

## FİZİKSEL AKTİVİTE ARTIRICI DANIŞMANLIK HİZMETİNİN ÖĞRENCİLERİN FİZİKSEL AKTİVİTE DÜZEYLERİ ve YAŞAM KALİTELERİ ÜZERİNE ETKİSİ: BİR ÜNİVERSİTE ÖRNEĞİ

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### Öz

Bu çalışmanın amacı, öğrencilere uygulanan fiziksel aktiviteyi artırmaya yönelik danışmanlık hizmetinin, öğrencilerin fiziksel aktivite düzeyleri ve yaşam kaliteleri üzerindeki etkisini belirlemektir. Çalışmaya, Türkiye’de bir üniversitede öğrenim gören 29 öğrenci katılmıştır. Öğrencilerin fiziksel aktivite düzeyleri ve yaşam kaliteleri değerlendirilmiş; ardından, 4 haftalık fiziksel aktiviteyi artırıcı danışmanlık hizmeti verilmiş ve aynı değerlendirmeler tekrarlanarak danışmanlık hizmetinin etkileri analiz edilmiştir. Katılımcıların fiziksel aktivite düzeylerinde ve yaşam kalitesinin tüm parametrelerinde istatistiksel olarak anlamlı bir artış saptanmıştır ( $p<0.05$ ). Fiziksel aktivite düzeylerinde en fazla kısıtlanmaya neden olan faktörler sırasıyla başka önceliklerin olması, zaman bulamama ve yaralanma korkusu olarak belirlenmiştir. Ancak, 4 haftalık fiziksel aktiviteyi artırıcı danışmanlık hizmeti sonrasında katılımcıların fiziksel aktivite ve yaşam kalitesi düzeylerinde artış görülmüştür. Hizmet sonrasında Hemşirelik Bölümü öğrencilerinin fiziksel aktivite düzeylerindeki artış, Sağlık Yönetimi Bölümü öğrencilerine kıyasla daha yüksek olmuştur. Gelecek yıllarda aynı katılımcıların yeniden değerlendirilmesi, danışmanlık hizmetinin uzun vadeli etkilerinin analiz edilmesine olanak sağlayacaktır.

**Anahtar Kelimeler:** Fiziksel aktivite Düzeyi, Danışmanlık Hizmeti, Yaşam Kalitesi, Üniversite Öğrencisi

### THE EFFECT OF PHYSICAL ACTIVITY ENHANCING COUNSELLING SERVICE ON STUDENTS’ PHYSICAL ACTIVITY LEVELS AND QUALITY OF LIFE: A UNIVERSITY CASE

#### Abstract

The aim of this study is to determine the effects of physical activity-promoting counseling services provided to students on their physical activity levels and quality of life. The study included 29 students studying at a university in Turkey. The physical activity levels and quality of life of the students were assessed, followed by a 4-week physical activity-promoting counseling program. The same assessments were repeated after the counseling program, and the effects of the service were analyzed. A statistically significant increase was observed in participants' physical activity levels and all parameters of quality of life ( $p<0.05$ ). The factors most limiting physical activity levels were identified as having other priorities, lack of time, and fear of injury. However, following the 4-week physical activity-promoting counseling program, participants' physical activity and quality of life levels improved. After the program, the increase in physical activity levels among Nursing students was higher compared to those in the Health Management program. Reassessing the same participants in the coming years would provide an opportunity to evaluate the long-term effects of the counseling service.

**Keywords:** Level of physical activity, Counseling Service, Quality of Life, University Student

## 1. INTRODUCTION

Nowadays, with the increase in factors that make life easier, activity has decreased in all age groups (1). Physical activity, which is the basic condition for physical and mental health; is one of the basic functions of life (2). Physical activity has many different benefits for health, such as increasing bone mineral density and muscle strength, preventing osteoporosis, preventing physical disorders and ensuring emotional well-being (3). In addition, it also has a protective effect against systemic diseases such as cancer, cardiovascular diseases, musculoskeletal diseases and diabetes (4).

