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The Relationship Between Physical Activity Levels of the School of Physical Education and Sports Students and Their Life Satisfaction

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Abstract

This study aims to investigate the correlations between the physical activity levels of students who study sports sciences and their life satisfaction levels according to a number of variables. The study group was composed of 212 students—100 of whom were female and 112 of whom were male—who attended Physical Education and Sports School of Adıyaman University in 2020-2021 academic year.

The participants were given the international physical activity questionnaire (Craig et al., 2003) and satisfaction with life scale (SWLS) (Diener & Griffin, 1985) along with personal information form (IPAQ-SF) online.

As a result, no correlations were found between physical education and sports school students' levels of physical activities and their life satisfaction. Accordingly, the BMI average for the female students ($\bar{x}$ = 20.31) was found to be significantly lower than the average for the male students ($\bar{x}$ = 23.68). The inactive students' average ($\bar{x}$ = 21.61) and the average of the students who were very active ($\bar{x}$ = 21.37) were significantly higher ($p < 0.01$). On the other hand, no significant differences were found in the participants' levels of physical activity or in their life satisfaction levels according to types of sports and gender ($p > 0.05$).

In conclusion, it may be stated that physical activities do not affect university students' life satisfaction but that they eliminate their problems of overweight and that those activities reduce the average for BMI in positive ways and thus resulted in healthier individuals.

Keywords: Physical activity, Life satisfaction, Sport sciences

1. Introduction

The benefits of physical activities have been accepted for a long time, and doctors and philosophers such as Platon and Hipocrate believe in the existence of positive correlations between physically active life and health (McKinney et al., 2016).

According to World health organization it´s one of the main causes of death worldwide and estimated number of 3.2 million deaths per year can be linked to inactivity. By reducing behavioral risk factors such as inactivity, the probability of diseases such as stroke, type 2 diabetes and cardiac diseases could be decreased by 80%, it is also estimated that the risk of cancer could be reduced by one third by increasing physical activity among mankind (Lee et al., 2012). There is a general belief that physical activities can diminish and even prevent symptoms of depression. Therefore, several researchers have investigated the correlations between exercise and depression (Craft & Perna, 2004; Stanton & Reaburn, 2014; Wolff et al., 2011). Depression is a serious problem which affects individuals and all the society and it is one of the most common mental illnesses in the world (Ferrari et al., 2013). It is estimated that it influences 350 million people across the world, and it can cause deaths in the worst cases. Moreover, 800.000 people commit suicide every year due to depression (WHO Depression, n.d.).

Besides, physical activities are also often recommended as a strategy to manage mental pressure and health improvement programmes are often used as a solution (Nyugn, Unger, Hamilton, & Spruijt, 2006). World Health Organisation (WHO) (2010) recommends physical activities for primary protection from non-infectious diseases. According to the document of global recommendations of physical activities for health, WHO (2010) emphasises that adults aged 18-64 should do physical activities of medium intensity at least for 150 minutes a week.

Multiple researches have shown that physical activity can reduce symptoms of mental disorders and improve life satisfaction among individuals (Lees & Hopkins, 2013; Stanton, Happell, & Reaburn, 2014; Ströhle, 2009).

One of the ways for students to cope with stress is to do physical activities. There is a great deal of evidence that regular physical exercise has positive impacts on health and on life satisfaction (Kim & McKenzie, 2014; Sato, 2017; Standage et al., 2012).

Maher et al. (2014) contend that there are ties between physical activities and inactive lifestyle in the case of university students (aged between 18 and 25). There are direct correlations between falls in students' physical activities and reduction in their life satisfaction and in their personal health (Zullig & White, 2011).

Gerber et al. (2014) used objective data related to physical activities. Thus, they proved that active physical activities were an important factor in stress management, in pain perception

and in the quality of sleep (Gerber et al., 2014).

A serious of secondary analyses has shown that physical exercise has direct effects on general life satisfaction (for example, Lehnert et al., 2012).

In addition to classes, university students also have social and sportive environments through which they can spend their time effectively and in which they can do physical activities that raise their life satisfaction. Therefore, this study aims to associate the life satisfaction of students who attend the faculty of sports sciences with their physical activities. Thus, review of the literature in Turkey and in other countries showed that studies concerning the correlations between levels of physical activity and life satisfaction were available.

2. Material and Method

2.1 Research Model

This study, which analyses the physical activity levels and life satisfaction of students who study sports sciences, is a descriptive study and it was performed in the survey model. The individuals, subjects, events or objects considered are described and reported as they are in a survey model (Arlı & Nazik, 2001). Such a model makes efforts to describe the tendencies, attitudes or views of the sample by transforming them into quantitative or numerical data (Fowler, 2008).

2.2 The Study Group

Totally 212 students—112 of whom were male and 100 of whom were female—who attended the physical education and sports school of Adıyaman University in 2019-2020 academic year were included in the study.

