskal Wallis, which was done to determine whether it shows a significant difference, the difference between the rank averages of the Exercise Addiction Scale

Total score and Extreme Focus - Emotion Change, Postponement of Individual-Social Needs and Conflict - Tolerance Development and Passion sub-scales were found to be statistically significant.

**Table 7:** Correlation Coefficients Between Exercise Addiction Scale and Body Literacy Awareness Scale

		1	2	3	4	5
1. Exercise Addiction Scale Total	r	1,000				
2. Sports Literacy Awareness Scale Total	r	,189**	1,000			
3.EAS - Extreme Focus and Emotional Shifts	r	,802**	,391**	1,000		
4.EAS Postponement of Individual-Social Needs and Conflict	r	,673**	-,051	,303**	1,000	
5.EAS_Tolerance Development and Passion	r	,820**	,116	,546**	,373**	1,000

Exercise Addiction Scale Total score and Physical Literacy Awareness were .189 ( $p = .010$ ) positive and very low significant correlations. A positive and low significant correlation of .391 ( $p = .000$ ) was found between Body Literacy Awareness and EAS - Extreme Focus and Emotional Shift scores.

**4. Discussion and Conclusion**

The research was carried out to determine the perceptions of

physical education and sports teachers, trainers and sports managers regarding healthy exercise habits, in terms of various variables of exercise addiction and physical literacy awareness levels.

There was no significant difference in all sub-dimensions and averages of the participants' scores from the exercise addiction scale according to the gender variable. Different from the research findings in the literature, there are studies in which different results are obtained according to gender

and at the level of exercise addiction (Arslanoğlu *et al.* 2021<sup>[2]</sup>; Katra, 2021<sup>[34]</sup>; Kaya, 2019<sup>[15]</sup>; Vardar *et al.* 2012<sup>[29]</sup>; Modolo *et al.*, 2011<sup>[20]</sup>; Yeltepe, 2005<sup>[31]</sup>). Akgöl (2019)<sup>[11]</sup>, in his study, compared the exercise addiction levels of the participants according to their gender and found that the exercise addiction of men was higher than that of women. Bavli *et al.* (2011)<sup>[4]</sup> and Hausenblas and Downs (2002)<sup>[12]</sup> found in their studies that exercise addiction was positively related to gender factors. Tekkurşun-Demir and Türkeli (2019)<sup>[26]</sup> found a significant difference in the level of exercise addiction according to the gender of the participants in their study. They stated that this difference may be due to the fact that men tend to postpone their daily basic needs (eating, drinking, etc.) and social needs more than women, cannot stop themselves from exercising for longer periods of time, and are more impatient to exercise. Cicioğlu *et al.* (2019)<sup>[6]</sup>, in their study, found that the exercise dependence levels of elite male athletes were statistically significantly higher than those of elite female athletes. Arslanoglu *et al.* (2021)<sup>[2]</sup> found that the exercise addiction scale, postponing individual-social needs, and conflict sub-dimension scores were higher in males than females according to the gender variable of the participants. In the current study, it was determined that there was no difference in all sub-dimensions in the level of exercise addiction according to the gender of the participants. It can be shown that the reason for this may be due to the effect of easy access to areas where women, men and children can freely do sports, as municipalities create more comfortable walking areas in places such as parks, gardens and beaches during the quarantine period, due to the Covid-19 epidemic, where sports awareness has increased throughout our country.

The difference between the average scores of the Exercise Addiction Scale Total and the Development of Tolerance-Passion sub-dimension, which is another finding of the study, was found to be significant. A low level of positive correlation was found between SLAS and EAS. It was concluded that the trainers experienced the highest level of exercise addiction. The reason for this is that coaches are required by both their federations and GSM to regularly attend 2-3 development seminar courses per year due to their professional lives (GSGM Trainer Training Regulation, 2019)<sup>[10]</sup>. In addition, trainers have to be successful in applied and theoretical courses in order to raise levels. According to these results, the fact that trainers have more active working conditions than physical education teachers and sports managers, and that they are more busy with doing and getting sports made them advantageous in this sense. Although the concept of sports literacy has come to the fore in recent years, there are few studies in our country and in the international arena. However, it can be said that different countries give importance to education policy on physical literacy from childhood (Ülker, 2019)<sup>[28]</sup>. Arslanoglu *et al.* (2021)<sup>[2]</sup> in their study in which they examined the exercise addiction levels of future trainers, found a significant difference in the scores of the “exercise addiction scale grand total” sub-dimensions according to the exercise duration variable. They stated that the reasons for this might be the intensity of the participants’ sportive practice classes, the fact that they have at least two years of athlete history, and their regular physical activity, and that exercise may have been transformed into a form of addiction over time. Demir and Soytürk (2021)<sup>[7]</sup> examined

the perceived sports literacy of physical education teachers, coaches and sports administrators in terms of various variables, and the coaches’ “confidence in psychomotor knowledge and skills” and “communication and lifelong sports awareness” sub-dimension scores were higher than other occupational groups and found significant.

