

Examining the physical activity levels of academic personnel

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Abstract. *Study Objectives:* In this study, it was aimed to examine the physical activity level of academic personnel according to age and sex variables. *Methods:* A total of 294 academic personnel (84 female and 210 male) working at Burdur Mehmet Akif Ersoy University participated in the study. International Physical Activity Questionnaire (IPAQ) short form was used to determine the physical activity level of the academic personnel participating in the study. In the analysis of the obtained data, One Way ANOVA, Independent t test, and Chi-Square analyzes were used in the SPSS 22.0 software. *Result:* It has been determined that the physical activity level of academic personnel was low. When discussed based on demographic variables, it has been determined that the physical activity level of academic personnel showed a statistically significant difference according to age group variable ($p < 0.05$). On the other hand, it was observed that the physical activity level of academic personnel did not show a statistically significant difference according to the sex variable ($p > 0.05$). *Conclusion:* It can be said that the physical activity level of academic personnel is low and that the physical activity level of academic personnel tends to decrease as age increases.

Key words: Academic personnel, physical activity level, health

Introduction

Physical activity means the body movements produced by the skeletal muscles and ensure more energy is consumed in addition to the energy consumed in the resting phase of living beings. As can be deduced from this definition, the most striking aspect of physical activity is generation of energy in the person upon muscle contraction. In these terms, not only sports and exercise, but also work-related activities, leisure time activities, and daily life activities which cause energy consumption are considered as physical activity (1). As a concept, physical activity is expressed as “bodily movements that prepare the ground for more energy to be consumed by contraction of skeletal muscles compared to resting state”. The term exercise, which is mostly used to correspond to the same meaning as the concept of physical activity, is defined as a sub-dimension of physical activity. In this context, exercise is structured, planned physical activities aimed at

improving the factors of physical fitness and physical characteristics (2). As can be deduced from the definition given above and the information in the literature, many activities from sports competitions to hobbies, from exercise activities to daily life activities are considered within the scope of the concept of physical activity. Activities that do not significantly increase energy consumption during the resting process are called sedentary approaches. In this sense, regular daily activities such as computer use, lying down, watching TV, sitting, or sleeping are considered within the scope of sedentary behaviors (3).

The physical looks of people who have a physically active life show certain differences compared to their peers in the same age group. Unlike adults, younger people can be involved in heavy physical activities in line with their needs and ages. Although there are certain differences in terms of participating in physical activity, the benefits gained from engaging in this activity are similar. In this context, individuals do not

have to engage in heavier physical activities to achieve a significant improvement (1).

Physical benefits are among the main benefits of physical activity. Certain functional and physical health problems may emerge in individuals as age increases. Osteoporosis is one of the most common physical health problems, especially as a result of advancing age (4). A high level of physical activity helps protect from osteoporosis. It is stated that participation in physical activities is effective in the process of combating osteoporosis and that regular participation in physical activities increases bone mineral density (5). Another case that threatens physical health is obesity. Irregularities in daily energy consumption and insufficient physical activity are the underlying causes of obesity (6). Regular physical activity is considered an effective method in the fight against obesity (7). Therefore, in our age, individuals tend to engage in physical activity to cope with obesity and not to regain the weight they have lost (8,9). In addition, it has been reported that participation in physical activity provides effective results in the improvement of motor skills such as strength, speed, and endurance, which are closely related to physical capacity (10-12).

Participation in physical activity has an important place in the protection and improvement of psychological health. Studies conducted in the literature indicate that participation in physical activity helps to protect from psychological health problems commonly seen in today's societies such as stress, depression, and anxiety (13-16), whereas low physical activity level prepares the foundation for certain psychological health problems (17). Participation in physical activity also supports social development (18). Being involved in physical activities is considered an important tool in the socialization process particularly for younger people. Almost every child socializes by playing games and sports activities. Again, when considered in terms of children, sports activities develop the skill to be a good friend, a good citizen, and a good student (19).

