International
Journal of Human Sciences
ISSN:2458-9489

Volume 21 Issue 4 Year: 2024

Physical activity level and quality of life of university employees

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Abstract

The study aims to evaluate the physical activity and quality of life levels of university academic and administrative staff. The universe of the study consisted of 912 personnel, 577 academic and 335 administrative, working at Alanya Alaaddin Keykubat University. The study was planned with the general screening method, and the International Physical Activity Assessment Questionnaire (IPAQ) was used to determine the physical activity levels of university personnel and the short forms of the quality of life assessment questionnaire (SF-36) were used to determine their quality of life. The surveys were applied online, and SPSS 25.0 statistical program was used in the statistical analysis of the obtained data. Percentage, frequency, chi-square, ANOVA, MANOVA, and post hoc tests were used in the analysis of the data and the significance level was taken as ($p<.05$). It was observed that 73% of the university academic and administrative staff had postgraduate education, 72% were married and 74% had a nuclear family structure. It was determined that the physical activity levels of academic and administrative staff were not good, and they were not active. However, it was determined that men were more active than women and singles were more active than married. It was observed that only 47 (15%) of the academic and administrative staff had sufficient activity levels and there was no statistically significant difference between the genders ($p>0.05$). In the comparisons between the groups, a significant difference was observed in the social and mental dimensions in favor of the academic staff ($p<0.05$). On the other hand, no significant difference was observed in the physical, general health, social, and mental dimensions ($p>0.05$). It was determined that the physical activity levels of the academic and administrative staff were not good, men were more active than women and the quality of life of the academic staff was better.

Keywords: Academic; Administrative Staff; Physical Activity; Quality of Life.

1. Introduction

People start to grow and develop from birth. When they mature, they look for ways to be healthy and live long. However, in the face of rapidly developing technology, their intensity in daily activities decreases. Thus, the number of sedentary days increases in the long term and the quality of life that negatively affects human health decreases. In addition, sedentary lifestyles, non-ergonomic working conditions, and overwork due to stress in business life can negatively affect the physical,

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Submitted: 23/08/2024 Published: 01/12/2024

Nalbant, Ö. (2024). Physical activity level and quality of life of university employees *Journal of Human Sciences*, *21*(4), 359-368. doi:10.14687/jhs.v21i4.6495

mental, and social health of individuals. This situation also leads to a decrease in physical activity and vital qualities of individuals (Özer & Baltacı, 2008).

Physical activity can be defined as body movements that increase the energy expended (Vural et al, 2010). Physical activity is an activity of the skeletal muscle system and requires energy consumption. Even daily activities such as walking, cycling, climbing stairs, housework, leisure time activities, gardening, and car washing can replace physical activity (Hargreaves & Spriet, 2020).

Physical activity in daily life is beneficial for people of all ages. Regular physical activities are critical for the healthy development of children and young people, the protection of adults from various chronic diseases supporting their treatment, and staying active in old age. A physically active lifestyle also contributes greatly to the improvement of quality of life (Bayrakçı, 2008).

Developing technology and modernization efforts have brought various conveniences to our lives. Through these conveniences, people's physical activity levels are quite low and at the same time they move less. In addition, the increase in urbanization and the inadequacy of the areas allocated for physical activity support the sedentary lifestyle. Therefore, the level of energy consumption in society is also decreasing. In addition, lack of sufficient knowledge about physical activity, insufficient awareness of its importance for health, and lack of exercise are important factors that can increase the incidence of chronic diseases such as obesity, osteoporosis, heart-related diseases, blood pressure, and diabetes (Ginis et al., 2021).

Physical activity has many benefits. Some of them are maintaining and increasing muscle strength, gaining the habit of movement, increasing tolerance to physical activity, increasing physical performance, increasing reaction time, proper posture, increasing resistance to fatigue, decreasing osteoporosis, increasing the quality of oxygen consumed, etc. In addition, effects such as decreasing the number of beats per minute of the heart, regulating the rhythm of the heart, decreasing blood cholesterol and triglyceride levels, decreasing the risk of heart attack, increasing breathing capacity, controlling blood sugar, preventing weight gain, reducing the risk of early dementia and forgetfulness are also known. In addition, psychologically, it improves life tolerance, feeling good, being happy, improving self-confidence, improving communication skills, positive thinking, and coping with stress (Sluijs et al., 2021).