Table 1. The defining characteristics of the participants

Gender	**n**	**%**	**Branches of sport**	**n**	**%**
Female	100	47.2	Individual sport	92	43.4
Male	112	52.8	Team sport	120	56.6
Levels of PA	**N**	**%**	**Body-mass index (BMI)**	**N**	**%**
Low PA	28	13.2	Weak	22	10.4
Moderate PA	118	55.7	Normal weight	150	70.8
High PA	66	31.1	Overweight (fat)	40	18.9
Total	212	100	Total	212	100

Note. PA; Physical Activity.

Accordingly, 47.2% of the participants were female whereas 52.8% of them were male. most of them were normal weight (70.8%) and were physically active participants (55.7%).

2.3 Data Collection Tools

Physical activity, and life satisfaction were assessed by International Physical Activity questionnaire short form (IPAQ-SF) (Craig et al, 2003), Satisfaction With Life Scale (SWLS) (Diener & Griffin, 1985) respectively.

2.3.1 The Physical Activity Scale

Each participant's level of physical activity (PA) was measured using the International Physical Activity Questionnaire (IPAQ—short form). Participants reported the frequency (days per week) and duration (hours) of walking, moderate and vigorous physical activity that they engaged in during the week prior to survey. Vigorous physical activity, defined by the questionnaire, referred to intense exercise that resulted in very rapid breathing and an elevated heart rate (*e.g.*, intense weight lifting, aerobics, running, and cycling). Moderate physical activity was defined as less intense exercise that slightly heightened breathing and heart rate (*e.g.*, less exertive cycling, fast walking, and light weight lifting). Participants were asked only to report physical activity that exceeded ten minutes in duration. Physical activity data were converted to Metabolic Equivalent of Task units (MET-minutes/week) by multiplying the number of exercise minutes per day by the number of exercise days per week by the MET coefficient of exercise intensity (vigorous PA = 8 MET, moderate PA = 4 MET, walking PA = 3.3 MET). The MET coefficient of exercise intensity corresponds to an individual's oxygen consumption during physical activity relativeto oxygen consumption at rest (3.5 ml O2 per kg of body weight per minute) (Craig et al., 2003). Respondents were then classified into groups (high, moderate, and low physical activity) based on the following criteria:

(1) High Physical Activity: three or more days of vigorous physical exercise, including at least 1,500 MET-minutes/week, or seven or more days of any combination of vigorous exercise, moderate exercise, and walking that exceeded 3,000 MET-minutes/week.

(2) Moderate Physical Activity: three or more days of vigorous physical exercise (at least 20 minutes per day), or five or more days of moderate exercise or walking (at least 30 minutes per day), or five or more days of a combination of vigorous exercise, moderate exercise, and walking that exceeded 600 MET-minutes/week.

(3) Low Physical Activity: Little physical activity that resulted in a failure to comply with the conditions of moderate or high physical activity classifications (less than 600 MET-minutes/week)

2.3.2 Satisfaction with Life Scale

The "Satisfaction with Life Scale", which was developed by Diener et al. (1985) and which was adapted into Turkish by Dağlı and Baysal (2016), was given online. The scale was a one-factor scale with 5 items. It was a 5-pointed Likert type scale and intended to determine individuals' perceptions of the quality of their life conditions and the extent to which they

were satisfied with life.

2.4 Data Analysis

The SPSS 26.0 package program was used in the analysis of the data and the frequency, arithmetic average, standard deviation, and percentage values of the collected data were calculated.

The parametric oneway anova test and a independent-samples t test was used to assess the significance of differences between the variables, and the correlations between the variables were calculated using pearsons's rank correlation coefficient. Effects for which the probability was lower than the level of statistical significance of $p < 0.05$ and $p < 0.01$ were assumed as significant.

3. Results

Table 2. Demographic characteristics, physical characteristics and measured variables of the participants

Measures	**Female (n = 100)**	**Male (n = 112)**	**t**	**p**
	M(SD)	**M(SD)**		
Body height (m)	1.67(.055)	1.78(.05)	-15.261	0.000*
Body weight (kg)	56.62(7.68)	75.41(9.6)	-15.615	0.000*
BMI (kg/m^2)	20.31(2.25)	23.68(2.43)	-10.402	0.000*
Age (years)	21.10(1.67)	22.70(2.8)	-4.919	0.000*
Grade point average	2.97(.34)	2.74(.52)	3.634	0.000*
PA MET-min/week	2684.24(1502.94)	2304.41(1429.54)	1.885	0.061
Life satisfaction	2.96(1.11)	3.02(.91)	-.446	0.656

Note. BMI: body mass index; MET: metabolic equivalent task. * Significant difference between females and males, $p < 0.01$; p: independent sample T test.

