

Examination of Physical Activity Levels of Turkish Adults Living in Rural and Urban Areas

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ABSTRACT

Background: The aim of this study was to examine the physical activity levels of Turkish adults living in rural and urban areas.

Methods: In this study, a total of 376 volunteer adult individuals (195 males and 181 females) who were able to answer the questions constituted the population of the study. The short form of the International Physical Activity Questionnaire (IPAQ) was used in the study. The SPSS IBM 25.0 program was used to analyze the data. The percentage and frequency distributions of the personal information of the adult individuals were calculated. The "Kolmogorov-Smirnov" test was applied to see whether the data had normal distribution values. Standard deviations and averages were taken. When the results of the Kolmogorov-Smirnov test were analyzed, it was found that the distribution of the data was within the normal distribution range, and a T-test was used to evaluate the data according to other variables in the study.

Result: As a result, it was found that there was a significant difference between the physical activity level of men and women; there was a significant difference between smokers and non-smokers; there was a significant difference according to BMI values; there was a difference between those living in rural and urban areas only in the severe physical activity level; but there was no difference in the total activity value.

Conclusions: It was concluded that adult men do more physical activity and are more active than adult women, non-smokers have higher physical activity levels than smokers, living in rural or urban areas has no effect on the level of physical activity, those with an overweight BMI have lower physical activity levels, and physical activity levels decrease with increasing weight. It is recommended that awareness of a healthy and quality life be raised in all individuals, especially in women, smokers, and overweight adults.

Keywords: Physical activity, adults, smoking, rural and urban, BMI

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INTRODUCTION

Physical activity is defined as the movement of the body based on the cooperation of muscles and joints in daily life and the use of energy spent in this process (Oppert et al., 2023; Zyzniewska-Banaszak et al., 2021). Today, a sedentary lifestyle, challenging working conditions, and stress-induced overload are frequently seen (Freese et al., 2017). This situation causes negative effects on people's physical, mental, and social lives and negatively affects their quality of life by reducing their productivity level (de Oliveira et al., 2019; Wu et al., 2017). Physical activity, which improves the quality of life and provides individuals with an active lifestyle habit, is an important element in maintaining a healthy life (Suzuki et al., 2020).

Numerous studies on physical activity have revealed that sedentary lifestyles cause many health problems (Gaetano, 2016; Elagizi et al., 2020). It has also been found that there is a significant increase in mortality rates associated with these health problems (Cillekens et al., 2022). It is generally known that individuals who regularly participate in physical activities control their body weight (Wiklund, 2016; Colberg et al., 2016). Research shows that moderate to vigorous physical activity is effective in reducing the risk of cardiovascular diseases and preventing conditions that may result in death (Alves et al., 2016; Mattioli et al., 2020). In addition, it is accepted that physical activity has an important role in the prevention, treatment, and rehabilitation processes of osteoporosis and fractures (Wang et al., 2022). The Global Strategy on Diet, Physical Activity, and Health published by the World Health Organization (WHO) recommends that adults engage in adequate levels of physical activity throughout their lives (WHO, 2016). Moderate-intensity physical activity performed regularly by adults at least 3-5 days a week for at least 30 minutes a day is thought to have positive effects on the prevention and treatment of many diseases (Singh et al., 2020; Thornton et al., 2016). This strategy emphasizes the importance of physical activity for people to lead a healthy life and prevent diseases (Carbone et al., 2019; Salvo et al., 2021). Studies have shown that the proportion of physically active individuals in society is low, and especially women have lower activity levels than men (Puccinelli et al., 2021; Edwards and Sackett, 2016). Studies conducted according to the International Physical Activity Survey (IPSA) grouping have revealed that Turkey has the lowest level of physical activity compared to other European countries (Hulteen et al., 2017; Murtagh et al., 2021). In these studies, it was concluded that 54.5% of the population had a low level of physical activity (23.1% did not do any physical activity) and 10.5% had a low intensity level of physical activity (39.4% did not do high intensity physical activity) (Klepac Pogrmilovic et al., 2020). It has been shown that doing enough physical activity has positive effects on protecting health, treating diseases, adapting to social life, feeling psychologically well, and improving quality of life. However, the decrease in physical activity levels in adults is a threat to the future. For this reason, physical activity habits should be acquired as a way of life. The aim of this study is to examine physical activity levels in adult individuals.

