



The Relationship between Exercise Addiction and Satisfaction with Life in Physical Education and Sport Department Students

Kürşat Hazar¹
Kubilay Şenbakar²

¹Physical Education and Sports Osmaniye Korkut Ata University, Turkey.

Email: kursathazar@hotmail.com

²Rectorate Unit, Fırat University, Turkey.



(✉ Corresponding Author)

Abstract

This study, conducted to analyze the relationship between exercise dependency and satisfaction with life in physical education and sport department students, is designed in a quantitative research model and a scanning pattern is used. The students of Physical Education and Sports Teaching Department, Coaching Education Department, Sports Management Department and Recreation Department in the Faculty of Sports Sciences of Fırat University voluntarily participated in the study. Personal information form, exercise addiction scale, and life satisfaction scale are used as data collection instruments. The obtained data have been evaluated in SPSS 24 Packet program and paired and multiple comparisons have been made according to the determined independent variables (Independent Groups t-Test, ANOVA), and Pearson Correlation analysis has been performed to examine the relationship between the variables. According to the findings, there is a significant difference between the participants' sports year variable and life satisfaction ($p < 0.05$). In addition, while there is a significant difference ($p < 0.05$) in favor of recreation students regarding the department variable; it is found that the difference between the participants' exercise addiction scale (EAS) and total number of days of doing sports, and years of sports and the average of academic scores are statistically significant ($p < 0.05$). As a result; it has been concluded that as the year and duration of sports increase in physical education and sports department students, exercise dependence and life satisfaction levels increase, this increase positively affects the life satisfaction of the recreation department students and negatively affects the academic achievement of students.

Keywords: Physical education, Sports, Exercise, Addiction, Student, Life satisfaction.

Citation | Kürşat Hazar; Kubilay Şenbakar (2020). The Relationship between Exercise Addiction and Satisfaction with Life in Physical Education and Sport Department Students. Asian Journal of Education and Training, 6(1): 12-17.

History:

Received: 2 October 2019

Revised: 4 November 2019

Accepted: 12 December 2019

Published: 10 January 2020

Licensed: This work is licensed under a Creative Commons

Attribution 3.0 License

Publisher: Asian Online Journal Publishing Group

Acknowledgement: Both authors contributed to the conception and design of the study.

Funding: This study received no specific financial support.

Competing Interests: The authors declare that they have no conflict of interests.

Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study was reported; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained.

Ethical: This study follows all ethical practices during writing.

Contents

1. Introduction	13
2. Method	13
3. Findings	14
4. Discussion and Result	16
References.....	16

Contribution of this paper to the literature

This study contributes to the existing literature by analyzing the relationship between exercise dependency and satisfaction with life in physical education and sport department students.

1. Introduction

Exercise is all of the physical activities that are repeated at regular intervals at a certain severity aiming to maintain and improve one or more factors (endurance, flexibility, muscular fitness) of the individual's physical fitness (Yildirim *et al.*, 2017). Individuals can be more productive and effective in their work lives by exercising. Also, exercise is of great importance especially in the treatment of inactivity and many diseases associated with it, and this importance is increasing day by day (Koruç and Nihan, 2009; Koçyiğit *et al.*, 2011). It is also known that long-term exercises have positive effects on body composition (Hazar and Akyol, 2019). Although it is a worldwide fact that exercise is healthy behavior, it can sometimes turn into a harmful activity that has the potential to become addictive for a small minority (Szabo and Griffiths, 2007). In this context, exercise has positive effects as well as negative ones. The most common concept used to express the negative consequences of exercise is the concept of exercise addiction. This concept was first described and used by Ogden Veale in 1987. Veale reported that the concept of exercise addiction was initially started for recreational purposes but later turned into an uncontrollable impulse and resulted in uncontrollable exercise addiction behavior. The dependency criterion, which was limited to alcohol and drugs in the past, has gained a different dimension today. In recent scientific studies, it has been concluded that some behaviors such as gambling, exercise, eating, sleeping, sex, and digital games are addictive (Fidan *et al.*, 2016). Aidman and Woollard (2003); Gürbüz and Aşçı (2006) defined the best and most obvious symptom of exercise dependence as the need at increasing dosages. In addition to this symptom, the inability to spend time with family and friends due to the exercise of the people around them can be considered as rearranging one's daily life according to the exercise program (Adams and Kirkby, 2002). According to some studies conducted abroad, personality traits, physiological factors, type of exercise, gender and year of participation in exercise dependence are related to the formation of exercise addiction (Bavlı *et al.*, 2015).