The source of energy, which is also used in the production of ATP in the muscle during exercise, is carbohydrates, fats, and proteins (Jackson and Baker 1986; Açıkada and Ergen, 1990). Metabolism is the totality of the chemical events in which the nutrients taken into the body are broken down in the cell to produce energy and become useful for movement in the body. Active use of metabolism is very important for body weight. The functionality of metabolism can also be provided by physical activity (ACSM, 1998).

The concept of Metabolic Equivalent (Metabolic Equivalent) is used to express the oxygen consumed during physical activity, briefly expressed as "MET" and the MET value is also used in the classification of activity intensity. According to the American College of Sports Medicine (ACSM), < 3 MET indicates mild, 3-6 MET indicates moderate and > 6 MET indicates high-intensity activity (Pate et al., 1995).

In the literature, quality of life in the contemporary sense is said to be related to health (Akyüz, 2006). The term quality of life, which has also been the subject of philosophy, was also used in the mean of having a high level of virtue and beauty among people living in the Middle Ages (Tekkanat, 2008). The World Health Organisation (WHO) also defines quality of life as the position perceptions of individuals about their goals, expectations, interests, and living standards in past values (WHO, 2020).

While unmet needs, inadequate self-care and daily life, constant fatigue, anxiety about the future, and acute/chronic health problems reduce the quality of life, economic and social security, safe life, comfort, active life, close and positive relationships, dignity, ability to express, functional competence, unique individual perception and peaceful environment are the factors that increase the quality of life (Savcı et al., 2006). Literature studies show that physical activity is significantly related to the quality of life. For example, being physically active regularly increases the quality of life by

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improving mental health and physical performance (Tessier et al., 2007). In recent years, research and guidelines aimed at encouraging physical activity, especially in support of the WHO's efforts to improve the quality of life, have attracted attention (Tekkanat, 2008). In the literature review, studies on quality of life in people with various health problems (Tezvaran, 2010; Yancar, 2005), performance and quality of life of office workers (Irmak, 2011), differences in physical activity and quality of life between young men and women (Genç et al., 2011) and the relationship between activity and quality of life in those who have to work at a desk (Vural, 2010) stand out. In this context, it is also very important whether academic and administrative personnel working in a university environment are active in their workplace and private lives and how their quality of life is. This situation will be reflected in both their family structure and job performance. However, it is seen that very little research has been done on university employees. The study must provide information that will increase the living standards of university personnel. In this way, measures can be taken to increase the standards. Therefore, it is important to evaluate the relationship between physical activity and the quality of life of university employees in terms of contributing to this area.

2. Method

2.1. Population and sample selection

The population of the study consisted of 577 academic and 335 administrative staff working at Alanya Alaaddin Keykubat University, totaling 912 staff, and 312 volunteer staff who agreed to fill in the questionnaires participated in the study.

2.2. Type of study

The study was planned with the general screening method, and the International Physical Activity Assessment Questionnaire (IPAQ) was used to determine the physical activity levels of university personnel and the short forms of the quality of life assessment questionnaire (SF-36) were used to determine their quality of life.

2.3. Data collection

2.3.1. Data collection method

Data were collected using questionnaires. A personal information form was created for participants and their families. In addition, short forms of the International Physical Activity Questionnaire (IPAQ) and Quality of Life (SF-36) scales were used. Questionnaires were prepared online and sent to university staff.