The development of technological products that have contributed convenience to human life since the industrial revolution and individuals' having a mechanized lifestyle have brought many health problems arising from a sedentary lifestyle. Today, it is stated that people in certain professions (such as drivers, desk job

workers) do not perform any physical activity during the day. A significant part of the health problems arising from a sedentary lifestyle are expressed as diseases that were not common in human life in the past and mainly caused by inactivity. Therefore, health problems arising from a sedentary lifestyle are described as "diseases of our age" (20). At this point, participation in physical activity is considered a factor that protects and improves the general health level. Research results on this subject also reveal that participation in physical activity especially increases the health-related quality of life (21,22). According to Vural et al. (2010), living with an improved quality of life has become an issue that attracts attention as much as long life. Nutrition and physical activity are the main factors in aging healthily and minimizing the health risks that may arise due to age with different methods (23).

When the information in the literature is reviewed, it is seen that a sedentary lifestyle threatens public health, whereas a high level of physical activity contributes to the reduction of health problems caused by a sedentary lifestyle. At this point, examining the variables associated with people's physical activity levels has an important place in reducing sedentary lifestyle. In this study conducted within this scope, it was aimed to examine the physical activity level of academic personnel according to age and sex variables.

Materials and Methods

In this part of the research, information about the research model, population and sample group of the research, data collection tool, and the methods used in the data analysis process are included.

Research Model

In this study, the "Scanning Model", which is widely used in the field of sports sciences and in which the characteristics of participants are discussed based on certain demographic variables, was used, and the physical activity level of academic personnel participating in the study was examined based on age and sex variables.

Population and Sampling

Academic personnel of Burdur Mehmet Akif Ersoy University constitute the population of this research. The sample group of the study consisted of a total of 294 academic personnel (84 female and 210 male) working under the university. Findings regarding the demographic characteristics of the academic personnel constituting the sample group of the study are presented in Table 1.

When the table is reviewed, it can be seen that 31.3% of the academic staff participating in the study are in the 23-26 age group, 24.5% are in the 27-31 age group, 24.5% are in the 32-36 age group, 19.7% are in the 36+ age group, 28.6% of them are female and 71.4% are male. 6.8% of the participants are underweight, 34.7% have normal weight, 49.7% are at pre-obesity level, 8.8% are obese, 29.9% are inactive, 44.9% are minimally active, and 25.2% are sufficiently active.

Collection of Data

The personal information form prepared by the researcher was used to collect information on the age and sex of the academic personnel participating in the study. International Physical Activity Questionnaire

(IPAQ) short form was used to determine the physical activity level of the academic personnel participating in the study. The form consists of seven questions and four separate sections. The short form can be applied to individuals between the ages of 18-69. Items in the form consist of questions about physical activities performed for at least 10 minutes in the last seven days. The questionnaire determines how many days in the last week and how long for each day heavy physical activities, moderate intensity physical activities, and walking were performed. The last item in the form determines the time spent without moving (sitting, lying down, etc.) daily. The MET method is used to determine the level of physical activity in the light of the data obtained from the form. It is expressed as 1 MET=3.5 ml/kg/min. At resting state, each person consumes 3.5 ml of oxygen per kg per minute. In IPAQ, it is accepted that 8.0 MET is consumed during heavy physical activity, 4.0 MET during moderate physical activity, and 3.3 MET during walking. The total amount of MET consumed during these three different physical activities is calculated by determining how many days and for how long each person does heavy physical activity, moderate physical activity, and walking. Information on physical activity levels according to MET scores is presented in Table 2.

Statistical Analyses

SPSS 22.0 software was used in the analysis of the data obtained within the scope of the research. One-way ANOVA analysis was used to compare the weekly MET scores of the academic personnel participating in the study by age groups, while Independent t-test was used to compare them based on their sex. In the comparison of physical activity levels according to age groups and sex, Chi-Square analysis was used with crosstabs.

Results

The mean height of the academic personnel participating in the study was determined as 172.57 ± 7.762 cm, mean body weight was 75.69 ± 15.40 kg, mean BMI value was 25.35 ± 4.011 kg/m², and mean weekly MET value was 2225.53 ± 2077.222 MET-min/week (Table 3).