Life satisfaction is a basic element that people should have to be happy in their lives. At the same time, life satisfaction is an issue that has become the focus of attention for hundreds of years. "Life satisfaction includes a cognitive component of subjective well-being and cognitive judgments about one's life (Diener, 1984)". In the psychology literature, subjective well-being is expressed as happiness (Diener, 2000). Subjective well-being consists of separate components, positive and negative emotions, and life satisfaction. Life satisfaction constitutes the dimension of subjective well-being (Diener *et al.*, 1985). People's life satisfaction can be affected by many different things. These sometimes can be happiness from daily life, meaning attributed to life, harmony in achieving one's goals, positive individual identity, physical well-being of the individual, security, economic and social relations (Schermelleh-Engel *et al.*, 2003; Yılmaz and Aslan, 2013). The main factors affecting life satisfaction are being open-minded, democracy, freedom, being active, keeping their own life under control, being able to be physically and physically sound, doing sports, living in a reliable region, and individual positive identity are the prominent ones, respectively (Ozdevecioğlu and Aktaş, 2007).

For this reason, in this study conducted to examine the relationship between exercise addiction levels and life satisfaction of university students studying in Physical Education and Sports departments; It is seen as important to determine whether there is a relationship between exercise addiction levels and life satisfaction of the students and to take necessary precautions.

2. Method

In this part of the study, information about the working group and the analysis of the data are included.

2.1. Research Model

The research was designed in a quantitative research model and a scanning design was used. Scanning research is a type of research aiming to describe a situation in the past or present, where the characteristics of the participants are determined and related to a subject or event (Karasar, 2004).

2.2. Research Population

The population of the research consists of students of Physical Education and Sports Teaching Department, Coaching Education Department, Sports Management Department and Recreation Department in the Faculty of Sports Sciences of Firat University in 2019-2020 academic year.

2.3. Sample

In this research "typical case" method, one of the purposive sampling methods was used. Typical sampling method requires the identification of a situation typical of a large number of situations in the population related to the research problem and the collection of information on this sample (Sönmez and Ilgün, 2018). In this context, the sample of the study consisted of 79 women and 186 men, a total of 265.

2.4. Data Collection Tools

Personal Information Form: As a result of the literature review conducted by the personal information form developed by the researchers, variables such as gender, branch, sports history-sports year, number of days of sports performed weekly, department of study and academic grade point average were included.

Exercise Addiction Scale was developed by Demir *et al.* (2017) to measure exercise addiction. This scale, which examines exercise dependence in three dimensions, consists of a total of 17 items and 3 dimensions. The first dimension is *Extreme Focus and Emotional Change* (items: 1, 2, 3, 4, 5, 6, 7). The Second Dimension is *of Postponement and Conflict of Individual-Social Needs* (articles: 8, 9, 10, 11, 12, 13). The third one is *Tolerance Development and*

Passion (items: 14, 15, 16, 17). The scale was developed as a 5-point Likert type and individuals were asked to evaluate how appropriate the expressions were to their characters from "I strongly disagree" to "I totally agree".

Life Satisfaction Scale: It was developed by Diener *et al.* (1985) and adapted to Turkish by Dağlı and Baysal in 2016. The scale consists of 5 items under a single factor structure. The scale was developed as a 5-point Likert type and individuals were asked to evaluate how appropriate the expressions were to their characters from "I strongly disagree" to "I totally agree".

2.5. Data Analysis

The obtained data were evaluated in SPSS 24 Packet program and paired and multiple comparisons were made according to the determined independent variables (Independent Groups' t-Test, ANOVA), and Pearson Correlation analysis was performed to examine the relationship between the variables.

3. Findings

Table-1. T-test analysis on participants' scores from exercise addiction scale (EAS) and life satisfaction scale according to gender variable.

Scale scores	Gender	N	Mean	Std. D.	t	p
EAS total score	Female	79	58,26	12,99	,302	,76
	Male	186	57,72	13,46		
EAS 1. Sub-Factor	Female	79	27,59	7,87	1,639	,10
	Male	186	26,06	6,49		
EAS 2. Sub-Factor	Female	79	17,44	5,07	-1,293	,19
	Male	186	18,54	6,79		
EAS 3. Sub-Factor	Female	79	9,81	2,92	,165	,86
	Male	186	9,74	3,13		
Satisfaction with life total score	Female	79	15,74	4,06	-,118	,90
	Male	186	15,81	4,58		

Note: *p > 0,05.