According to Table 2, statistically significant differences were found between the participants' grade point averages, age, body height, body weight and BMI averages according to gender ($p = 0.000 < 0.01$). Thus, the female participants ($\bar{x} = 2.97$) had higher grade point average than the male ones ($\bar{x} = 2.74$). In addition to that, the male students' averages for age ($\bar{x} = 22.7$), height ($\bar{x} = 1.78$), weight ($\bar{x} = 75.41$) and BMI ($\bar{x} = 56.62$) were also found to be higher than the female participants' averages for age ($\bar{x} = 21.1$), height ($\bar{x} = 1.67$), weight ($\bar{x} = 56.62$), and BMI ($\bar{x} = 20.31$). on the other hand, no significant differences were found between the participants' life satisfaction and PA MET-min/week score averages

($p > 0.01$). Yet, the female students ($\bar{x} = 2684.24$) had higher PA MET-min/week averages than the male students ($\bar{x} = 2304.41$).

Table 3. Difference of life satisfaction/body mass index and physical activity MET-min-week by sport type by independent t-test

Measures	Individual sport (n = 92)	Team sport (n = 120)	**t**	**p**
	M(SD)	**M(SD)**		
Life satisfaction	3.03(.93)	2.96(1.079	.473	.637
BMI	22.23(3.20)	21.98(2.62)	.617	.538
PA MET-min/week	2399.09(1358.81)	2548.35(1558.13)	-.730	.466

Note. * $p < 0.01$; p: independent sample t test.

It is clear from Table 3 that there are no significant differences between the participants' life satisfaction, BMI and pa met-min/week score averages ($p > 0.01$).

Table 4. Difference of life satisfaction/body mass index and physical activity MET-min-week by age classification by independent t-test

Measures	Age group (years) 18-21 (n = 114)	Age group (years) ≥ 22 (n = 95)	**t**	**p**
	M(SD)	**M(SD)**		
Life satisfaction	2.88(1.01)	3.11(.10)	-1.637	.103
BMI	21.13(2.47)	23.21(2.94)	-5.595	.000*
PA MET-min/week	2656.18(1398.43)	2282.80(1539.03)	1.850	.066

Note. * $p < 0.01$; p: independent sample t test.

According to Table 4, there are no statistically significant differences between the students' life satisfaction and pa met-min/week score averages according to age ($p > 0.01$). However, significant differences were found between their BMI averages according to age ($t = -5.595$; $p = .000 < 0.01$). Thus, the students who were 22 years old or who were older ($\bar{x} = 23.21$) had higher BMI averages than those who were aged between 18 and 21.

Table 5. Correlations between the amount of physical activity, life satisfaction, age and BMI by bivariate correlation analysis

Variables (n = 212)		Life Satisfaction	MET-min/week	BMI
Life Satisfaction	r	1		
	p			
PA MET-min/week	r	.030	1	
	p	.668		
BMI	r	.001	-.373	1
	p	.986	**.000****	
Age	r	.176	-.149	.471
	p	**.010***	**.030***	**.000****

Note. *: Correlation is significant at the 0.05 level (2-tailed); **: Correlation is significant at the 0.01 level (2-tailed).

According to the results of Pearson's correlation test which was done to determine the correlations between the participants' life satisfaction, PA, BMI, grade point averages and age; negative and medium correlations were found between PA MET-min/week and body mass index averages ($r = .-373$ $p = .000 < 0.01$). The students' body mass indices fell in parallel to the rise in PA met-min/week values.

Positive and weak correlations were found between the students' life satisfaction scores ($r = .176$ $p = .010 < 0.01$) according to age. Accordingly, students' satisfaction with life increased as their age rose. Positive and medium correlations were found between the participants' BMI scores ($r = .471$ $p = .000 < 0.01$) according to age. Thus, their body weight increased as their age increased. On the other hand, no significant correlations were found between their life satisfaction and PA met-mi/week ($p > 0.01$).

Table 6. A comparison of the participants' life satisfaction averages and BMI by their Levels of Physical Activity

Variables	Levels of Physical Activity	N	M(SD)	F	P	Tukey
Life satisfaction	Low PA	28	2.77(1.052)	.995	.372	
	Moderate PA	118	2.98(.98)			
	High PA	66	3.09(1.04)			
BMI	Low PA	28	25.79(2.31)	35.514	.000*	1-2 1-3
	Moderate PA	118	21.61(2.64)			
	High PA	66	21.37(2.32)			

Note. * $p < 0.01$ P:one-way variance test was used for the differences between groups, post hoc Tukey test was used for intragroup comparisons.

A close examination of the Table demonstrates that there are no statistically significant differences between the participants' life satisfaction according to their levels of physical activities [(2-209) = .995; p = .372 > .05].