Table 1. Distribution of academic personnel participating in the study in terms of demographic information, BMI, and IPAQ physical activity levels

Variable	Sub-variables	f	%
Age	23-26 years	92	31.3
	27-31 years	72	24.5
	32-36 years	72	24.5
	36+ years	58	19.7
Sex	Female	84	28.6
	Male	210	71.4
BMI	Underweight	20	6.8
	Normal weight	102	34.7
	Pre-obesity	146	49.7
	Obese	26	8.8
Physical activity level	Inactive	88	29.9
	Minimally active	132	44.9
	Sufficiently active	74	25.2

Table 2. Physical activity level according to MET score

Physical Activity Type	MET Score	Minutes Per Day	Week / Day	Total
Walking	3.3	30	5	495 MET/Minute/Week
Moderate Physical Activity	4.0	40	4	640 MET/Minute/Week
Heavy Physical Activity	8.0	30	5	720 MET/Minute/Week
Total				1855 MET/Minute/Week

Physical activity level is determined in 3 categories according to Table 2.

Category I: Inactive: <600 MET-Minute/Week

Category II: Minimally Active: >600-3000 MET- Minute/Week

Category: Highly active: <3000 MET- Minute/Week (24).

Table 3. Descriptive statistics on height, body weight, BMI, and weekly MET levels of academic personnel participating in the study

Variables	N		SD
Height	294	172.57	7.76
Body weight	294	75.69	15.40
BMI	294	25.35	4.01
Weekly MET	294	2225.53	2077.22

When the table is reviewed, it is seen that the weekly MET scores of the academic personnel participating in the research do not differ statistically significantly based on sex ($p>0.05$) and that the weekly MET scores differ statistically significantly based on age group ($p<0.05$). According to post-hoc Tukey test results conducted based on age groups, it was found that weekly MET scores of participants in the 23-26 age group were statistically significantly higher than the academic personnel in 32-36 and 36+ age groups, and also the participants in the 27-31 age group had statistically significantly higher weekly MET scores compared to academic personnel in 36+ age group ($p<0.05$; Table 4).

When the table is reviewed, it is seen that the physical activity levels of the academic personnel participating in the research do not differ statistically significantly based on sex ($p>0.05$), and that physical activity levels differ statistically significantly based on age group ($p<0.05$). It is observed that academic personnel in 23-26 and 27-31 age groups are more active than those in the 32-36 and 36+ age groups (Table 5).

Discussion and conclusion

When the findings regarding the physical activity levels of academic personnel participating in this study were evaluated, it has been found that 29.9%

Table 4. Comparison of weekly MET levels of academic personnel participating in the study based on age and sex

Variable	Sub-variables	N		SD	p
Age group	23-26 years	92	2853.24	2145.58	.00
	27-31 years	72	2374.69	1877.26	
	32-36 years	72	1924.17	2298.48	
	36+ years	58	1418.79	1555.30	
Sex	Female	84	2119.79	2041.76	.58
	Male	210	2267.83	2094.56	

of the academic personnel were physically inactive, 44.9% were minimally active, and 25.2% were sufficiently active. According to this result obtained, it was observed that the physical activity level of the academic personnel was moderate, and thus the personnel was not active enough. In similar studies in the literature, it has been found that the physical activity level of education personnel was low (24,25). In a study conducted with the personnel of Elâzığ Fırat University on this subject, it was aimed to examine the variables affecting the physical activity levels of faculty members, and 476 faculty members between the ages of 28-66 participated in the study. At the end of the study, it was determined that 80.5%, a significant portion of the faculty members were physically inactive. In the same study, it was found that 18.3% of the faculty members were minimally active and 1.3% were highly active (26). In a study examining the physical activity levels of academics working in different faculties, it was found that the inactivity levels of academics varied between 22.5% and 55% according to the type of faculty, and thus the physical activity level of academics was found to be low (27). In another study conducted