When Table 1 is examined, it is seen that there is no significant difference between scale total score averages and sub-factor score averages of the participants.

Table-2. T-test analysis on participants' scores from exercise addiction scale (EAS) and life satisfaction scale according to branch variable.

Scale scores	Branch	N	Mean	Std. D.	t	p
EAS total score	Individual	147	58,78	12,83	1,233	,21
	Team	118	56,76	13,84		
EAS 1. Sub-Factor	Individual	147	27,26	5,41	1,946	,06
	Team	118	25,60	8,42		
EAS 2. Sub-Factor	Individual	147	18,29	6,96	,221	,82
	Team	118	18,11	5,50		
EAS 3. Sub-Factor	Individual	147	9,80	2,94	,239	,81
	Team	118	9,71	3,23		
Satisfaction with life total score	Individual	147	15,68	4,63	-,475	,63
	Team	118	15,94	4,17		

Note: *p<0,05.

When Table 2 is examined, it is understood that there is no significant difference between scale total score averages and sub-factors score averages of the participants.

Table-3. T-test analysis on participants' scores from exercise addiction scale (EAS) and life satisfaction scale according to sports year variable.

Scale scores	Year	N	Average	Std. D.	t	p
EAS total score	1-4years	113	55,00	14,21	-3,084	,00
	4+	152	60,02	12,20		
EAS 1. Sub-Factor	1-4years	113	25,63	8,37	-1,799	,07
	4+	152	27,18	5,61		
EAS 2. Sub-Factor	1-4years	113	16,93	5,17	-2,864	,00
	4+	152	19,16	6,95		
EAS 3. Sub-Factor	1-4years	113	9,25	3,20	-2,330	,02
	4+	152	10,13	2,92		
Satisfaction with life total score	1-4years	113	15,44	4,56	-1,121	,02
	4+	152	16,05	4,32		

Note: *p<0,05.

When Table 3 is examined, it is seen that there is a statistically significant difference between the total scale average scores and the sub-factor average scores of the participants, and this difference is in favor of the participants who have more than 4 years of sports. On the other hand, it is seen that the average subscale score of the second sub-factor is not statistically significant.

Table-4. T-test analysis on participants' scores from exercise addiction scale (EAS) and life satisfaction scale according to number of the days of sports performed weekly variable.

Scale scores	Day in a week	N	Mean	Std. D.	t	p
EAS total score	1-3days	157	56,29	13,84	-2,372	,01
	3+	108	60,20	12,17		
EAS 1. Sub-Factor	1-3days	108	15,95	4,30	-2,643	,00
	3+	157	25,59	7,73		
EAS 2. Sub-Factor	1-3days	108	27,87	5,37	-1,358	,17
	3+	157	17,77	5,54		
EAS 3. Sub-Factor	1-3days	108	18,85	7,32	-1,127	,26
	3+	157	9,58	3,01		
Satisfaction with life total score	1-3days	157	15,68	4,52	-,479	,63
	3+	108	15,95	4,30		

Note: *p<0,05.

When Table 4 is examined, it is seen that the average total score of the participants and the second subscale scores of the participants are in favor of the participants who have played more than 3 days a week and this difference is statistically significant. In the other score types, the difference is not seen as statistically significant.

Table-5. ANOVA analysis on participants' scores from exercise addiction scale (EAS) on department variable.

Scale scores	Departments	N	Mean	Std. D.	F	p	Significant difference
EAS total score	1-Teaching	56	56,57	12,28	3,356	,01	3-4*
	2-Coaching	46	57,95	13,98			
	3-Sports Management	94	55,62	12,29			
	4-Recreation	69	61,98	14,27			
EAS 1. Sub-Factor	1- Teaching	56	26,85	5,54	1,566	,19	-
	2- Coaching	46	25,43	7,87			
	3- Sports Management	94	25,87	6,10			
EAS 2. Sub-Factor	1- Teaching	56	16,94	5,79	3,303	,02	1-4*
	2- Coaching	46	19,34	5,04			
	3-Sports Management	94	17,29	5,31			
EAS 3. Sub-Factor	1- Teaching	56	9,48	3,63	3,322	,02	3-4*
	2- Coaching	46	10,02	2,74			
	3- Sports Management	94	9,17	2,99			
	4- Recreation	69	10,62	2,70			

Note: The groups that differ in favor are indicated with (*). *p<0,05.