2.3.2. Data collection tools

2.3.2.1. International Physical Activity Assessment Questionnaire

This questionnaire was designed to assess the physical activity levels of people aged 15-65 years (Craig et al. 2003). The scale can be applied to different cultures and environments (Tekkanat, 2008) and its validity has been tested in Turkey (Karaca and Turnagöl 2007). The scale consists of four sections and a total of seven questions about activities lasting at least 10 minutes in the last 7 days. This scale was used to determine how much time per day during the past week was spent being physically vigorously active, moderately active, and walking. The last question assessed the time spent each day not moving (e.g. sitting or lying down). To measure physical activity levels, metabolic value was calculated and assessed as 1 MET = 3.5 ml/kg/min. It was assumed to consume 3.5 ml of oxygen per kilogram per minute at rest. Physically vigorous activities were considered as 8.0 METs, moderate-intensity activities as 4.0 METs, and walking as 3.3 METs. The total number of METs spent on these three different physical activities was calculated by determining how active each staff member was per week. Activity level was evaluated in three categories as <600 MET min/week for inactive, >600- 3000 MET-min/week. for minimally active, and <3000 MET-min/week. for active (Arabacı and Çankaya 2007).

2.3.2.2 SF-36 Quality of Life Assessment Questionnaire

It consists of 36 items to increase psychometric properties and scope (Aksu, 2008; Aksungur, 2009). It is a valid scale used to assess the quality of life, although not specific to age, disease, or treatment group. This includes general health concepts. Koçyiğit et al. (1999) conducted

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a study on its validity and reliability in Turkey (Aydemir, 1999). This scale consists of sections on physical function, the role of the body, pain in the body, health in general, and the role of social and emotional functioning. Ratings are based on a 100-point SF-36 scale with scores ranging from 0-100 for each individual. A high score on this scale indicates good health and a low score indicates poor health (Vural et al. 2010).

2.3.2.3.Personal Information Form

With this form, information about the socio-demographic characteristics of the volunteers was tried to be obtained by asking questions about whether they were married, whether they were a nuclear family and their educational status.

2.3.2.4. Data collection time

The study was conducted between October 2021 and March 2022 at Alanya Alaaddin Keykubat University.

2.4. Limitations of the study

This study is limited to the academic and administrative staff working at Alanya Alaaddin Keykubat University.

2.5. Research ethics

This study was conducted following the Declaration of Helsinki and was approved by the "Alanya Alaaddin Keykubat University Social and Human Sciences Field Scientific Research and Publication Ethics Committee (08.06.2021 dated and 05/02 numbered decision). Each participant was fully informed about the research protocol and the aims of the study were explained to them. Each participant accepted the informed consent form. Participation was voluntary and the participants' information was kept confidential.

2.6. Evaluation of data

SPSS 25.0 program was used in the statistics of the data and significance was taken as $p<.05$. For statistics, ANOVA, MANOVA, and post hoc tests, chi-square, percentage, and frequency were performed.

3. Findings

The findings obtained by evaluating the scales in which the university staff participated are given below.

Table 1. Distribution of the personnel participating in the study according to gender

Position	Female (31.4%)	Male (68.6%)	Total (100%)
Academic Staff	66	144	210
Administrative Staff	32	70	102
Total	98	214	312

Academic Staff: Prof., Assoc., Dr.Lecturer and Research Assistants; **Administrative Staff**: general secretariat, departments and independent units

Of the volunteer staff participating in the study, 68.6% were male (144 academic and 70 administrative) and 31.4% (66 academic and 32 administrative) were female (Table 1).

Table 2. Age, height, weight, and BMI values of the personnel participating in the study

	Gender	N	X	SS
Age	Woman	(%31.4)	36.43	3.3
	Male	(%68.6)	44.66	4.2
Boy	Woman	(%31.4)	164.57	4.0
	Male	(%68.6)	181.32	5.1
Weight	Woman	(%31.4)	62.17	5.0

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	Male	(%68.6)	84.65	9.2
BKI	Woman	(%31.4)	23.48	1.8
	Male	(%68.6)	27.20	2.1

The age, height, weight, and BMI values of the academic and administrative staff participating in the study were 36.43± 3.3, 164.57±4.0, 62.17±5.0 and 23.48±1.8 for women and 44.66±4.2, 181.32±5.1, 84.65±9.2 and 27.20±2.1 for men, respectively (Table 2).