Studies evaluating the physical activity levels of young people and young adults are thought to be important in this process in terms of the early acquisition of health-related habits. Childhood and adolescent exercise habits have been shown to have a protective effect on health, and individuals who have acquired this habit tend to sustain it throughout their lifetime (5). Cengiz and Delen have emphasized that adolescence is a critical period where individuals' habits are formed; therefore, establishing adequate levels of physical activity during adolescence and guiding both youth and families are crucial (6). Moreover, several studies examining the relationship between physical activity levels and quality of life have indicated a positive correlation between individuals' physical activity levels and their quality of life (7; 8; 9).

Based on these findings, our study aimed to determine the impact of Physical Activity Enhancing Counselling Services (PAECS) on students' physical activity levels and quality of life.

## 2. MATERIALS and METHODS

**2.1. Study Design:** The study was conducted using a single-group pre-test/post-test intervention design.

**2.2. Population of the Study:** The study population consisted of students from the Nursing, Physiotherapy and Rehabilitation, and Health Management departments of a university in western Turkey (N=468). The sample size was determined to be 172 students at  $\alpha = 0.05$  and a 90% confidence level (10). In this situation, 210 students were included due to incomplete filling etc. Because 18 students did not complete the survey, 18 of them were cancelled. A total of 192 students were given the International Physical Activity Questionnaire (IPAQ). As a consequence of this survey, 45 people who volunteered to engage in the research, did not have any communication or physical activity barriers, and had low levels of physical activity as measured by the IPAQ were included in the study. But for various reasons, such illness and study dropout, the study was completed with 29 participants. The socio-demographic characteristics of the students who agreed to participate in the study were assessed using a "Socio-demographic Identification Form", the IPAQ was used to assess physical activity levels, and the SF-36 Quality of Life Scale was used to assess quality of life. Selected students were provided with Physical Activity Enhancing Counselling Services (PAECS) by the researcher over a 4-week period, covering topics such as "What is physical activity and how should it be?" (What are exercise, physical fitness and physical activity? How much and at what intensity should physical activity be required to stay healthy?), "What are the benefits of physical activity for health?" (What are the physiological and physiological impacts of physical activity on the musculoskeletal system, endocrine system, and immune system?), "What are the harms of physical inactivity" and "What should be considered during physical activity?" (What safety measures must to be followed when engaging in physical exercise to avoid injury?). The counseling sessions consisted of 8 sessions over a 4-week period, with two sessions per week. Each session lasted approximately 35-40 minutes. At the end of the 4-week period, the same questionnaires were re-administered to the 29 students (9 from the Health Management department, 10 from the Physiotherapy and Rehabilitation department, and 10 from the Nursing department).

## 2.4. Data Collection

### *Socio-demographic Identification Form:*

The researchers developed the socio-demographic identification form based on a literature review (1; 4; 9), which includes questions about individuals' age, gender, height, weight, department of study, and previous physical activity activities.

### *International Physical Activity Questionnaire (IPAQ):*

The IPAQ, consisting of seven questions about sitting, walking, moderate-intensity activities, and vigorous-intensity activities, was used to assess participants' level of physical activity. The questionnaire was developed by Craig and colleagues in 2003 to measure the physical activity levels of individuals aged 15-65 (11). The Turkish reliability and validity of the questionnaire have been established (12). Evaluation of all activities is based on the criterion that each activity should be performed for at least 10 minutes at a time. Physical activity levels: According to Craig et al. (2003), there are three categories: physically inactive (<600 MET-min/week), low physical activity (600–3000 MET-min/week), and sufficient physical activity (>3000 MET-min/week).

### *SF-36 Quality of Life Questionnaire:*

To assess participants' quality of life, the SF-36 quality of life questionnaire was used in the study. The Turkish validity and reliability study of this quality of life questionnaire was conducted by Koçyiğit and colleagues in 1999 (13). Each dimension is evaluated separately on a scale of 100 points, with higher scores indicating better health status and lower scores indicating poorer health (14).