When the Table 5 is analyzed, it is seen that the EAS total score of the participants, EAS 2. sub-factor total scores of the participants, and EAS 3. sub-factor total scores of the participants are found to be in favor of the participants studying in the Recreation Department. It is seen that there is no significant difference in EAS 1. Sub-factor scores.

Table-6. ANOVA analysis on participants' scores from life satisfaction scale on department variable.

Scale scores	Departments	N	Avg.	Std. D.	F	p	Significant difference
Life satisfaction total score	1-Teaching	56	15,76	4,59	4,030	,00	3-4*
	2-Coaching	46	15,80	3,40			
	3-Sports Management	94	14,78	4,54			
	4-Recreation	69	17,18	4,44			

Note: *p<0,05.

When Table 6 is analyzed, it is understood that participants' "Life Satisfaction Scale" total scores show the difference and this difference is among the students of the "Sports Management and Recreation Department", and it is statistically significant in favor of "Recreation Department".

Table-7. Correlation analysis of participants' exercise addiction, life satisfaction, number of weekly sports days, sports year and academic grades.

	Variables	EAS total	Life satisfaction total	Day	Year	Grade average
EAS total	Pearson correlation	1	,103	,163**	,145*	-,325**
	Sig. (2-tailed)		,09	,00	,01	,00
	N	265	265	265	265	265

Note: **. Correlation is significant at the 0.01.

*. Correlation is significant at the 0.05.

When Table 7 is examined, it is seen that there is a positive relationship between the EAS total score of the participants and the weekly Sports Days and Sports Year History, and this relationship is found to be statistically significant. It is seen that the relationship between the EAS total scores of the participants and the "Academic Grades" is seen to be negative and this relationship is found to be statistically significant. The relationship between the EAS total scores of the participants and the "Satisfaction with Life Total Scores" is not statistically significant.

4. Discussion and Result

In line with the findings of this study, which was conducted to investigate the relationship between exercise addiction levels and life satisfaction of university students studying in Physical Education and Sports departments; it was stated that there was no statistically significant difference between scale total scores that the participants achieved from the EAS and life satisfaction and sub-factor score averages on participants' gender and branch variables. Vardar (2012) conducted similar studies and reported that there was no significant difference in exercise addiction levels in terms of gender. Yildirim *et al.* (2017) concluded that exercise addiction level did not differ according to gender. In another study supporting this situation, it was reported that both men and women carry the risk of exercise addiction and no statistically significant difference was found between the genders (Gun and Agirbas, 2019). The findings obtained from this study are in parallel with the literature findings.

It was seen that there was a statistically significant difference between the average scores of the EAS total score and the sub-factor scores of the participants and this difference were in favor of the participants who had more than 4 years of sports. The average subscale score was not found to be statistically significant. Similarly, in the score averages that they get from the number of the days performed weekly and EAS, and life satisfaction scales, EAS total score and EAS 2. Sub-factor averages were in favor of the people who exercise more than 3 days a week, and this difference was seen to be statistically different. In the other score types, the difference was not statistically significant. When the age of exercise increases in individuals, exercise patterns and habits formed over time can turn into addiction (Sadeq, 2018). In a study on kickbox, taekwondo and Muaythai athletes (Namli *et al.*, 2018) it was concluded that regular exercise is effective for exercise addiction. In a similar study (Costa *et al.*, 2012) it was concluded that the frequency, duration, and sports year of the exercise may be effective in the emergence of exercise addiction. Exercise dependence inevitably occurs as a result of the inability to control the frequency and duration of exercise (Masters and Lambert, 1989). The highest score that can be obtained from the EAS scale is 85. The average score of the scale is 51. The average total score of the participants included in the study was found to be as 55.00 for those with 1-4 years of sports year and 66.02 for those with +4 years of the sports year. In the literature, there are studies in which high EAS total scores are found (Hausenblas and Downs, 2002; Bavli *et al.*, 2011; Vardar *et al.*, 2012). In this case, it is understood that as the exercise year and duration of the participants' increases, the scores of EAS and life satisfaction increased significantly in favor of the participants.

