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Examining the Relationship Between Leisure Time Physical Activity Constraints and Healthy Lifestyle Behaviors Among University Students

Üniversite Öğrencilerinde Serbest Zaman Fiziksel Aktivite Kısıtlayıcıları ile Sağlıklı Yaşam Biçimi Davranışları Arasındaki İlişkinin İncelenmesi

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Abstract

Objective: The aim of this study is to examine the relationship between leisure time and physical activity constraints and healthy lifestyle behaviors among university students and to determine possible differences according to sociodemographic and physical characteristics.
Materials and Methods: The participants were reached using the purposeful sampling method, which is an improbable sampling method, and students from a public university located in a province in Southeastern Anatolia were accepted as the target group. The study population consisted of students who received health education at the level of associate degree (n=380). The questionnaire created by the researchers comprises three parts. The first part of the form consisted of descriptive questions that query the sociodemographic characteristics, the second part consisted of the Scale of Leisure Time Physical Activity Constraints, and the third part consisted of the Healthy Life Style Behavior Scale-II form.
Results: In the present study, sociodemographic characteristics of the participants, such as gender, persons sharing living quarters, transportation preferences, and regular exercise, were effective in reducing leisure physical activity constraints, and the department they studied at the university, gender, and regular exercise were effective in reducing healthy lifestyle behaviors, as well. In addition, as a result of the present study, it was determined that leisure time and physical activity constraints have a negative effect on healthy lifestyle behaviors.
Conclusion: Interventions to reduce physical activity constraints may also have a positive effect on a healthy lifestyle.
Keywords: Physical activity, leisure activities, healthy life, student

Öz

Amaç: Çalışmamızın amacı, üniversite öğrencilerinde serbest zaman fiziksel aktivite kısıtlayıcıları ile sağlıklı yaşam biçimi davranışları arasındaki ilişkiyi incelemek, sosyodemografik ve fiziksel özelliklere göre olası farklılıkları ortaya koymaktır.
Gereç ve Yöntem: Katılımcılara olasılıksız örneklem yöntemlerinden olan amaçlı örneklem yöntemi ile ulaşılmış, bunun için Güneydoğu Anadolu'daki bir ilde bulunan kamu üniversitesinin öğrencileri hedef kitle olarak kabul edilmiştir. Araştırmanın evrenini, ön lisans düzeyinde sağlık eğitimi alan öğrenciler oluşturmuştur (n=380). Literatür kaynaklı olarak araştırmacılar tarafından oluşturulan anket formu üç bölümdür. Formun birinci bölümü sosyodemografik özellikleri sorgulayan tanımlayıcı sorulardan, ikinci bölümü, Serbest Zaman Fiziksel Aktivite Kısıtlayıcıları Ölçeği ve üçüncü bölüm ise, Sağlıklı Yaşam Biçimi Davranışları Ölçeği II'den oluşmuştur.
Bulgular: Çalışmamızda katılımcıların cinsiyet, barınma şekli, ulaşım tercihleri ve düzenli egzersiz yapmak gibi sosyodemografik özelliklerinin serbest zaman fiziksel aktivite kısıtlayıcıları üzerinde etkili oldukları ve üniversitede okumuş oldukları bölüm, cinsiyet ile düzenli egzersiz yapma durumlarının da sağlıklı yaşam biçimi davranışları üzerinde etkili olduğu belirlenmiştir. Ayrıca çalışmamız sonucunda serbest zaman fiziksel aktivite kısıtlayıcılarının sağlıklı yaşam biçimi davranışları üzerinde negatif yönde bir etkisi olduğu saptanmıştır.
Sonuç: Fiziksel aktivite kısıtlayıcıları üzerinde yapılacak olan müdahalelerin sağlıklı yaşam biçimi üzerinde de olumlu etki oluşturacağı düşünülmektedir.
Anahtar kelimeler: Fiziksel aktivite, serbest zaman aktiviteleri, sağlıklı yaşam, öğrenci