**2.5. Ethical Issues:** In order to conduct the research, ethics committee permission (E-26428519-044-86587-2023, 32/29) was obtained from a state university, institutional permission was obtained from the university where the research was conducted, and written and verbal consent was obtained from the students participating in the research. Throughout the research, the guidelines outlined in the Declaration of Helsinki were adhered to.

**2.6. Analysis of the study:** The statistical analysis of the study was conducted with the SPSS 24 data analysis program. Since the skewness and kurtosis values are between -1.5 and +1.5, the data are normally distributed. Since the data were normally distributed, a t-test was used in the statistics of the difference between two arithmetic means, One Way Anova Analysis of Variance was used in the comparison of three groups, and a Pearson correlation test was used in the correlation analysis.

## 3. RESULTS

The socio-demographic characteristics of the students participating in the study (Table 1).

**Table 1. Sociodemographic Characteristics of Participants**

		n	%
<b>Age</b>		20.17±0.92	
<b>Gender</b>	Woman	21	72.4
	Man	8	27.6
<b>Smoking</b>	Yes	8	27.6
	No	21	72.4
<b>Alcohol</b>	Yes	2	6.9
	No	27	93.1
<b>Residence of stay</b>	Dormitory	19	65.5
	House	10	34.5
<b>Initial Activity Level</b>	Inactive	4	13.8
	Minimal active	22	75.9
	Active	3	10.3

<b>Department</b>	Health Management	9	31.0
	Physiotherapy	10	34.5
	Nursing	10	34.5
<b>Total</b>		29	100

The reasons for restricting the physical activities of the students participating in the research (Table 2).

**Table 2. Reasons for Restricting Participants' Physical Activities**

	<b>n</b>	<b>%</b>	
<b>Reasons for Restricting Participants' Physical Activities.</b>	Fear of injury	4	13.6
	Having other priorities	11	38.4
	Not having enough time	6	20.6
	High price of Gym's	2	6.8
	Lack of suitable conditions	3	10.3
	not feeling need	3	10.3
<b>Total</b>	29	100	

Table 3 shows the participants' physical activity and quality of life before and after PAECS. There was a statistically significant increase in the mean levels of physical activity and all quality of life metrics before and after PAECS ( $p < 0.05$ ).

**Table 3. The Impact of PAECS on Participants' Levels of Physical Activity and Quality of Life**

	<b>Before PAECS</b>	<b>After PAECS</b>	<b>p</b>
<b>Physical Activity Level, MET-min/week</b>	1870.00±777.44	2994.20±381.83	<b>0.00</b>
<b>Physical Functioning</b>	62.06±7.73	71.00±4.46	<b>0.01*</b>
<b>Pain</b>	63.79±6.76	69.20±2.55	<b>0.02*</b>
<b>Physical Limitation</b>	67.06±6.19	78.96±6.94	<b>0.01*</b>
<b>Emotional Limitation</b>	65.00±5.00	79.44±5.53	<b>0.01*</b>
<b>Emotional Goodness</b>	66.55±5.68	81.79±5.04	<b>0.01*</b>
<b>Social Function</b>	66.06±5.45	74.56±6.07	<b>0.01*</b>
<b>Energy</b>	64.41±13.20	83.10±5.31	<b>0.00*</b>
<b>General Health Perceptions</b>	71.20±6.21	81.27±5.18	<b>0.01*</b>
<b>Physical Activity Level</b>	1.96±0.49	2.50±0.50	<b>0.01*</b>

\* The Impact of PAECS on Participants' Levels of Physical Activity and Quality of Life analyzed with t test.

The difference in physical activity levels among students from different departments after PAECS is presented in Table 4. Following PAECS, only students from the Nursing and Health Management Department showed a statistically significant difference in their physical activity levels. After PAECS, the physical activity levels of Nursing Department students were higher than those of Health Management Department students ( $p < 0.05$ ).