It is seen that EAS total score, the EAS 2. sub-factor total score, and EAS 3. Sub-factor total score averages of the participants according to department variable, it is seen that there is a difference in favor of the students in the "Recreation Department" and this difference is statistically significant. Likewise, the total scores of the participants on the life satisfaction scale according to the department variable were found to be different and this difference was statistically significant in favor of the students of the Department of Recreation among the students of the Department of Sports Management and Recreation, There are no studies on exercise addiction and life satisfaction among recreation students in the literature. Therefore, the fact that the curriculum of the students studying in the recreation department is more theoretical than the other departments and that they do not devote enough time to exercise can be effective in the orientation of the students to exercise, and this situation can be said to have a positive effect on the perception of life satisfaction in the students.

In the correlation analysis of the participants 'exercise addiction, life satisfaction, number of sports days per week, sports year and academic grade average, it was found that there was a positive correlation between participants' EAS total score and "Number of Weekly Sports Day and Sports Year History", and this relationship was statistically significant. It was seen that the relationship between the EAS total scores of the participants and the "Academic Grade Averages" was negative and this relationship was statistically significant. It was stated that the relationship between the participants' EAS total scores and the "Satisfaction with Life Total Scores" was not statistically significant. In the definition of negative exercise addiction, Morgan defined the need to exercise to cope with daily events and to believe that he/she could not live without exercise every day, to continue exercise regardless of quitting symptoms (occupational, social, health, safety problems) when she was deprived of exercise (Allegre *et al.*, 2006). In exercise addiction, despite the over-willingness to physical exercise and excessive effects of the exercise; for example, exercising even in the event of disability and feeling bad if this situation is prevented, the person may hinder his other duties and responsibilities. The findings obtained from this study indicate that as the attitude towards exercise is dominant in students' tendency and they do not spend enough time on academic activities.

As a result; It has been concluded that exercise addiction and life satisfaction levels increase as the year and duration of sports increase in physical education and sports department students, and this increase affects the life satisfaction of the recreation department students positively and their academic success in a negative way.

References

- Adams, J. and R.J. Kirkby, 2002. Excessive exercise as an addiction: A review. *Addiction Research & Theory*, 10(5): 415-437. Available at: <https://doi.org/10.1080/1606635021000032366>.
- Aidman, E.V. and S. Woollard, 2003. The influence of self-reported exercise addiction on acute emotional and physiological responses to brief exercise deprivation. *Psychology of Sport and Exercise*, 4(3): 225-236. Available at: [https://doi.org/10.1016/s1469-0292\(02\)00003-1](https://doi.org/10.1016/s1469-0292(02)00003-1).
- Allegre, B., M. Souville, P. Therme and M. Griffiths, 2006. Definitions and measures of exercise dependence. *Addiction Research & Theory*, 14(6): 631-646. Available at: <https://doi.org/10.1080/16066350600903302>.
- Bavlı, O., S. Işık, O. Canpolat, A. Aksoy, B. Günar, B., K. Gültekin, H. Katra, M. Uzun and M. Ödemiş, 2015. Original article 120. *International Journal of Sport, Exercise and Training Science of Exercise Addiction Symptoms in Dancers*, 1(2): 120-124.
- Bavlı, Ö., M. Kozanoğlu and A. Doğanay, 2011. The effect of regular exercise participation on exercise addiction. *Selçuk University Journal of Physical Education and Sports Sciences*, 13(2): 150-153.
- Costa, S., F. Cuzzocrea, H.A. Hausenblas, R. Larcán and P. Oliva, 2012. Psychometric examination and factorial validity of the exercise dependence scale-revised in Italian exercisers. *Journal of Behavioral Addictions*, 1(4): 186-190. Available at: <https://doi.org/10.1556/jba.1.2012.009>.
- Demir, G.T., A. Türkeli, H.İ. Cicioğlu, Z. Hazar and S. Namli, 2017. Examination of the empathy tendency levels of pedagogical formation students in physical education and sports. *Acta Medica Marisiensis*, 63.
- Diener, E., 1984. Subjective well-being. *Psychological Bulletin*, 95(3): 542-575.