Table 3. Smoking and alcohol use by staff

	Cigarette		Alcohol	
	Frequency	%	Frequency	%
Yes	97	30.9	74	23.8
No.	215	69.1	238	76.2
Total	312	100.0	312	100,0

Of the personnel participating in the study, 30.9% smoked cigarettes and 23.8% drank alcohol (Table 3).

Table 4. Gender and position of the participants according to their educational background

		Gender		Position	
		Woman	Male	Academic	Administrative
Education	Associate degree	10(%10)	8(%4)	0	10(%10)
	License	23(%24)	35(%16)	0	74(%73)
	Postgraduate	65(%66)	171(%80)	210 (%100)	18(%17)
Total		98(%100)	214(%100)	210(%100)	102(%100)

It was observed that 228 (73%) of the individuals in academic and administrative positions participating in the study had postgraduate education (Table 4).

Table 5. Gender and positions of the participants according to their marital status

		Gender		Position	
		Woman	Male	Academic	Administrative
Marital status	Married	54	161	137	87
	Single	44	53	73	15
Total		98	214	210	102

It was seen that 224 (72%) of the individuals in academic and administrative positions who participated in the study were married (Table 5).

It was observed that 232 (74%) of the individuals in academic and administrative positions who participated in the study were in the nuclear family structure (Table 6).

It was observed that 219 of the participating personnel were of normal weight, while 21 (7%) were obese (Table 7).

It was seen that only 47 (15%) of the individuals in academic and administrative positions participating in the study had sufficient activity levels. In addition, there was no statistically significant difference between genders (X^2 =3,817 df=2 P=,074) (Table 8).

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Table 6. Positions - family structure

		Position		
		Academic	Administrative	Total
Family Structure	Nuclear family	160	72	232
	Extended family	5	8	13
	Alone	45	22	67
Total		210	102	312

Table 7. Participants' gender - BMI classification

		Position		
		Academic	Administrative	Total
BMI	Normal Overweight	168	51	219(%70)
	Overweight	32	40	72(%23)
	Obese	10	11	21(%7)
Total		210	102	312(%100)

Table 8. Participants' gender-activity level

		Gender		
		Woman	Male	Total
Physical activity level	Inactive	49	118	167(%54)
	Low activity	44	54	98(%31)
	Adequate activity	5	42	47 (%15)
Total		98	214	312(%100)

X^2 = 3,817 df=2 P=,074

Table 9. Position - physical activity

		Position		
		Academic	Administrative	Total
Physical activity level	Inactive	98	70	168
	Low activity	90	21	111
	Adequate activity	22	11	33
Total		210	102	312

X^2 = 1,862 df=2 P= ,262

It was observed that obese individuals who participated in the study were mostly inactive individuals. No significant difference was observed in the physical activity levels of all personnel (X^2 = 1,862 df=2 p= ,262; p>.05) (Table 9).

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Table 10. BMI - activity level

		BMI			
		Normal Overweight			
			Overweight	Obese	Total
Physical activity level	Inactive	152	9	7	168
	Low activity	59	50	2	111
	Adequate activity	23	9	1	33
Total		234	68	10	312

Table 11. Position-Quality of Life

Dimensions of Quality of Life	Status	N	X	Ss	sd	F	p
Physical Dimension	Academic	210	36.37	3.4			
	Administrative	102	33.60	4.1	1-310	1.134	0.27
General Health Dimension	Academic	210	27.50	4.2			
	Administrative	102	25.42	4.1	1-310	3.564	0.05
Social Dimension	Academic	210	24.30	4.3			
	Administrative	102	22.23	5.0	1-310	4.007	0.03
Mental Dimension	Academic	210	24.52	4.3			
	Administrative	102	23.41	5.3	1-310	4.876	0.01

As a result of comparing the quality of life of academic and administrative staff at the university, Wilks Lambda Λ=0,988 F(1-310)=1,322 P=0,234. In the comparison of the groups with the ANOVA test, although the difference was significant in the social (F(1- 310)=4,007 p<0,05) and mental (F(1-310)=4,876 p<0,05) academic staff, there was no significant difference in physical (F(1-310)=1,134 p>0,05) and general health (F(1- 310)=3,564 p>0,05) (Table 11).