According to the regular physical activity variable, a significant difference was found in the average scores of the participants on the exercise addiction scale, in the sub-dimensions of Extreme Focus - Sensory Change, Tolerance Development and Passion. Bavli *et al.* (2011)<sup>[4]</sup>, in their study to investigate the effect of participation in regular exercise on exercise addiction, determined that individuals in the addicted group differed statistically from other groups in terms of exercise age, weekly exercise frequency and daily exercise duration. According to these findings, it can be said that the frequency of weekly exercise is high (more than 4 days) and the age of exercise is older (more than 10 years) as factors that may allow the emergence of exercise addiction symptoms. Katra (2021)<sup>[34]</sup>; Orhan *et al.* (2019)<sup>[21]</sup>; Costa *et al.* (2013)<sup>[35]</sup>; Hausenblas and Downs, (2002)<sup>[12]</sup> stated that weekly exercise duration, frequency and exercise age of individuals participating in exercise were positively and significantly related to exercise addiction, and that with the increase in exercise participation, it could be effective in increasing exercise addiction levels. When the literature is examined, it is seen that the results support the results obtained in our study. It can be thought that the exercise frequency, duration and exercise age of individuals who exercise can be variables that affect the increase in dependence on exercise.

A significant difference was found in the total score of the participants from the Exercise Addiction scale according to the team supporting sub-variable, and in Extreme Focus and Emotion Change, Tolerance Development and Passion scores. Anyone who supports a team is considered a “fan”. Today, the concept of sport has gained a different mission and brought different elements with it. One of these elements is the phenomenon of fans (Tanyeri, 2019)<sup>[25]</sup>. It shows that the fans’ sense of identification with their team and the amount of satisfaction experienced in free times are in interaction with the concept of life satisfaction, which concerns the whole life of the individual. For this reason, it can be said that making use of free time, spending quality time in line with a common purpose and making them happy by removing the negative effects of the day’s obligatory efforts offer individuals a life with a high sense of satisfaction (Polat *et al.* 2019)<sup>[33]</sup>.

When we look at the Exercise Addiction Level variable, a significant difference was found between the Exercise Addiction Scale Total score and Extreme Focus -Change in Emotion, Postponement of Individual-Social Needs and Conflict-Development of Tolerance and Passion subscale. Accordingly, it can be said that the exercise addiction of the participants positively affects their focus, emotional change, needs, conflict and passions. Tekkurşun-Demir and Türkeli (2019)<sup>[26]</sup> stated that the average scores of exercise addiction were significantly higher in their study on the students of the faculty of sports sciences. In Katra’s study, 2021<sup>[34]</sup>, it was determined that the exercise dependence levels of individuals who exercise increased with the increase in exercise duration. Arslanoğlu *et al.* (2021)<sup>[2]</sup> found statistical significance in the scores of exercise addictions “excessive focus and emotional development”

and “exercise addiction scale grand total” sub -dimensions according to the exercise duration variable. When the literature is examined, it is seen that there are studies that support the findings of our study.

The total score of the exercise addiction scale was found to have a very low and positive correlation with physical literacy awareness. Thanks to technological developments, which have an important place in human life, information is easily accessible and it is very easy to follow the agenda. In this way, the awareness of one’s own interests and needs has increased. Individuals can benefit from many different sources on how to access this information. In addition, it can be said that physical literacy awareness will increase as the level of exercise (physical activity) that the individual participates in increases. A positive low-significant relationship was found between sports literacy awareness and exercise addiction scale - hyperfocus and mood swing scores. Tekkurşun-Demir and Türkeli (2019) [26] found in their study that according to exercise addiction score ranges, the students of the faculty of sports sciences were in the risk group and their mental endurance levels in sports were above the medium level. In the literature, there are studies in which the level of exercise addiction is observed at a high rate (Tekkurşun Demir and Türkeli, 2019 [26], Vardar *et al.* 2012 [29], Zırhlıoğlu, 2011 [32], Bavlı *et al.* 2011 [4], Hausenblas and Downs, 2002 [12]; Hausenblas and Fallon, 2002 [13].

## 5. Conclusion and Recommendations

As a result of the study, while regular physical activity, team supporting, occupational group, exercise addiction level made a difference on exercise addiction, it didn’t affect physical literacy awareness. Exercise addiction, when it reaches high levels, can be harmful to the person as in any addiction. The exercise itself should be associated with truths such as being healthy, fit, and energetic, and should be brought to a conscious point of fulfillment. Buddha can only be realized by raising awareness of physical literacy. In this regard, our suggestions are as follows: As a result of following the seven-stage developmental stage of the Canadian “sports for life” movement, starting from children and young people in our country, physical literacy can be adopted in every part of the society. The importance of physical literacy can be brought to the fore with the arrangement to be made in school curricula. In this way, since physical education teachers in particular and all sports trainers in general will take part as trainers in the process, their knowledge and awareness of physical literacy can be increased. In order to raise healthy generations and individuals whose quality of life is supported, physical literacy should come to the fore as a country policy, along with literacy in many fields.

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