Significant differences were found between their life satisfaction according to the levels of their physical activities [(2-209) = 35,514; p = .000 < .01]. As a result of the post hoc Tukey analysis-which was done so as to find the source of differences, it was found that Low PA students' BMI average ($\bar{x}$ = 25.79) was higher than Moderate PA students' ($\bar{x}$ = 21.61) and High PA students' BMI average ($\bar{x}$ = 21.37).

4. Discussion and Conclusion

People seek life satisfaction in various activity areas, including sports. Sporting activities have a great influence on the mental and physical sense of satisfaction, enable comprehensive development, shape personality, healthy lifestyle habits, develop the will to fight, perseverance, and—at the same time—teach respect for other people (Willwéber, 2016). Sport has a large social impact, but its effects on the individual are also due to one's choice of a particular discipline. Some athletes consider sport to be the meaning of their life and thus their satisfaction with life depends on the course of their own career (Witkowski et al., 2017).

In the light of the information presented so far, this study aims to determine the effects of sports sciences faculty students' physical activity levels on their life satisfaction.

According to the data coming from Turkish Statistical Institute (TSI, 2021), women in Turkey are 1.63 m tall and they weigh 56.8 kg on average and their average BMI is 22.1 kg/m2 while men in Turkey are 1.75 m tall and they weigh 70.5 kg on average and their average BMI is 23.0 kg/m^2. The female participants' average height in this study was ($\bar{x}$ = 1.67)—which was above the Turkish standard for height—and their average weight was ($\bar{x}$ = 56.62) —which was below the Turkish standard for weight. Their average BMI was ($\bar{x}$ = 20.31

kg/m^2)—which was below the Turkish standard. That the female participants had fit body stemmed from the fact that they were athletes and that they were selected from the students who passed a special talent test to start university education.

The average weight for the male participants in this study was ($\bar{x}$ = 75.41)—above the Turkish standard, the average height was ($\bar{x}$ = 1.78 m)—above the Turkish standard—and the average BMI was ($\bar{x}$ = 23.68 kg/m^2)—very close to the Turkish standard.

No significant differences were found between the participants' levels of physical activity according to gender. Yet, the average for the female students' FA MET-min/week was found to be higher than the male students' average.

Studies which has found that male participants' score average for physical activities is high than male participants—contrary to the finding obtained in this study—are also available (Özüdoğru, 2013; Baş Aslan, 2003; et al., 2006; Genç et al., 2011; Deniz, 2011).

It was found in this study that the male participants weighed heavier and that they were not as fit as the female participants. It was because the female participants ($\bar{x}$ = 2684.24 MET-min/week) did more physical activities than the male participants ($\bar{x}$ = 2304.41 MET-min/week).

The female participants in this study were found to be less satisfied with life despite the fact that there were no statistically significant differences between the participants according to gender. A review of the literature indicated that several studies (Yaşartürk et al., 2017; Kermen et al., 2016; Yılmaz & Aslan, 2013; Özkara et al., 2015; Fugl-Meyer, Melin, & Fugl-Meyer, 2002; Wang & Soros, 2019) reached the conclusion that levels of life satisfaction did not differ according to gender. On the other hand, Gencay (2009), in a study conducted in physical education and sports school, found statistically significant differences according to gender. The results obtained in this current study are supportive of the finding that life satisfaction is independent of gender—apart from the marginal exceptions—and the results of previous studies (Fugl-Meyer, Melin and Fugl-Meyer, 2002; Wang and Soros 2019; Gençay 2009; Albayrak 2016).

However, no significant correlations were found between the male and female participants' rates of activities they did at school, during sport and during their free time and their levels of life satisfaction. Although satisfaction felt in terms of free time activities is a source which can cause sense of achievement, the values of life satisfaction were not related to school (work place), sport and free time activities largely because the students were not active enough and because they had very similar averages. The reason was that they were expected to have free and volunteering participation in the activities which provide participants with important gains in their lives (Payne et al., 2006). The results obtained in this study showed that there were no correlations between regular physical activities and life satisfaction because of insufficient participation in physical activities.

Significant differences were found between the male and female participants' grade point averages. Accordingly, the female students were higher grade point averages—and thus, they were more successful—than the male ones.

In terms of the types of sport they did, no differences were found between the students' life satisfaction and the levels of physical activity. In support of this, studies concluding that there are no differences between students' levels of life satisfaction according to the sport they do are available in the literature (Berktaş, 2019).

The students aged between 18 and 21 were found to have significantly lower BMI averages than the students aged 22 and above. It may be said that it stemmed from the fact that the 18-21 age group students had higher PA MET-min/week average than the 22-year-old-students. In addition to that, positive correlations were found between students' age and their life satisfaction. Thus, their satisfaction with life increased as they grew older.

Review of relevant literature (Karakılıç et al., 2009; Hanbay et al., 2017; Gülcan & Bal, 2014; Eryılmaz & Ercan, 2011; Aydıner, 2011) demonstrated that the finding that there were significant differences between participants' levels of life satisfaction according to age was contrary to the one obtained in this current study.