Table 5. Comparison of weekly MET levels of academic personnel participating in the study based on age and sex

Variable / sub-variables		Physical activity level			Total	
		Inactive	Minimally active	Sufficiently active		
Age group $\chi^2=47.699$ df=6 p=.00	23-26 years	f	10	50	32	92
		%	10.9	54.3	34.8	100.0
	27-31 years	f	14	34	24	72
		%	19.4	47.2	33.3	100.0
	32-36 years	f	32	30	10	72
		%	44.4	41.7	13.9	100.0
	36+ years	f	32	18	8	58
		%	55.2	31.0	13.8	100.0
Sex $\chi^2=3.068$ df=2 p=.21	Female	f	30	38	16	84
		%	35.7	45.2	19.0	100.0
	Male	f	58	94	58	210
		%	27.6	44.8	27.6	100.0

on employees from different occupational groups, it was found that 49% of the participants were physically moderately active, while 19% were minimally active (28). In another study conducted on individuals from different age and occupational groups and evaluated data on 20 different countries, it has been reported that although the level of physical inactivity of people varies between countries, the level of being inactive varied between 9-43% (29).

When the results obtained in the study and the study findings in the literature are evaluated, it can be seen that the physical activity level of the personnel working in the education field is low. It can be thought that the main reasons behind this are the intensive curriculum of the education personnel and them spending a long time in front of the computer for their academic studies. Findings of the study conducted on this subject also indicate that academics do not gravitate to physical activity due to their interest in academic publications and busy course load (27). At this point, it is stated in the studies in the literature that education personnel should gravitate towards programs aimed at improving the physical activity level (26). In addition, it can be thought that research data was collected during the COVID-19 process and the fact that the education personnel spend a large portion of their time at their homes due to the restrictions caused by the pandemic also paved the way for a low level of physical

activity. Findings of studies conducted on this subject in the literature show that people's physical activity levels decreased during the pandemic (30).

In this study, when considered based on sex variable, it was found that the physical activity level of academic personnel did not differ significantly according to sex. It can be thought that the underlying reason for this result is that female and male personnel have a similar life cycle, especially in business life, and they consume similar physical effort in daily life in parallel with this fact. In addition, it can be thought that the similarity of female and male academic personnel's attitudes towards physical activity and sports also paves the way for no difference between physical activity levels of groups. In a study conducted on this subject, it was reported that the attitudes of female and male academic personnel towards physical activity and sports were similar (31). In some studies in the literature, it was found that the level of physical activity among academics showed a significant difference based on sex variable (32). In a study conducted by Kalkavan et al. (2016) on this subject, it was found that female academics had a higher level of physical activity compared to male academic personnel (25). In the study conducted by Memiş and Yıldırım (2007), it was found that the physical activity level of male academic personnel was higher than female academics (33). It can be thought that the main reasons for

the inconsistency between the research findings and the results of the study in the literature are that the research was conducted on the personnel working in different universities and different departments, as well as the different levels of gravitation towards the physical activity of research groups in their leisure time.

In this study, when considered based on age group variable, it was found that the physical activity level of academic personnel differed significantly according to age group variable. According to results, it has been determined that the physical activity level of the personnel in 23-26 and 27-31 age groups are higher than the academic personnel in 32-26 and 36+ age groups. It can be thought that the reason behind this is that academic personnel adopt a more physically inactive lifestyle in daily life as their ages increase. Results of similar studies on this subject in the literature support the view that as age increases, the level of physical activity of academic personnel decreases. In a similar study conducted on academic personnel working in different faculties, it was found that the physical activity level of academic personnel in 22-30 age group was higher when compared with the academic personnel in 31-40 and 41-50 age groups, and in this context, it was reported that physical activity level of the academic personnel decreased as age increased (25). In the study conducted by Sun et al. (2013), it was stated that physical activity has a protective role in the prevention of metabolic diseases in parallel with the increase in age, whereas the physical activity level of adults is low (34).