Table 12. Quality of Life-Activity Level

Dimensions of Quality of Life	Physical Activity Level	N	*X*	*Ss*	*sd*	*F*	p
Physical Dimension	Inactive	168	35.15	3.1			
	Low activity	111	35.36	3.8	2-309	1.063	0.23
	Adequate activity	33	33.98	4.5			
General Health Dimension	Inactive	168	26.42	4.5			
	Low activity	111	26.65	3.7	2-309	1.162	0.20
	Adequate activity	33	24.73	5.2			
Social Dimension	Inactive	168	22.17	4.1			
	Low activity	111	21.24	4.3	2-309	0.882	0.26
	Adequate activity	33	22.62	4.6			
Mental Dimension	Inactive	168	26.41	4.7			
	Low activity	111	26.57	4.8	2-309	1.124	0.21
	Adequate activity	33	24.35	4.7			

In the ANOVA test in which the quality of life of the university staff was compared between groups according to their physical activity levels; it was seen that it was not significant in

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the areas of physically active (F(1-310)=1,063 p>0,05), generally healthy (F(1-310)=1,162 p>0,05), sociability (F(1-310)=,882 p>0,05) and mental dimension (F(1-310) =1,124 p>0,05) (Table 12).

4. Discussion

Considering the benefits of physical activity, individuals should be motivated to be optimally physically active for a healthier society. This is necessary to increase life expectancy and quality of life. Increasing the level of physical activity is a necessity for all segments of society, such as children, adults, and the elderly (Andrade, 2023).

In the study conducted to determine the physical activity level and quality of life of Alanya Alaaddin Keykubat University staff, it was determined that the physical activity levels of the university staff were not sufficient. However, it was determined that men were more active than women and single people were more active than married people. The fact that women spend more time at home may be a reason why they cannot spare time for physical activity. In addition, a study on physical activity levels among adults revealed that the physical activity levels of married people were lower than single people (Deniz, 2011). Interestingly, according to Kitiş and Gümüş (2015), although women's beliefs about the benefits of exercise are positive, the fact that a significant proportion of women do not participate in regular physical activity is related to their strong perception of barriers. Meanwhile, Erdoğan et al.'s study on physical activity levels among desk-based workers found that men had significantly higher physical activity levels than women when screened for obesity and other characteristics.

It was seen that only 47 (15%) of the academic and administrative staff had sufficient activity level and there was no statistically significant difference between genders (X^2 =3,817 df=2 P=,074). The fact that almost half of the staff had adequate activity levels also showed that they were adequate to protect their health. Our study is consistent with the study of Acree et al. (2006) in literature.

In the intergroup comparisons of the quality of life of the staff, it was determined that although the academic staff was better than the administrative staff in social and mental terms ($p<0.05$), their physical and general health was higher in favor of the academic staff, but there was no significant difference ($p>0.05$). In the intergroup comparison of quality of life according to activity levels, no significant difference was found in physical, general health, social, and mental dimensions ($p>0.05$). Similarly, Şanlı and Güzel (2009) concluded that female and male instructors were not active enough in all branches of their study with teachers working in various branches of national education.

Karaca (2000) investigated the physical activity levels of 475 individuals aged between 19 and 53 years and determined that they were inadequate in departments other than sports activities and moderately active in sports activities (women: 5.07 MET/hour, men: 5.70 MET/hour).

In a study in which the physical activity levels of lecturers and staff and the relationship between health problems and activity were questioned, it was determined that the level of participation of the staff in physical activity was quite low and the participants had low levels of activity even in walking (48%). In addition, it was concluded that the physical activity habits of academicians were weak and that physically inactive lecturers faced more health problems (80%) and faced the risk of occupational diseases and many diseases due to lack of physical activity (Arslan et al., 2003).

Apart from these, since there are not many studies on university personnel in literature, no comparison was possible.

Conclusion

It was observed that 73% of the individuals in the academic and administrative staff participating in the study had a postgraduate education, 72% were married and 74% were in a nuclear family structure. In addition, it was observed that 93% of the personnel participating in the study

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were of normal weight, but only 15% had sufficient activity levels. In addition, no difference was found between the genders.