Correlations were not found between the participants' life satisfaction and their physical activities in this study. Besides, no significant differences were found according to their levels of physical activities. Albayrak (2016) found no significant correlations between male and female participants' rates of activities at school, during sport and in their free time and their levels of life satisfaction. It was a finding supportive of the one obtained in this current study.

The number of physical activities was not an important factor in life satisfaction in this study. It was thought to stem from the characteristics of the study group. Physical activities were an integral part of the participants' job and life because all the participants were athletes. Therefore, they do not add anything extra to their life or influence their life satisfaction.

Klaudia et al. (2019) also concluded in a study performed with the participation of prospective physical education teachers that physical activities (PA) were not an important factor in life satisfaction (LS) and attributed the result to the characteristics of the study group. Hodaň and Dohnál (2005) state that positive results could not be obtained in renovation and in recreation by focusing only on the physical area. It was found that physical education teachers did not do basic recreation activities—that is to say, they did not re-gain their tiredness after work—which offered them renewal. Recreation has significant and positive correlations with LS in general (Najwin & Veenhoven, 2014).

Biddle, Mutrie, and Gorely (2001) confirmed that PA applications on the basis of intensive exercise were generally doomed to failure regardless of any physiological reasons—just like hard work. In this context, humans' movement regime should be optimised (Hodaň & Dohnál, 2005). A wrong movement regime is the one which is one-sided or extreme. This optimisation should be a part of work life and of life outside work. We believe that the frequency and volume of sufficient PA in the total time along with resting can contribute in positive ways to LS evaluation. Therefore, the question is whether such an activity is the right choice for physical education and sport students to spend time in terms of one-sidedness.

Negative and weak correlations were found between students' age and PA whereas positive and weak correlations were found between students' age and BMI. Thus, students move away

from physical activities as they grow older and as a result, they put on weight. Several studies in the literature (Seçer, 2019; Aksu, 2018; Parlaktaş, 2018; Kara, 2017; Hekim & Yüksel, 2015; Özüdoğru, 2013; Cauley et al., 1991) found no significant differences between physical activities according to age and concluded that physical activities diminished in parallel to the rise in age. The result that there were negative and weak correlations between age and PA but that there were no significant differences between age groups—which was obtained in this study—was in parallel to the results obtained in other studies.

Despite those studies (Polat, 2018; Karaca et al., 2017; Sağlam, 2015), there are also studies which have found that physical activities differ according to age.

It was found that the students who were Low PA had significantly higher body mass index than the students who were Moderate PA and then the students who were high PA.

The average increase in the percentage of body fat ratio—which is a result of aging—is reflective of reduction in physical activities and of decrease in metabolic rate or of increase in calorie intake. Exercise reduces body fat mass but the degree of reduction is dependent on the type, intensity and frequency of exercise (Zorba & Saygın, 2017). Research has shown that young people with high percentage of body fat have lower levels of physical activities and that they spend less time on intensive exercise (Martínez-Gómez et al., 2009).

Tudor-Locke et al. (2010), on the other hand, determined the physical activity/inactivity profiles of normal, overweight and obese groups through accelerometer. Another study conducted with the inclusion of American adults found that individuals' rate of inactivity increased as their BMI increased and that the individuals with normal weight did the greatest number of activities at medium, high and recommended levels (Macera et al., 2005). The results obtained in the literature and in Koç (2018) are supportive of the results obtained in this study.

In conclusion, it may be said that physical activities are the signs of healthy life and are one of the most important factors in getting satisfaction from life and in preventing overweight and obesity and that they have positive impacts on body mass index.

As a result, it was found that physical activities did not have effects on students' life satisfaction. Yet, physical activities were found to reduce university students' average BMI and to reduce weight problems and thus to help them to be healthier individuals.

References

Aksu, E. O. (2018). *Analysis of physical education and sport teacher candidates' physical activity levels in terms of academic achievement and various parameters* (Master's Thesis, Karadeniz Technical University, Trabzon).

Albayrak, E. (2016). *The relatïonshïp between the physïcal actïvïty's level and the lïfe satïsfactïon level of undergraduate* (Master's Thesis, Amasya University, Institute of Social Sciences, Amasya).

Arlı, M., & Nazik, H. (2001). *Bilimsel araştırmaya giriş*. Ankara: Gazi kitapevi.

Aydıner, B. B. (2011). *The relationship between sub-dimensions of the life goals with general self-efficacy, life-satisfaction and some variables* (Master's Thesis, Sakarya University, Institute of Educational Sciences, Sakarya).

Baş Aslan, U. (2003). *Comparison of different methods for measuring the physical activitiy level* (Doctoral Thesis, Hacettepe University, Institute of Health Sciences, Ankara).

Berktaş, S. (2019). *Examination of life satisfaction levels of inönü university faculty of sports sciences students* (Master's Thesis, İnönü University, Institute of Health Sciences, Malatya).