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Introduction

Leisure time is defined as an activity area that bring individuals in valuable meanings of life and they experience psychologically, spiritually, socially, and/or culturally in different ways in the sense (1). It is crucial to include physical activities in leisure time activities in terms of their healthy life quality. Physical activity refers to body movements that cause energy expenditure more than the energy consumed at rest in the individual as a result of contraction of skeletal muscles. Leisure time physical activities, on the other hand, are a general definition of activities that are attended in leisure time intervals for individual interests and needs. These activities may include activities such as walking, sports, swimming, and dancing, as well as exercise programs structured with dimensions such as duration, frequency, and target (2). Although the contribution of physical activity to health is known, the literature has reported that the level of physical activity exhibited by individuals during their leisure time is insufficient (3,4). Studies have reported that university students have considerably difficulties in participating in leisure time activities and only a low rate (18%) of students do physical activity at an adequate level (5,6). Leisure time constraints, on the other hand, are factors that prevent the individuals from participating in leisure time activities, reduce the number of subsequent participation in activities, cause loss of time, negatively affect the motivation and desire to participate in activities, and decrease the expected satisfaction from the activities (7). University is an ideal setting for an individual to develop a lifestyle that will determine their current and future health (8).

Therefore, the aim of this study is to examine the relationship between leisure time physical activity constraints and healthy lifestyle behaviors among university students and to determine possible differences according to sociodemographic and physical characteristics. Its data is expected to guide the approaches to be planned on leisure time physical activity constraints.

Materials and Methods

Design and Data Collection Method of the Study

Quantitative method and descriptive cross-sectional design were used in the study. Data were collected between October and December 2022.

Population and Sample

The population of the study consisted of students who received health education at the level of associate degree. G*Power 3.1.9.2 program was used to calculate the sample size. By taking tail (s); two, effect size d; 0.2, alpha (α) err prob: 0.2, Power (1-β err prob); 0.95, non-centrality parameter δ; 3.61, critical t; 1.96 and df; 326 into consideration, total sample size was calculated to be 327 people, and the data were obtained from 392 people.

The participants were reached with the purposeful sampling method, which is one of the improbable sampling methods, and the students of a public university located in a province in Southeastern Anatolia were accepted as the target group.

Ethical Considerations

Before the study, approval from the Gaziantep Islam Science and Technology University Non-Interventional Clinical Research Ethics Committee and necessary permission from the related institution were obtained (decision no: 152.19.11, date: 14.09.2022). Moreover, the participants were informed with the informed consent form attached to the questionnaire in the context of the criteria of the Declaration of Helsinki.

Data Collection Tools

Individual Information Form: This form includes questions about some socio-demographic characteristics of the participants [age, gender, university year, place of residence, habits, mode of transportation, body mass index (BMI) value].

Scale of Leisure Time Physical Activity Constraints (LTPA-C): The scale developed by Öcal (9,18) in 2012 is a 6-point Likert type scale. The lowest and highest scores of the scale are 38 and 228 points, respectively. There are no reverse scored questions in the scale. The scale has a total of 38 items and has eight subscales. These subscales are Body Perception (BP), Willpower (WP), Facility; F, Income (I), Society (S), Family (Fa), Time (T), and Skill Perception (SP). The subscale BP (items 1-6) questions the perception of the person's physical condition. The subscale WP (items 7-10) questions the decision-making power of the person to do physical activity or continue to do physical activity if yes. The subscale F (items 11-18) questions the area, field, and opportunities in the environment for physical activity. The subscale I (items 19-23) questions the person's budget for physical activity. The subscale S (items 24-27) questions the attitudes of the person's circle, other than first-degree relatives, about physical activity. The subscale Fa (items 28-31) questions the attitudes of the person's first-degree relatives about physical activity. The subscale T (items 32-34) questions the restriction on the T that the person will allocate for physical activity to the obligatory works. The subscale SP (items 35-38) questions the perception of the person about knowledge and skills related to physical activity. In the validity and reliability study of the scale, it was reported that the Cronbach's α coefficients ranged between 0.83 and 0.92 for the subscale of the scale, and was 0.93 for the overall scale (9).