- Diener, E., 2000. Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist*, 55(1): 34-43. Available at: <https://doi.org/10.1037//0003-066x.55.1.34>.
- Diener, E., R. Emmons, R.J. Larsen and S. Griffin, 1985. The satisfaction with life scale. *Journal of Personality Assessment*, 49(1): 71-75.
- Fidan, E., J. Lewis, A.E. Kline, R.H. Garman, H. Alexander, J.P. Cheng and V.E. Kagan, 2016. Repetitive mild traumatic brain injury in the developing brain: Effects on long-term functional outcome and neuropathology. *Journal of Neurotrauma*, 33(7): 641-651. Available at: <https://doi.org/10.1089/neu.2015.3958>.
- Gun, A. and O. Agirbas, 2019. The relationship between exercise addiction, physical activity level and body mass index of the students who re studying at physical education and sports college. *Asian Journal of Education and Training*, 5(1): 50-55.
- Gürbüz, B.F. and F.H. Aşçı, 2006. Evaluation of psychometric properties of exercise addiction Scale-21 for exercise participants Gazi. *Journal of Physical Education and Sport Sciences (Gazi Besbd)*, 11(2): 3 – 10.
- Hausenblas, H.A. and D. Downs, 2002. Relationship among sex, imagery, and exercise dependence symptoms. *Psychology of Addictive Behaviors*, 16(2): 169-172. Available at: <https://doi.org/10.1037/0893-164x.16.2.169>.
- Hazar, K. and H. Akyol, 2019. The effect of one year training period on some body compositions and Vo2 max values in Elite Skiers. *Journal of Physical Education and Sport Sciences*, 21(3): 34-44.
- Karasar, S., 2004. New communication technologies in education-internet and virtual higher education. *The Turkish Online Journal of Educational Technology*, 3(4).
- Koçyiğit, Y., M.C. Aksak, Y. Atamer and A. Aktaş, 2011. Acute exercise and effects of vitamin C on liver enzymes and plasma lipid levels in footballers and basketball players. *Journal of Clinical and Experimental Investigations*, 2(1): 62-68. Available at: <https://doi.org/10.5799/ahinjs.01.2011.01.0034>.
- Koruç, Z. and N. Nihan, 2009. The factors following exercise behavior: Exercise commitment and exercise addiction. *Journal of Sports Medicine*, 44(S): 105-113.
- Masters, K.S. and M. Lambert, 1989. The relations between cognitive coping strategies, reasons for running, injury, and performance of marathon runners. *Journal of Sport and Exercise Psychology*, 11(2): 161-170. Available at: <https://doi.org/10.1123/jsep.11.2.161>.
- Namli, S., G.T. Demir and H.I. Cicioğlu, 2018. Academic focus levels of faculty of sport sciences students. *Journal of Physical Education and Sport Sciences*, 20(4): 43-51.
- Ozdevecioğlu, M. and A. Aktaş, 2007. The effect of career commitment, professional commitment and organizational commitment on life satisfaction: The role of business-family conflict. *Erciyes University Faculty of Economics and Administrative Sciences Journal*, 28(1): 1-20.
- Sadeq, B., 2018. Investigation of the exercise dependence of athletes' Kickboxing, Taekwondo and Muay Tha. Firat University, Institute of Health Sciences Department of Physical Education and Sports Master Thesis.
- Schermelleh-Engel, K., H. Moosbrugger and H. Müller, 2003. Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online*, 8(2): 23-74.
- Sönmez, S. and G. İlgin, 2018. Investigation of qualitative research methods in the context of health services. *Balikesir University Journal of the Institute of Social Sciences*, 21(40): 375-400.
- Szabo, A. and M.D. Griffiths, 2007. Exercise addiction in British sport science students. *International Journal of Mental Health and Addiction*, 5(1): 25-28. Available at: <https://doi.org/10.1007/s11469-006-9050-8>.
- Vardar, E., 2012. Exercise addiction. *Archive Review*, 21(3): 163-173.
- Vardar, E., S.A. Vardar, İ. Toksöz and N. Süt, 2012. Evaluation of exercise dependence and psychopathological features. *Düşünen Adam The Journal of Psychiatry and Neurological Sciences*, 25: 51-57. Available at: <https://doi.org/10.5350/dajpn2012250106>.
- Yildirim, I., Y. Yildirim, Y. Ersöz, I. Özkan, S. Saraçlı, Ş. Karagöz and R. Yağmur, 2017. Exercise addiction, eating attitudes and behaviors. *CBU Journal of Physical Education and Sports Sciences*, 12(1): 43-54.
- Yilmaz, E. and H. Aslan, 2013. Investigating the relationship between teachers' loneliness and life satisfaction at work [investigation of teachers' loneliness at work and life satisfaction]. *Pegem Journal of Education and Training*, 3(3): 59-69. Available at: <https://doi.org/10.14527/c3s3m6>.