Biddle, J. H. S., Mutrie, N., & Gorely, T. (2001). *Psychology of physical activity: Determinants, well-being and interventions* (pp. 20-49). Routledge, Taylor & Francis Group.

Cauley, J. A., Donfield, S. M., Laporte, R. E., & Warhaftig, N. E. (1991). Physical activity by sosyo economic statusin two population based cohorts. *Medicine and Science in Sports and Exercise, 23*, 343-51. https://doi.org/10.1249/00005768-199103000-00013

Craft, L. L., & Perna, F. M. (2004). The benefits of exercise for the clinically depressed. *Primary Care Companion to the Journal of Clinical Psychiatry, 6*(3), 104-111. https://doi.org/10.4088/PCC.v06n0301

Craig, C. L., Marshall, A. L., Sjorstrom, M., Bauman, A. E., Booth, M. L., Ainsworth, B. E., & Oja, P. (2003). International physical activity questionnaire: 12-country reliability and validity. *Medicine and Science in Sports and Exercise, 35*, 1381-1395. https://doi.org/10.1249/01.MSS.0000078924.61453.FB

Dağlı, A., & Baysal, N. (2016). Adaitation of the satisfaction with life scale into Turkish: The study of validity and reliability, *Electronic Journal of Social Sciences, 15*(59), 1250-1262. https://doi.org/10.17755/esosder.75955

Deniz, M. (2011). *A research on the relationship between the level of physical activity and socioeconomic status in adults* (Master's Thesis, Uludağ University, Institute of Health Sciences, Bursa).

Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*, 71-75. https://doi.org/10.1207/s15327752jpa4901_13

Eryılmaz, A., & Ercan, L. (2011). Investigating of the subjective well-being based on gender, age and personality traits. *Turkish Psychological Counseling and Guidance Journal, 4*(36), 139-151.

Ferrari, A. J., Charlson, F. J., Norman, R. E., Patten, S. B., Freedman, G., Murray, C. J. L., & Whiteford, H. A. (2013). Burden of Depressive Disorders by Country, Sex, Age, and Year: Findings from the Global Burden of Disease Study 2010. *PLoS Medicine*. https://doi.org/10.1371/journal.pmed.1001547

Fowler, F. J. (2008). *Survey Research Methods*. Thousand Oaks: Sage Publications.

Fugl-Meyer, A. R., Melin, R., & Fugl-Meyer, K. S. (2002). Life satisfaction in 18-to

64-year-old Swedes: In relation to gender, age, partner and immigrant status. *Journal of Rehabilitation Medicine, 34*(5), 239-246. https://doi.org/10.1080/16501970306119

Genç, A., Şener, Ü., Karabacak, H., & Üçok, K. (2011). Investigation of physical activity and quality of life differences between male and female young adults. *The Medical Journal of Kocatepe, 12*(3), 145-150.

Gençay, S. (2009). Examinatıon of hopelessness and life satisfaction level of physical educator candidates according to the some variables. *Electronic Journal of Social Sciences, 8*(27), 380-388.

Gerber, M., Brand, S., Herrmann, C., Colledge, F., Holsboer Trachsler, E., & Pühse, U. (2014). Increased objectively assessed vigorousintensity exercise is associated with reduced stress, increased mental health and good objective and subjective sleep in young adults. *Physiology & Behavior, 135*, 17-24. https://doi.org/10.1016/j.physbeh.2014.05.047

Gülcan, A., & Bal, N. B. (2014). Investigating the effect of optimism on happiness and life satisfaction of young adults. *Asian Journal of Instruction, 2*(Special 1), 41-52.

Hanbay, E., Keskin, B., & Kahrıman, M. (2017). Research of the life satisfaction of individuals who exersize regularly. *The Journal of International Social Research, 10*(51), 1305-1313. https://doi.org/10.17719/jisr.2017.1858

Hekim, M., & Yüksel, Y. (2015). Investigation of body mass index and physical activity levels of secodary school students in terms of age, gender and doing sport situations. *Gümüşhane University Journal of Health Sciences, 4*(2), 259-269.

Hodaň, B., & Dohnál, T. (2005). *Rekreologie (Recreology)*. Olomouc, Czech Republic: Hanex.

Kara, M. G. (2017). *Investigation of physical activity levels and obesity awareness levels of middle school students* (Master's Thesis, Inönü University, Institute of Health Sciences, Malatya).

Karaca, A., Sağınç, S., & Albayrak Kuruoğlu, Y. (2017). *Mikro işletme sahipleri ve çalışanlarının fiziksel aktivite ve oturma sürelerinin bazı sosyo-demografik değişkenlere göre incelenmesi*. 15. Uluslararası Spor Bilimleri Kongresi, 15-18 Kasım 2017, Antalya.