In this study, Cronbach's α value found to be 0.834 in BP, 0.629 in WP, 0.795 in F, 0.901 in I, 0.831 in S, 0.838 in Fa, 0.765 in T, 0.838 in SP, and 0.908 for LTPA-C. In the literature, it is accepted that if Cronbach's α coefficient is $0.00 \leq \alpha < 0.40$, the scale is unreliable; if it is $0.40 \leq \alpha < 0.60$, the scale has a low reliability; it is $0.60 \leq \alpha < 0.80$, the scale is highly reliable; and if it is $0.80 \leq \alpha < 1.00$, the scale is highly reliable (10). Therefore, the Cronbach's α coefficients of the LTPA-C and subscale scores used for this study were calculated to be highly reliable.

Healthy Life Style Behaviour Scale II (HLBS-II): The Health-Promoting Lifestyle Profile was developed by Walker and Hill-Polerecky (11) in 1996, based on Pender's health promotion model. HLBS-II aims to assess health promoting behaviors in individuals. In 2008, Bahar et al. (12), conducted its validity and reliability study and adapted it into Turkish. The Cronbach's α value of the scale was 0.92. Subscales of the scale are Spiritual Growth (SG: items 6, 12, 18, 24, 30, 36, 42, 48, and 52), Interpersonal Relations (IPR: Items 1, 7, 13, 19, 25, 31, 37, 43, and 49), Nutrition (N: Items 2, 8, 14, 20, 26, 32, 38, 44, and 50), Physical Activity (PA: Items 4, 10, 16, 22, 28, 34, 40, and 46), Health Responsibility (HR: Items 3, 9, 15, 21, 27, 33, 39, 45, and 51) and Stress Management (SM: Items 5, 11, 17, 23, 29, 35, 41, and 47). Items of this four-point Likert scale are rated as 1 point for "never", 2 points for "sometimes", 3 points for "often", and 4 points for "regular". The lowest and highest scores of the scale are 52 and 208, respectively. Each subscale can be evaluated independently, or the total score of the scale can be calculated. Higher scores indicate that the individual applies the specified health behaviors at a high level.

In this study, the Cronbach's α coefficients of the scale were found to be 0.753 for HR, 0.710 for PA, 0.553 for N, 0.804 for SG, 0.667 for IPR, 0.691 for SM, and 0.903 for HLBS-II. The scale was calculated as highly reliable in terms of total score (12).

Statistical Analysis

The data of the study were analyzed with the SPSS-23 program. Error controls, tables and statistical analyses were done. Number and percentage values were given for descriptive statistical evaluation. Normality analyses were carried out using calculation, graph and hypothesis testing methods for the total scores of LTPA-C and HLBS-II, which are dependent variables, and it was observed that the total scores of both scales were normally distributed. For this reason, parametric tests (Independent samples t-test and One-Way ANOVA), Pearson correlation analysis, and multiple regression analysis were applied. Statistical significance level was accepted as $p<0.05$.

Results

The study was completed with 380 volunteer students (294 females, 86 males) attending Vocational School of Health Services. Out of the students, 207 were the 1st-year students and 173 were the 2nd-year students. The mean age of the participants was 19.91±1.73 years [minimum-maximum (min-max): 17.00-40.00] and their BMI values were 21.90±4.02 (min-max: 15.57-48.00). Out of the students included in the study, 115 stated that they had a regular exercise habits; whereas, 265 stated that they did not have a regular exercise habits.

Table 1 shows the situations that caused a difference in the analyses made to determine whether or not the descriptive characteristics of the participants cause a difference on the LTPA-C and HLBS-II. It was determined that the variables of age range, university year, smoking habit, presence of chronic disease, persons sharing living quarters, and BMI categorical classification did not make a difference ($p>0.05$). While those who were male, were going to school by walking and stated that they did not exercise regularly had high LTPA-C scores, those who stated that they were regularly exercising and were studying in an elderly care program had high HLBS-II scores ($p<0.05$).

When scores of the LTPA-C subscales were examined in the present study, it was determined that the leisure T PA constraint factors were F (25.09±8.68), I (17.90±5.56) and S (14.42±5.40), respectively (Table 2).

When the distribution of the subscale scores of LTPA-C in terms of gender was examined, it was found that there was a statistically significant difference in the subscales of WP, I, S, and SP (respectively p=0.014, p=0.021, p=0.006, and p=0.001) (Table 3).