As a result, the physical activity level of academic personnel was found low as a result of this study, and this result was found to be in line with the literature. It was determined that the physical activity levels of female and male academic personnel were similar, and the main reason for this was thought to be the similarity between the workloads and attitudes towards the physical activity of the personnel in both groups. In addition, considering the age group variable, the physical activity level of academic personnel decreased as the age group increased. It is thought that this result is due to the decrease in the physical and functional capacity of academic personnel as they get older, and their adoption of a sedentary lifestyle in parallel to this. As it is known, a high physical activity level contributes to the protection and improvement of the

individual's physical and functional characteristics as well as psychological health. In this context, it can be said that a high level of physical activity of academic personnel will affect their professional life positively. To increase the physical activity level of academic personnel, works can be carried out to increase the knowledge and awareness of academics on this issue.

References

1. Taşkınöz C. 9-11 Yaş ilköğretim Öğrencilerinin Fiziksel Aktivite Düzeyinin Yaşa Ve Cinsiyete Göre Araştırılması. Yüksek Lisans Tezi, Muğla Üniversitesi Sosyal Bilimler Enstitüsü, Muğla; 2020.
2. Özer K. Physical fitness. Nobel Yayın Dağıtım, Ankara 2006.
3. Karabıçak GÖ. Assessment of the effects of physical activity on posture, pain, and anxiety in adolescents living in Ayas city. Hacettepe University, Institute of Health Sciences, Prosthetics Orthotics Biomechanics Ph.D. Thesis, Ankara 2014.
4. Hannan MT, Felson DT, Dawson-Hughes B, Tucker KL, Cupples LA, Wilson PWF, Kiel DP. Risk factors for longitudinal bone loss in elderly men and women: the Framingham Osteoporosis Study. *Journal of Bone and Mineral Research* 2000; 4: 710-720.
5. Sritara C, Thakkinian A, Ongphiphadhanakul B, Pornsuriyasak P, Warodomwicht D, Akrawichien T, Vathesatogkit P, Sritara P. Work-and travel-related physical activity and alcohol consumption: relationship with bone mineral density and calcaneal quantitative ultrasonometry. *Journal of Clinical Densitometry*; 2015; 1: 37-43.
6. Church TS, Thomas DM, Tudor-Locke C, Katzmarzyk PT, Earnest CP, Rodarte RQ, Martin CK, Blair SN, Bouchard, C. Trends over 5 decades in US occupation-related physical activity and their associations with obesity. *Plos One* 2011; 5: e19657.
7. Gurel S, İnan G, Childhood Obesity- Diagnostic Methods, Prevalence and Etiology. *Journal of Adnan Menderes University Medical Faculty* 2001; 3: 39-46.
8. Allender S, Cowburn G, Foster C, Understanding participation in sport and physical activity among children and adults: a review of qualitative studies. *Health Education Research* 2006; 6: 826-835.
9. Jakicic John M, Otto Amy D, Physical activity considerations for the treatment and prevention of obesity. *The American Journal of Clinical Nutrition* 2005; 1: 226-229.
10. Heyn P, Abreu BC, Ottenbacher KJ, The effects of exercise training on elderly persons with cognitive impairment and dementia: a meta-analysis. *Archives of physical medicine and rehabilitation* 2004; 10: 1694-1704.
11. Graf C, Koch B, Kretschmann-Kandel E, Falkowski G, Christ H, Coburger S, Dordel, S. Correlation between BMI, leisure habits and motor abilities in childhood