**Table 4. Difference in Physical Activity Levels Among Departments After PAECS**

	<b>Level of Physical Activity</b>
<b>Health Management<sup>a</sup>, MET-min/week</b>	2679.88±280.27
<b>Physiotherapy<sup>b</sup>, MET-min/week</b>	2984.30±309.99
<b>Nursing<sup>c</sup>, MET-min/week</b>	3287.00±381.83

**F =9.72, p=0.001\* (c-a= p=0.001)**

\* One Way ANOVA testi

Table 5 shows the association between individuals' physical activity levels and quality of life measures before and after PAECS. Before PAECS, there was a positive correlation between participants' levels of physical activity and the parameters of physical limitation and emotional well-

being of quality of life (respectively,  $p=0.027^*$ ,  $r=0.412$ ;  $p=0.021^*$ ,  $r=0.425$ ). After PAECS, there was a positive and significant correlation between participants' levels of physical activity and the parameters of physical limitation, emotional limitation, emotional well-being, social function, and energy of quality of life (respectively,  $p=0.018^*$ ,  $r=0.437$ ;  $p=0.000^*$ ,  $r=0.652$ ;  $p=0.005^*$ ,  $r=0.511$ ;  $p=0.020^*$ ,  $r=0.452$ ,  $p=0.009^*$ ,  $r=0.476$ ).

**Table 5. The Relationship Between Participants' Levels of Physical Activity and Parameters of Quality of Life Before and After PAECS**

		Physical Functioning	Pain	Physical Limitation	Emotional Limitation	Emotional Goodness	Social Function	Energy	General Health Perceptions
Level of Physical Activity before PAECS	r	0.072	0.164	0.412	0.425	0.175	0.351	0.293	0.358
	p	0.665	0.397	<b>0.027*</b>	<b>0.021*</b>	0.363	0.062	0.123	0.056
Level of Physical Activity after PAECS	r	0.084	0.356	0.437	0.652	0.511	0.452	0.476	0.095
	p	0.675	0.058	<b>0.018*</b>	<b>0.000*</b>	<b>0.005*</b>	<b>0.020*</b>	<b>0.009*</b>	0.624

\* r: Pearson correlation test p: anlamlılık düzeyi

#### 4. DISCUSSION

While rapidly advancing technological developments bring convenience to many aspects of our daily lives, they also tend to steer individuals toward a sedentary lifestyle. Lack of sufficient knowledge about the importance of physical activity and limited availability of spaces for social activities can contribute to low levels of physical activity among individuals (15). Counseling interventions aimed at increasing physical activity levels in the literature often involve populations of older adults and individuals with chronic diseases (16; 17; 18).

This study investigated the impact of PAECS on university students' physical activity and quality of life. Of the students who participated in the study, 72.4% were female and 27.6% were male; 65.5% resided in dormitories, while 34.5% lived at home. Prior to PAECS, the mean level of physical activity among students was  $1870.00 \pm 777.44$  MET-min/week. The main reasons for students' limited physical activity levels were prioritizing other activities during their leisure time, lack of time, and fear of injury, respectively. Following PAECS, the mean level of physical activity among students increased to  $2994.20 \pm 381.83$  MET-min/week. A study conducted by Can et al. found that one of the main factors limiting university students' participation in physical activity was the attitude of their social environment (19). We believe that the significant increase in students' physical activity levels after PAECS is attributable to the positive influence of their social environment and the interconnectedness of the reasons for students' lack of physical activity with the topics covered in PAECS. Previous studies have indeed shown a positive correlation between the level of physical activity and quality of life, although these studies have mainly focused on middle-aged adults and individuals with chronic diseases (20; 21). There is a limited number of studies conducted with healthy young adults and university students. In our study, we focused on university students. Following one month of PAECS, not only did the students' levels of physical activity increase, but their quality of life also improved. Furthermore, the improvement in quality of life was seen in all sub-parameters, including physical and emotional limitations, emotional well-being, social function, and energy. Following PAECS, nursing students had the highest levels of physical activity. Additionally, the physical activity levels of nursing students were statistically significantly higher than those of health management students. We believe that the difference between the departments is due to nursing students' curriculum being more relevant to a healthy lifestyle compared to health management students.