When the distribution of the subscale scores of LTPA-C in terms of regular exercise habit was examined, a statistically significant difference was determined in the subscales of BP, WP, S, and SP (respectively p=0.007, p=0.000, p=0.020, and p=0.000) (Table 4).

Table 1. Comparison of LTPA-C and HLBS-II in terms of descriptive characteristics of participants (n=380)

Characteristics		LTPA-C Mean ± SD	Test value	HLBS-II Mean ± SD	Test value
Gender	Female Male	109.38±27.34 101.46±30.83	t=2.293 **p=0.022**	123.52±21.80 128.47±25.57	T=-1.779 p=0.076
Mode of transportation	Public transport Personal vehicle Walking	107.26±28.10 75.80±26.46 109.81±28.28	F=3.554 **p=0.030**	125.24±23.54 134.80±27.01 122.73±20.58	F=0.976 p=0.378
Program they studied	Physical med. reh. First aid Medical secretaryship Elderly care	107.29±25.53 107.95±31.26 107.93±26.85 107.24±30.74	F=0.018 p=0.997	124.16±21.02 119.56±23.24[a] 125.36±21.23 130.83±25.20[a]	F=3.613 **p=0.013**
Regular exercise	Yes No	101.29±28.07 110.32±28.04	t=-2.882 **p=0.004**	129.24±21.67 122.64±22.98	T=2.613 **p=0.009**

[a, b] Shows the groups from which the difference originates. $p<0.05$

LTPA-C: Scale of Leisure Time Physical Activity Constraints, HLBS-II: Healthy Life Style Behaviour Scale II, SD: Standard deviation, Physical med. reh.: Physical medicine and rehabilitation

When the overall HLBS-II and its subscales were analyzed, it was remarkable that the subscales of PA (16.61±5.56), N (17.09±4.49) and SM (18.72±4.40) had a lower mean score compared to the other subscales (SG: 25.50±5.43, IPR: 25.08±5.46, HR: 19.49±4.69). The total score of HLBS-II was determined as 124.64±22.77.

When analyzing the distribution of the subscale scores of the "HLBS-II" in terms of gender, it was found that there was a significant difference in the subscales of N and PA (respectively p=0.034 and p=0.000) (Table 5).

When the distribution of the subscale scores of the "HLBS-II" in terms of regular exercise was examined, it was observed that there was a significant difference in the subscales of N and PA (respectively p=0.034 and p=0.000).

The value of leisure T, PA constraints had a negative effect on health lifestyle behaviors. 4.7% of healthy lifestyle behavior can

Table 2. The participant's LTPA-C total and subscale scores (n=380)

Subscales	Mean ± SD	Min	Max	95%CI
Body Perception: BP	11.39±5.12	6	36	10.88-11.91
Willpower: WP	11.61±5.04	4	38	11.10-12.12
Facility: F	25.09±8.68	8	64	24.22-25.97
Income: I	17.90±5.56	8	69	17.19-18.62
Society: S	14.42±5.40	4	24	13.87-14.96
Family: Fa	8.37±4.57	4	24	7.90-8.83
Time: T	9.69±4.06	3	18	9.28-10.10
Skill Perception: SP	9.19±4.28	4	24	8.76-9.62
LTPA-C	107.59±28.32	38	199	104.73-110.44

LTPA-C: Scale of Leisure Time Physical Activity Constraints, Min: Minimum, Max: Maximum, SD: Standard deviation, CI: Confidence interval

Table 3. Distribution of the participant's scores of LTPA-C subscales in terms of gender (n=380)

Subscale	Gender		Test value
	Female	Male	
Body Perception: BP	11.45±4.80	11.20±6.09	t=0.387, p=0.699
Willpower: WP	11.95±4.80	10.44±5.64	t=2.466, **p=0.014**
Facility: F	25.39±8.70	24.09±8.59	t=1.219, p=0.223
Income: I	18.36±6.91	16.36±7.48	t=2.314, **p=0.021**
Society: S	14. 83±5.30	13.01±5.53	t=2.773, **p=0.006**
Family: Fa	8.23±4.40	8.83±5.13	t=-1.074, p=0.284
Time: T	9.58±3.97	10.06±4.38	t=-0.965, p=0.335
Skill Perception: SP	9.56±3.97	7.90±4.19	t=3.204, **p=0.001**