- (CHILT-project). *International Journal of Obesity* 2004; 1: 22-26.
12. Li Y, Devault CN, Van Oteghen S, Effects of extended Tai Chi intervention on balance and selected motor functions of the elderly. *The American Journal of Chinese Medicine* 2007; 03: 383-391.
 13. Hassmen P, Koivula N, Uutela A, Physical exercise and psychological well-being: a population study in Finland. *Preventive Medicine*, 2000; 1: 17-25.
 14. Miller KE, Hoffman, JH. Mental well-being and sport-related identities in college students. *Sociology of Sport Journal* 2009; 2: 335-356.
 15. Ströhle A, Physical activity, exercise, depression and anxiety disorders. *Journal of Neural Transmission* 2009; 6: 777-784.
 16. Penedo FJ, Dahn JR. Exercise and well-being: a review of mental and physical health benefits associated with physical activity. *Current Opinion in Psychiatry* 2005; 2: 189-193.
 17. Kocamaz M, Eroğlu M. The examination of the stress levels of active and non-active academicians in their leisure times according to sociodemographic variables. *Journal of Physical Education and Sport Sciences* 2021; 1: 9-24.
 18. Keskin Ö. Effects of physical education and participation to sports on social development in children. *Journal of International Multidisciplinary Academic Researches* 2014; 1: 1-6.
 19. Küçük V, Koç H. Relationship between human and sports in psychosocial development process. *Dumlupınar University Journal of Social Sciences* 2004; 9: 1-11.
 20. Hekim M. Health problems that sedentary life style, which is a global problem, occurs and importance of physical activity in. II. *International Davraz Congress* 2014, 2363-2371.
 21. Vuillemin A, Boini S, Bertrais S, Tessier S, Oppert J. M, Herberg S, Briançon, S, Leisure time physical activity and health-related quality of life. *Preventive medicine* 2005; 2: 562-569.
 22. Bize R, Johnson JA, Plotnikoff RC. Physical activity level and health-related quality of life in the general adult population: a systematic review. *Preventive Medicine* 2007; 6: 401-415.
 23. Vural Ö, Eler S, Güzel NA. The relation of physical activity level and life quality at sedentary profession. *Sportmetre Physical Education and Sport Sciences Journal* 2010; 2: 69-75.
 24. Arabacı R, Çankaya C. Beden Eğitimi Öğretmenlerinin Fiziksel Aktivite Düzeylerinin Araştırılması. *Lournal of Uludağ University Faculty of Education* 2007; 1: 1-15.
 25. Kalkavan A, Özkara AB, Alemdağ C, Çavdar S. Investigation of the Physical Activity Participation Levels and Obesity Status of Academic Staff, *International Journal of Science Culture and Sport (Intjcs)* 2016; 1: 329-339.
 26. Karadağ M, Çınar V, Öner S. Pecifying the levels of physical activity of the academic staff at firat university. *Electronic Turkish Studies* 2018; 11: 763-772.
 27. Özdöl Y, Özdoğan EÇ, Özer K, Physical Activity Level in Different Occupational Group. *Eurasian Research in Sport Science* 2018; 1: 44-56.
 28. Uluöz E, Yılmaz CY, Dinç, ZF. An Investigation of Participation Status of Academicians in Different Faculties in Physical Activity. *International Journal of Cultural and Social Studies (IntJCSS)* 2017; 2: 326-336.
 29. Bauman A, Bull F, Chey T, Craig CL, Ainsworth BE, Sallis JF, Pratt, M. The international prevalence study on physical activity: results from 20 countries. *International Journal of Behavioral Nutrition and Physical Activity* 2009; 1: 1-11.
 30. Tural E. The Effect of Physical Activity Level on the Quality of Life in Covid-19 Pandemic Period Home Quarantine. *Van Health Sciences* 2020; Special Issue: 10-18.
 31. Karahuseyinoglu, MF. Investigation of the attitudes of academicians towards sports. *Asian Journal of Education and Training* 2019; 4: 589-594.
 32. Eryiğit Ö, Ay SM. An Investigation of physical activity levels of academicians in sport sciences—the example of marmara university and istanbul gelişim university, turkey. *European Journal of Physical Education and Sport Science* 2020; 10: 1-12.
 33. Memiş UA, Yıldırım İ. Determining the physical activity level of academicians and examining it related to some variables. *Gazi Journal of Physical Education and Sport Sciences* 2007; 3: 11-24.
 34. Sun F, Norman IJ, While AE. Physical activity in older people: a systematic review. *BMC public health* 2013; 1:1-17.

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