MATERIALS AND METHODS

Research Model

The aim of this study is to examine physical activity levels in adults. The research is a quantitative study, and a descriptive survey model was used as a model. The survey model is the research in which the opinions or attitudes, abilities, interests, skills, etc. of the individuals participating in the research are determined (Karasar, 2019). The convenience sampling method was used for sampling. This method is a non-random sampling method in light of the researcher's basic information about the study and the sample to be selected from the basic group. In this method, data are collected very quickly, and it is very economical in terms of cost (Haşiloğlu et al., 2015).

Research Group

In this study, a total of 376 volunteer adult individuals, 195 men and 181 women, who could answer the questions constituted the population of the study. Volunteers who read the information form about the study had the right to withdraw from the study at any time without completing the questionnaire

Data Collection

In the study, personal data on gender, BMI, smoking status, region of residence (rural or urban), and physical activity level of adult individuals were collected. In addition, the short form of the International Physical Activity Questionnaire (IPAQ) was used to determine the physical activity levels of adult individuals. The IPAQ short form consists of seven questions. In the questionnaire, physical activities in the last 7 days are evaluated. The validity and reliability studies of the questionnaire were conducted by Craig et al. The validity and reliability studies in Turkey were conducted by Öztürk on university students. The questionnaire provides information on walking, sitting, moderately vigorous activities, and time spent in vigorous activities. The criterion for the evaluation of all activities is that each activity be performed for at least 10 minutes at a time. METs were calculated in the questionnaire. MET (metabolic equivalent) is the ratio of a person's metabolic rate in the working state to the rate in the rested state. The calculation is calculated as a MET-min/week score. MET-min/week multiplied by the number of days per week, how many minutes, and which activity was done Vigorous physical activity = 8 METs, moderate physical activity = 4 METs, and walking = 3.3 METs. In addition to this continuous scoring, categorical scoring is done with the numerical data obtained from it. One MET minute is calculated by multiplying the minutes of activity by the MET score (<600 MET-min/week), low physical activity level (minimally active) (600–3000 MET-min/week), and sufficient physical activity level (el/active) (>3000 MET-min/week) (Craig, 2003; Öztürk, 2005).

Statistical Analysis

The SPSS IBM 25.0 program was used for data analysis. The percentage and frequency distributions of the personal information of the volunteer adult individuals who participated in the study were first calculated. The "Kolmogorov-Smirnov" test was applied to see whether the data had normal distribution

values. In addition, standard deviations and averages were taken for all sub-dimensions of this scale. When the results of the Kolmogorov-Smirnov test were analyzed, it was found that the distribution of the data was within the normal distribution range, and a T-test was performed in order to evaluate the data according to other variables in the study. In the examination of the differences between the groups, the ANOVA test was used since the parametric assumptions were fulfilled, the significance level was chosen as 0.05, and the significance level of 0.01 was also specified in comparisons with lower significant differences. In case there is a significant difference as a result of the ANOVA test, Tukey post-hoc test results are also included in the tables to determine the groups that caused the difference.

RESULTS

Table 1 Frequency and percentage distributions of demographic characteristics of adults

<i>Variables</i>	<i>Groups</i>	N	%
Total number of participants		376	100
Gender	Men	195	51.9
	Woman	181	48.1
BMI	Underweight	107	28.5
	Normal	160	42.6
	overweight	109	29.0
Cigarette Use	Yes	161	42.8
	No	215	57.2
Region of residence	Rural	134	35.6
	Urban	242	64.4
Activity Levels	Low	135	35.9
	Middle	97	25.8
	High	144	38.3

Table 1 shows that 51.9% of the participants were male, 48.1% were female, 28.5% were underweight, 42.6% were normal, 29.0% were overweight, 42.8% were smokers, 57.2% were non-smokers, 35.6% lived in rural areas, 64.4% in urban areas, 35.9% had low physical activity level, 25.8% had moderate physical activity level, 38.3% had high physical activity level.