As a result of comparing the quality of life of the academic and administrative staff at the university, although there was a significant difference in social and spiritual academic staff, there was no significant difference in terms of physical and general health.

This study showed us that the physical activity levels of academic and administrative staff were not good, men were more active than women and the quality of life of academic staff was better.

Recommendations

Plans can be made to increase the physical activity level of university staff and contribute to the improvement of their quality of life. For this purpose, sports and social activities can be organized within or between university departments, so that academic and administrative staff can be more active and healthier. Thus, their quality of life can be further increased.

References

Acree, S., Longfors, J., Fjeldstad, A. J., Fjeldstad, C., Schank, B., Nickel, K. J., Montgomery, P. S., & Gardner, A. W. (2006). Physical activity is related to quality of life in older adults. *Health and Quality of Life Outcomes, 4*, 34. https:// doi: 10.1186/1477-7525-4-37

Açıkada, C., & Ergen, E. (1990). *Science and sport.* Ankara: Büro - Tek Offset Printing.

Akyüz, G. (2006). Quality of life in geriatric patients. *Turkish Journal of Physical Medicine and Rehabilitation, 52*(Special Appendix A), 57-59.

Aksu, M. T. (2008). Evaluation of sociodemographic characteristics of mothers of children with chronic diseases in terms of depression, anxiety, problem solving ability and quality of life (Speciality thesis). Haydarpaşa Numune Training and Research Hospital Family Medicine, Istanbul.

Aksungur, A. (2009). Determination of job satisfaction and quality of life levels of midwives and nurses working in Dr. Zekai Tahir Burak Hospital (Master's thesis). Hacettepe University, Institute of Health Sciences, Health Management Programme, Ankara.

American College of Sports Medicine (ACSM). (1998). Position stand: Exercise and physical activity for older adults. *Medicine & Science in Sports & Exercise, 30*(6), 992-1008. https://doi.org/10.1097/00005768-199806000-00015

Andrade, C. (2023). Physical exercise and health: An overview of terminology, guidance, benefits, and risks. *Journal of Clinical Psychiatry, 84*(5). https://doi.org/10.4088/JCP.23f15099

Arabacı, R., & Çankaya, C. (2007). Investigation of physical activity levels of physical education teachers. *Journal of Faculty of Education, 1*, 1-15.

Arslan, O., Koz, M., Gür, E., & Mendeş, B. (2003). Investigation of the relationship between physical activity levels and health problems of university faculty members. *Fırat University Journal of Health Sciences, 17*(4), 249-258.

Aydemir, Ö. (1999). Quality of life measurement in consultation-liaison psychiatry: Short Form-36. *3-P/Psychiatry, Psychology, Psychopharmacology Journal, 7*, 14-22.

Bayrakcı, Y. V. (2008). *Physical activity in adults.* Ankara: Klasmat Printing.

Bayrak, M. (2011). Evaluation of depression levels of professional football players who quit sports in terms of quality of life (Doctoral thesis). Ondokuz Mayıs University, Institute of Health Sciences, Department of Physical Education and Sports, Samsun.

Craig, C. L., Marshall, A. L., Sjostrom, M., Bauman, A. E., & Booth, M. L. (2003). International physical activity questionnaire: 12-country reliability and validity. *Medicine & Science in Sports & Exercise, 35*, 1381-1395. https://doi.org/10.1249/01.MSS.0000078220.61453.FB

Deniz, M. (2011). Investigation of the relationship between physical activity level and socioeconomic status in adults (Master's thesis). Uludağ University, Institute of Health Sciences, Department of Physical Education and Sports, Bursa.

Erdoğan, M., Certel, Z., & Güvenç, A. (2011). Physical activity level in desk workers: Investigation according to obesity and other characteristics (Example of Akdeniz University Medical Faculty Hospital). *Journal of Sports Medicine, 46*, 97-107.