LTPA-C: Scale of Leisure Time Physical Activity Constraints, p<0.05

Table 4. Distribution of the participants' scores of LTPA-C subscales in terms of regular exercise (n=380)

Subscale	Regular exercise		Test value
	Yes	No	
Body Perception: BP	10.32±4.12	11.86±5.43	t=-2.720, **p=0.007**
Willpower: WP	9.60±4.73	12.48±4.92	t=-5.310, **p=0.000**
Facility: F	24.66±8.95	25.28±8.58	t=-0.645, p=0.520
Income: I	17.93±7.24	17.89±7.03	t=0.041, p=0.968
Society: S	13.44±5.59	14.84±5.27	t=-2.336, **p=0.020**
Family: Fa	8.21±4.39	8.43±4.66	t=-0.430, p=0.667
Time: T	9.51±4.10	9.77±4.05	t=-0.581, p=0.561
Skill Perception: SP	7.95±3.74	9.72±4.39	t=-3.771, **p=0.000**

LTPA-C: Scale of Leisure Time Physical Activity Constraints, p<0.05

be explained by leisure T, PA constraints. As can be seen, leisure T, PA constraints had a predictive effect on healthy lifestyle behaviors (Table 6).

Discussion

The present study aimed to examine the relationship between leisure T, PA constraints and healthy lifestyle behaviors among university students.

The results of the present study pointed out that gender, persons sharing living quarters, regular exercise habits and mode of transportation caused differences on leisure T, PA constraints and regular exercise habit caused differences on healthy lifestyle behavior. It was determined that female students perceived leisure T, PA constraints higher than male students, similar to the study conducted by İnal and Salar (13) on university students studying at the faculty of health sciences. Studies examining PA participation and leisure T, PA constraints in Turkey support the present study and have indicated that female subjects perceive more constraints in their participation in physical activities and leisure activities (14-16). In this context, the subscales that female students perceive more leisure T, PA constraints were WP (13), S (15,17) and I (17) as a result of the present study, which is compatible with the literature. However, the present study differs from the literature because the subscale of T, which is shown as constraint for women many T's in studies, is not in the first place in terms of constraint factors among the other subscales (15,17). Again, unlike the literature, we concluded that the subscale of SP is among the constraints for female students. Based on these results, we can interpret that the attitudes of the social circle of female students toward PA and their inability to provide the I and motivation that may be necessary for PA negatively affect the decision about whether to participate in regular physical activity, which is the result of will, or whether to continue do PA or not (10).

In the present study, it was found that the constraints of male for participation in leisure T, PA were the facilities in the surrounding area, the limited budget they can allocate for physical activity, and the attitudes of their social circle toward PA participation, similar to female students. In this context; having a friend or relative other than their first-degree relative (Fa) who is aware of the importance and necessity of PA and can provide support for including leisure T physical activities into their daily lives would be an important factor in minimizing the social environment constraint for both female students and male students.

As a result of our research, we found that the first three items that students who have a habit of exercising regularly perceive as the most restrictive factors are BP, WP and S. When we examined students who did not have regular exercise habits, we found that they perceived topics such as F, I, S and WP as significant limiting factors. Öcal (18) The results of the study they conducted by using the LTPA-C survey with university students for similar purposes with our study are quite consistent with our study, and S, I, F and WP were reported as the subheadings that were perceived as the most restrictive.

When we examine the subheading of WP, which is an important topic about starting a PA and continuing a PA regularly, we see a significant difference in the group comparison and among the subheadings of the LTPA-C survey, the highest score is between the two groups who exercise regularly and those who do not have a regular exercise habit. We saw that it was the title that made the difference. Consistent with this result of our study, the literature reported that one of the most important free T, PA restrictors for students is WP (19,20).