The World Health Organization initiated the "Global Action Plan on Physical Activity and Health 2018–2030," aiming to reduce global physical inactivity by 15% by 2030 (22). A study published in 2021 highlighted the necessity of providing physical activity counseling in primary care settings and identified insufficient knowledge and education in primary care health facilities as barriers to physical activity counseling (23).

## 5. CONCLUSION AND RECOMMENDATIONS

Upon analysis of the factors that contributed to the participants' physical activity limitations, it was determined that competing priorities, lack of time, and fear of injury were the most significant, in that order. Participants were provided with informative counseling services regarding how physical activities should be conducted, their health benefits, the dangers of inactivity, and precautions to prevent injuries during physical activity. The content of the PAECS program aligned with the reasons for participants' physical activity restrictions, resulting in an increase in their physical activity levels post-PAECS. Additionally, participants' quality of life improved after PAECS. Among the departments, the physical activity levels of participants in the Nursing Department were higher compared to those in the Health Management Department. The study did not evaluate participants' long-term physical activity levels and quality of life. In the coming years, re-evaluating the same participants can allow for the assessment of PAECS's long-term effects. Moreover, considering that physical inactivity and a sedentary lifestyle contribute to chronic diseases, it is believed that physical activity counseling services should be provided in primary care settings to prevent diseases and reduce healthcare costs. In order to accomplish this, primary care facilities must employ health professionals, the most qualified experts in the field of physical activity.

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## REFERENCES

1. Elmas L., Yüceant M., Ünlü H., Bahadır Z.(2021).Üniversite Öğrencilerinin Fiziksel Aktivite Düzeyleri ile Psikolojik İyi Oluş Durumları Arasındaki İlişkinin İncelenmesi.*Sportive*,4(1);1-17
2. World Health Organization. (2016). *Physical activity strategy for the WHO European Region (Issue 119)*. World Health Organization.
3. Hegde, B. M. (2018). Health benefits of exercise. *Kuwait Medical Journal*, 50(2); 143–145. <https://doi.org/10.1249/01.mss.0000477455.85942.2f>
4. Pescatello, L. S., MacDonald, H. V., Lamberti, L., & Johnson, B. T. (2015). Exercise for hypertension: A prescription update integrating existing recommendations with emerging research. *Current Hypertension Reports*, 17(11), 87. <https://doi.org/10.1007/s11906-015-0600-y>
5. Ha, A. S., Ng, J. Y. Y., Lonsdale, C., Lubans, D. R., & Ng, F. F. (2019). Promoting physical activity in children through family-based intervention: Protocol of the “Active 1 + FUN” randomized controlled trial. *BMC Public Health*, 19(1), 218. <https://doi.org/10.1186/s12889-019-6537-3>
6. Cengiz, Ş. Ş., & Delen, B. (2019). Gençlerde fiziksel aktivite düzeyi. *Uluslararası Güncel Eğitim Araştırmaları Dergisi*, 5(2), 110–122.
7. Ölçücü, B., Vatanserver, Ş., Özcan, G., Çelik, A., & Paktaş, Y. (2015). Üniversite öğrencilerinde fiziksel aktivite düzeyi ile depresyon ve anksiyete ilişkisi. *Uluslararası Türk Eğitim Bilimleri Dergisi*, 4, 294–303. <https://dergipark.org.tr/en/pub/goputeb/issue/34518/381844>
8. Sarıkaya, M., Polat, M., Seydel, G. Ş., & Eryılmaz, S. G. K. (2018). Yaşlı bireylerde fiziksel aktivite düzeyinin yaşam kalitesi üzerine etkisinin incelenmesi. *Beden Eğitimi ve Spor Bilimleri Dergisi*, 12(2), 81–89. <https://dergipark.org.tr/tr/pub/bsd/issue/53467/711631>
9. Tural, E. (2020). COVID-19 pandemi dönemi ev karantinasında fiziksel aktivite düzeyinin yaşam kalitesine etkisi. *Van Sağlık Bilimleri Dergisi*, COVID-19 Özel Sayı, 10–18. <https://dergipark.org.tr/tr/pub/vansaglik/issue/56982/738909>
10. Yazıcıoğlu, Y., & Erdoğan, S. (2014). *SPSS uygulamalı bilimsel araştırma yöntemleri*. Retrieved March 14, 2023, from <https://www.nadirkitap.com/spss-uygulamali-bilimsel-arastirma-yontemleri-.html>