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

Ginis, K. A. M., van der Ploeg, H. P., Foster, C., Lai, B., McBride, C. B., & Ng, K. (2021). Participation of people living with disabilities in physical activity: A global perspective. *The Lancet, 398*(10298), 443-455. https://doi.org/10.1016/S0140-6736(21)01164-8

Hargreaves, M., & Spriet, L. L. (2020). Skeletal muscle energy metabolism during exercise. *Nature Metabolism, 2*(9), 817-828. https://doi.org/10.1038/s42255-020-0251-4

Irmak, A. (2011). The effect of exercise reminder computer programme on pain, work performance and quality of life in office workers (Master's thesis). Hacettepe University, Institute of Health Sciences, Department of Occupational Therapy, Ankara.

Jackson, A. W., & Baker, A. A. (1986). The relationship of the sit and reach test to criterion measures of hamstring and back flexibility in young females. *Research Quarterly for Exercise and Sport, 57*, 183-186.

Karaca, A. (2000). Physical activity levels of individuals working in Ankara Province. *Gazi BESBD, 5*(3), 11-19.

Karaca, A., & Turnagöl, H. H. (2007). Validity and reliability study of IPAQ questionnaire. *Hacettepe University Sports Sciences Journal, 18*(2), 68-84.

Kitiş, Y., & Gümüş, Y. (2015). Determination of 20 years and older women's physical activity levels, beliefs about physical activity and stages of behaviour. *Gümüşhane University Journal of Health Sciences, 4*(3).

Özer, D., & Baltacı, G. (2008). *Physical activity at work*. Physical activity information series. Ankara: Klasmat Printing.

Pate, R. R., Pratt, M., Blair, S. N., Haskell, W. L., Macera, A. M., Bouchard, C., ... & Young, J. (1995). Physical activity and public health: A recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine. *JAMA, 273*, 402-407. https://doi.org/10.1001/jama.273.5.402.

Savcı, S., Öztürk, M., Arıkan, H., İnal, İ. D., & Tokgözoğlu, L. (2006). Physical activity levels of university students. *Turkish Cardiology Dern. Arş., 34*, 166-172.

Şanlı, E., & Güzel, N. A. (2009). *Gazi Journal of Physical Education and Sport Sciences, XIV*(3), 23-32.

Tekkanat, Ç. (2008). Quality of life and physical activity levels in students studying in the department of teaching (Master's thesis). Pamukkale University, Institute of Health Sciences, Department of Psycho-Social Fields in Sport, Denizli.

Tessier, S., Vuillemin, A., Bertrais, S., Boini, S., Bihan, E. L., Oppert, J. M., Hercberg, S., & Guillemin, F. (2007). Association between leisure-time physical activity and health-related quality of life changes over time. *Preventive Medicine, 44*(3), 202-208. https://doi.org/10.1016/j.ypmed.2006.11.012.

Tezvaran, Z. (2010). Depression, anxiety and quality of life levels in university students with chronic back and neck pain (Speciality thesis). Yeditepe University, Faculty of Medicine, Department of Family Medicine, Istanbul.

van Sluijs, E. M., Ekelund, U., Crochemore-Silva, I., Guthold, R., Ha, A., Lubans, D., & Katzmarzyk, P. T. (2021). Physical activity behaviours in adolescence: Current evidence and opportunities for intervention. *The Lancet, 398*(10298), 429-442. https://doi.org/ 10.1016/S0140-6736(21)01259-9.

Vural, Ö., Eler, S., & Atalay Güzel, N. (2010). Relationship between physical activity level and quality of life in desk-based employees. *SPORMETRE Journal of Physical Education and Sports Sciences, 8*(2), 69-75.

Ware, J. E., Jr., & Sherbourne, C. D. (1992). The MOS 36-item short-form health survey (SF-36). I. Conceptual framework and item selection. *Medical Care, 30*, 473-483.

World Health Organization. (2020). *Air Quality Guidelines for Europe* (91).

Yancar, C. (2005). Evaluation of the effect of second axis comorbidity and personality traits on severity of addiction and quality of life in substance addicts (Speciality thesis). Bakırköy Prof. Dr. Mazhar Osman Mental Health and Neurological Diseases Training and Research Hospital, 11th Psychiatry Unit, Istanbul.