When we examined the leisure T, PA constraints of those who did and did not do regular PA as a result of the present study,

Table 5. Distribution of the participant's scores of HLBS-II subscales in terms of gender (n=380)

Subscale	Gender		Test value
	Female	Male	
Spiritual growth: SG	25.36±5.28	26.00±5.92	t=-0.954, p=0.341
Interpersonal relations: IPR	25.21±5.50	24.62±5.35	t=0.874, p=0.383
Nutrition: N	16.83±4.47	18.00±4.46	t=-2.128, **p=0.034**
Physical activity: PA	15.95±5.40	18.84±5.53	t=-4.342, **p=0.000**
Health responsibility: HR	19.42±4.58	19.72±5.06	t=-0.507, p=0.612
Stress management: SM	18.65±4.29	18.97±4.76	t=-0.599, p=0.549

HLBS-II: Healthy Life Style Behaviour Scale II, p<0.05

Table 6. Predictors of healthy lifestyle behavior (n=380)

Characteristic	B	SE	β	t	p	95% CI
Constant LTPA-C	143.377 -0.174	4.491 0.040	 -0.217	31.925 -4.313	0.000 0.000	134.547-152.208 -0.253- -0.095

R=0.217, R^2=0.047, F=18.60, p=0.000, Durbin-Watson =0.092
LTPA-C: Scale of Leisure Time Physical Activity Constraints, B: Beta content, SE: Standard error, CI: Confidence interval

we concluded that the social environment was an important constraint factor, which supports this result.

When we analyzed the leisure T, PA constraints of the participants according to persons sharing living quarters, we observed that persons sharing living quarters had an effect on the T factor and the students who stayed at home alone were less restricted in terms of T compared to the other students. In the study conducted by Özgül and Saatçı (21) on medical school students, they determined that the total mean score of HLBS-II was 120.1±18.1. In the study conducted by Aksoy and Uçar (22) with nursing students, they reported that the total mean score of HLBS-II was 136.12±19.16. Considering that the maximum score of HLBS-II is 208, the mean score of HLBS-II, found in the present study including the students of vocational school of health services, was 124.64±22.77, which was above the middle level of the scale, similar to the studies conducted with the medical students in the literature. In the study conducted by Pasinlioğlu and Gözüm (23) on health behaviors with healthcare professionals working in primary health care services, they reported that the total mean score of HLBS-II scale was 117.5±17.1. It was observed that the scale mean scores of health science students were higher than scores of healthcare professionals. This is thought to be associated with the effectiveness of the current education and course content of the students studying in these departments on healthy lifestyle behaviors.

In the study conducted by Özgül and Saatçı (21) to examine healthy lifestyle behaviors in medical school students, they reported that there was a significant correlation between gender and PA subscale and male students had higher scores in PA subscale. Likewise, in their study Ünalan et al. (24), revealed that male students did more PA than female students. When we examined the differences in healthy lifestyle behaviors according to gender in the present study, we observed that male participants had higher scores in the subscale of PA compared to their female counterparts, which is compatible with the literature. Considering the predictive effect of LTPA-C on HLBS-II, this result can be associated with female students' higher perceptions of PA constraints such as S, I and WP compared to male ones.

Conclusion

In the present study, conducted to examine the relationship between leisure T, PA constraints and healthy lifestyle behaviors among university students, sociodemographic characteristics of the participants such as gender, persons sharing living quarters, transportation preferences and regular exercise were effective on leisure PA constraints, and the department they studied at the university, gender and regular exercise were effective on healthy lifestyle behaviors, as well. In addition, as a result of the present study, it was determined that leisure T PA constraints had a negative effect on healthy lifestyle behaviors. When examining the HLBS-II subscales in terms of those with and without regular PA habits, we found that those who did regular PA had higher scores in the PA and SM subscales. Concerning the correlation between the LTPA-C and HLBS-II, it was remarkable that there was a significant correlation between the WP subscale of LTPA-C and all the subscales of HLBS-II.

By means of the trainings to increase PA, it is suggested to raise awareness of being physically active and to bring the habit of doing PA regularly in daily life.

Ethics

Ethics Committee Approval: Approval for the study was granted by the Gaziantep Islam Science and Technology University Non-Interventional Clinical Research Ethics Committee (decision no: 152.19.11, date: 14.09.2022).

Informed Consent: Consent form was obtained from all students participating in the study.

Authorship Contributions

Surgical and Medical Practices: B.T., A.B., Concept: B.T., A.B., Design: B.T., A.B., Data Collection or Processing: B.T., A.B., Analysis or Interpretation: B.T., A.B., Literature Search: B.T., A.B., Writing: B.T., A.B.

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