11. Craig, C. L., Marshall, A. L., Sjöström, M., et al. (2003). International physical activity questionnaire: 12-country reliability and validity. *Medicine and Science in Sports and Exercise*, 35(8), 1381–1395. <https://doi.org/10.1249/01.MSS.0000078924.61453.FB>
12. Öztürk, M. (2005). *Üniversitede eğitim-öğretim gören öğrencilerde uluslararası fiziksel aktivite anketinin geçerliliği ve güvenilirliği ve fiziksel aktivite düzeylerinin belirlenmesi* [Yayımlanmamış yüksek lisans tezi]. Hacettepe Üniversitesi.
13. Koçyiğit, H., Aydemir, Ö., Ölmez, N., & Memiş, A. (1999). Kısa Form-36 (KF-36)'nın Türkçe versiyonunun güvenilirliği ve geçerliliği. *İlaç ve Tedavi Dergisi*, 12, 102–106.
14. Ware, J. E., Jr. (2000). SF-36 health survey update. *Spine (Phila Pa 1976)*, 25(24), 3130–3139. <https://doi.org/10.1097/00007632-200012150-00008>
15. Cobos-Rincón, I., Santolalla-Arnedo, I., Juárez-Vela, R., & Adam Jerue, B. (2022). Predictors of the quality of life of university students: A cross-sectional study. *International Journal of Environmental Research and Public Health*, 19(19), 12043. <https://doi.org/10.3390/ijerph191912043>
16. Barone Gibbs, B., Conroy, M., Huber, K., et al. (2021). Effect of reducing sedentary behavior on blood pressure (RESET BP): Rationale, design, and methods. *Contemporary Clinical Trials*. <https://doi.org/10.1016/j.cct.2021.106428>
17. Selçuk-Tosun, A., & Zincir, H. (2019). The effect of a transtheoretical model-based motivational interview on self-efficacy, metabolic control, and health behavior in adults with type 2 diabetes mellitus: A randomized controlled trial. *International Journal of Nursing Practice*, 25(4). <https://doi.org/10.1111/ijn.12742>
18. Tuvemo Johnson, S., Anens, E., Johansson, A., & Hellström, K. (2021). The Otago exercise program with or without motivational interviewing for community-dwelling older adults: A 12-month follow-up of a randomized, controlled trial. *Journal of Applied Gerontology*, 40(3), 289–299. <https://doi.org/10.1177/0733464820902652>
19. Can, H. B., Örs, F. B., & Keklicek, H. (2022). Comparison of factors restricting participation in leisure-time physical activities in university students according to gender and regular physical activity habit. *JETR*, 9(1), 59–67.
20. Fishleder, S., Petrescu-Prahova, M., Harris, J., et al. (2018). Bridging the gap after physical therapy: Clinical-community linkages with older adult physical activity programs. *Innovation in Aging*, 2(1). <https://doi.org/10.1093/geroni/igy006>
21. John, O., Moriah, B., Kathleen, W., et al. (2018). Primary care providers' physical activity counseling and referral practices and barriers for cardiovascular disease prevention. *Preventive Medicine*, 108, 115–122.
22. World Health Organization. (2018). *Global action plan on physical activity 2018–2030: More active people for a healthier world*. World Health Organization.
23. Wattanapisit, A., & Wongsiri, S. (2021). Overview of physical activity counseling in primary care. *Korean Journal of Family Medicine*, 42(4), 260–268. <https://doi.org/10.4082/kjfm.19.0113>