Karakılıç, M., Alay, S., & Koçak, S. (2009). Student satisfaction level on a sport management program. *Gazi Journal of Physical Education and Sport Sciences, 14*(2), 33-42.

Kermen, U., Ilçin, T. N., & Doğan, U. (2016). Social phobia as predictor of life satisfaction and psychological well-being. *Journal of Education Theory and Practical Research, 2*(2), 20-29.

Kim, J.-H., & McKenzie, L. A. (2014). The Impacts of Physical Exercise on Stress Coping and Well-Being in University Students in the Context of Leisure. *Health, Scientific Research Publishing, 6*, 2570-2580. https://doi.org/10.4236/health.2014.619296

Klaudıa, Z., Lucıa, P., & Dorota, O. (2019). Intensity of physical activity and life satisfaction

of physical education teachers. *Trends in Sport Sciences, 2*(26), 91-97.

Koç, M. (2018) *Analysing the correlations between female university students' levels of physical activity, balance performance* (Doctoral thesis, Erciyes University, Institute of Health Sciences, Kayseri).

Lee, I.-M., Shiroma, E. J., Lobelo, F., Puska, P., Blair, S. N., Katzmarzyk, P. T., & Lancet Physical Activity Series Working Group. (2012). Effect of physical inactivity on major noncommunicable diseases worldwide: an analysis of burden of disease and life expectancy. *The Lancet, 380*(9838), 219-229. https://doi.org/10.1016/S0140-6736(12)61031-9

Lees, C., & Hopkins, J. (2013). Effect of aerobic exercise on cognition, academic achievement, and psychosocial function in children: A systematic review of randomized control trials. *Preventing Chronic Disease, 10*. https://doi.org/10.5888/pcd10.130010

Lehnert, K., Sudeck, G., & Conzelmann, A. (2012). Subjective well-being and exercise in the second half of life: A critical review of theoretical approaches. *European Review of Aging and Physical Activity, 9*, 87-102. https://doi.org/10.1007/s11556-012-0095-3

Macera, C. A., Ham, S. A., Yore, M. M., Jones, D. A., Ainsworth, B. E., Kimsey, C. D., Kohl III, H. W. (2005). Prevelance of physical activity in the United States: Behavirol risk factor surveillance system, 2001. *Prev Chronic Dis, 2*(2), 1-10.

Maher, J. P., Doerksen, S. E., Elavsky, S., & Conroy, D. E. (2014). Daily satisfaction with life is regulated by both physical activity and sedentary behavior. *Journal of Sport and Exercise Psychology, 36*(2), 166-178. https://doi.org/10.1123/jsep.2013-0185

Martínez-Gómez, D., Eisenmann, J. C., Moya, J. M., Gómez-Martínez, S., Marcos, A., & Veiga, O. L. (2009). The role of physical activity and fitness on the metabolic syndrome in adolescents: Effect of differentscores, The Afinos Study. *J Physiol Biochem, 65*(3), 277-89. https://doi.org/10.1007/BF03180580

McKinney, J., Lithwick, D. J., Morrison, B. N., Nazzari, H., Isserow, S., Heilbron, B., & Krahn, A. D. (2016). The health benefits of physical activity and cardiorespiratory fitness. BC *Medical Journal.* Retrieved May 11, 2017, from http://www.bcmj.org/articles/health-benefits-physical-activity-and-cardiorespiratoryfitness

Nawijn, J., & Veenhoven, R. (2014). Happiness Through Leisure. In T. Freire (Ed.), *Positive leisure science: From subjective experience to social contexts* (pp. 193-209). Springer Science Business Media Dordrecht. https://doi.org/10.1007/978-94-007-5058-6

Nguyen Michel, S. T., Unger, J. B., Hamilton, J., & Spruijt Metz, D. (2006). Associations between physical activity and perceived stress/hassles in college students. Stress and Health: *Journal of the International Society for the Investigation of Stress, 22*(3), 179-188. https://doi.org/10.1002/smi.1094

Ozkara, B. A., Kalkavan, A., & Çavdar, S. (2015). Examination of the life satisfactions levels of students receiving education in sports sciences. *Int J Sci Cult Sport, 3*(Special 1), 336-346. https://doi.org/10.14486/IJSCS293

Özüdoğru, E. (2013). *A research on the relationship between the university personnel's physical activity level and life quality* (Master's Thesis, Mehmet Akif Ersoy University, Institute of Educational Sciences, Burdur).

Parlaktaş, Y. (2018). *Investigate the relationship between levels of physical activity and academic success levels of secondary school students (Kırıkkale Province Sample)* (Master's Thesis, Kırıkkale University, Institute of Health Sciences, Kırıkkale).

Payne, L. L., Mowen, A. J., & Montoro-Rodriguez, J. (2006). The role of leisure style in maintaining the health of older adults with arthritis. *Journal of Leisure Research, 38*(1), 20-45. https://doi.org/10.1080/00222216.2006.11950067

Polat, O. (2018). *Evaluation of physical activity levels of police members* (*Artvin Province Sample)* (Master's Thesis, Niğde Ömer Halis Demir University, Institute of Social Sciences, Niğde).

Sağlam, Y. (2015). *Comparison of quality of life levels and physical activity levels of teachers (Bitlis Province Sample)* (Master's Thesis, Niğde University, Institute of Social Sciences, Niğde).

Sato, M. (2017). Exercise and Weil-Being. In S. Razon, & M. L. Sachs (Eds.), *Applied Exercise Psychology: The Challenging Journey from Motivation to Adherence.* New York: Routledge. https://doi.org/10.4324/9780203795422-7

Savcı, S., Öztürk, M., Arıkan, H., İnce, D. İ., & Tokgözoğlu, L. (2006). Physical activity levels of university students. *Archives of the Turkish Society of Cardiology, 34*(3), 166-172.

Seçer, E. (2019). *The relationship between physical activity levels and psychological resilience of college students* (Master's Thesis, Erzincan Binali Yıldırım University Institute of Health Sciences, Erzincan). https://doi.org/10.20511/pyr2020.v8nSPE2.598

Standage, M., Gillison, F. B., Ntoumanis, N., & Treasure, D. C. (2012). Predicting students' physical activity and health-related wellbeing: A prospective cross-domain investigation of motivation across school physical education and exercise settings. *Journal of Sport and Exercise Psychology, 34*(1), 37-60. https://doi.org/10.1123/jsep.34.1.37

Stanton, R., & Reaburn, P. (2014). Exercise and the treatment of depression: A review of the exercise program variables. *Journal of Science and Medicine in Sport, 17*(2), 177-182. https://doi.org/10.1016/j.jsams.2013.03.010

Stanton, R., Happell, B., & Reaburn, P. (2014). The mental health benefits of regular physical activity, and its role in preventing future depressive illness. *Nursing: Research and Reviews, 2014*(4), 45-53. https://doi.org/10.2147/NRR.S41956

Ströhle, A. (2009). Physical activity, exercise, depression and anxiety disorders. *Journal of Neural Transmission, 116*(6), 777. https://doi.org/10.1007/s00702-008-0092-x

TSI (Turkish Statistical Institute). (2021). Retrieved March 24, 2021, from https://data.tuik.gov.tr/Search/Search?text=kilo

Tudor-Locke, C., Brashear, M. M., Johnson, W. D., & Katzmazyk, P. T. (2010). Accelerometer profiles of physical activity and inactivity in normal weight, overweight, and obese U.S. men and women. *Int J Behav Nutr Phys Act, 7*(60), 11. https://doi.org/10.1186/1479-5868-7-60

Wang, F., & Boros, S. (2019). The relationship between physical activity, stress, life satisfaction and sleep quality. *Journal of Physical Education and Sport, 19*(Supplement Issue 1), 227-234.

WHO (World Health Organization). (2010). *Global recommendations on physical activity for health*. http://www.who.int/dietphysicalactivity/factsheet_recommendations/en

WHO Depression. (n.d.). Retrieved: March 6, 2017, from http://www.who.int/topics/depression/en

Willwéber, T. (2016). Effectiveness of the "IAAF kids' athletics project" in levelling changes of general physical performance among boys of early school age. *J Phys Educ Health, 5*(8), 21-28.

Witkowski, K., Piepiora, P. A., Leśnik, M., & Migasiewicz, J. (2017). Social status of karate and personal benefits declared by adults practicing karate. *Arch Budo Sci Martial Art Extreme Sport, 13*, 179-184.

Wolff, E., Gaudlitz, K., Lindenberger, B.-L., Plag, J., Heinz, A., & Ströhle, A. (2011). Exercise and physical activity in mental disorders. *European Archives of Psychiatry & Clinical Neuroscience, 261*, 186-191. https://doi.org/10.1007/s00406-011-0254-y

Yaşartürk, F., Akyüz, H., & Karataş, I. (2017). Examination of university students' levels of leisure boredom perception and life satisfaction towards recreative activities *Int J Cult Soc Studies, 3*(Special Issue), 239-252.

Yılmaz, E., & Aslan, H. (2013). Examination of relationship between teachers' loneliness at workplace and their life satisfaction. *Pegem Journal of Education and Instruction, 3*(3), 59-69. https://doi.org/10.14527/C3S3M6

Zorba, E., & Saygın, Ö. (2017). *Fiziksel Aktivite ve Fiziksel Uygunluk* (4th ed.). Perspektif Matbaacılık, Ankara.

Zullig, K. J., & White, R. J. (2011). Physical activity, life satisfaction, and self-rated health of middle school students. *Applied Research in Quality of Life, 6*(3), 277-289. https://doi.org/10.1007/s11482-010-9129-z