Table 2. T-test Results of Physical Activity Levels of Adult Individuals According to Gender

Physical Activity	Total (376)	Women (181)	Men (195)	<i>t</i>	p
	Mean±SD	Mean±SD	Mean±SD		
Total PA (MET-min/week)	2813 ± 2679	1950 ± 1418	3615 ± 3215	6.327	0.001*
Vigorous PA (MET-min/week)	951 ± 1109	632 ± 614	1247 ± 1359	5.583	0.001*
Moderate PA (MET-min/week)	923 ± 1094	596± 607	1227 ± 1334	5.825	0.001*
Walking Scores (MET-min/week)	1461 ± 1801	1111 ± 882	1785 ± 2308	3.685	0.001*
Sitting Time (min)	587 ± 648	465 ± 333	700 ± 825	3.566	0.001*

p<0.005*

When physical activity scores were compared according to gender in Table 2, it was seen that women had lower physical activity levels in all of the vigorous physical activity, moderate physical activity, and walking activities, while men had higher physical activity levels than women. Looking at the overall total physical activity scores, it was found that the values were higher in favor of male individuals. In sitting activity, it was observed that women engaged in sitting activity more than men. It was observed that there was a significant difference between men and women in terms of physical activity level.

Table 3. Comparison of Physical Activity Scores According to BMI Groups

Physical Activity	BMI	n	Mean±SD	F	P	Tukey post-hoc
Total PA (MET-min/week)	Underweight ¹	107	3013 ± 2894	1.498	0.005	1&2>3
	Normal ²	160	3025 ± 2355			
	Pre-obesity ³	109	2536 ± 2729			
Vigorous PA (MET-min/week)	Underweight ¹	107	1104 ± 1363	2.490	0.004	1&2>3
	Normal ²	160	1009 ± 1005			
	Pre-obesity ³	109	809 ± 969			
Moderate PA (MET-min/week)	Underweight ¹	107	927 ± 1114	0.443	0.002	1&2>3
	Normal ²	160	990 ± 1030			
	Pre-obesity ³	109	850 ± 1131			
Walking Scores (METmin/week)	Underweight ¹	107	1709 ± 1754	3.139	0.001	1>2>3
	Normal ²	160	1606 ± 1706			
	Pre-obesity ³	109	1196 ± 1870			
Sitting (min)	Underweight ¹	107	633 ± 565	1.668	0.001	1&2>3
	Normal ²	160	645 ± 626			
	Pre-obesity ³	109	516 ± 708			

p<0.005*

When physical activity scores according to BMI groups are compared in Table 3, it is seen that physical activity levels are at a high level in underweight and normal-weight individuals when severe physical activity and moderate physical activity scores are compared. In overweight individuals, vigorous and moderate physical activity levels were low. Looking at the overall total physical activity scores, it was determined that the physical activity scores of individuals with low and normal weights were high. When the sitting status scores were analyzed, it was determined that the sitting scores of underweight and normal-weight individuals were higher than those of overweight individuals.

Table 4. T-test Results of Physical Activity Levels by Region of Residence

Physical Activity	Rural (134)	Urban (242)	<i>t</i>	p
	Mean±SD	Mean±SD		
Total PA (MET-min/week)	3138 ± 2694	2634 ± 2659	1.753	0.080
Vigorous PA (MET-min/week)	1160 ± 1340	835 ± 941	2.743	0.005*
Moderate PA (MET-min/week)	1004 ± 1054	879 ± 1115	1.065	0.280
Walking Scores (MET-min/week)	1572 ± 1867	1399 ± 1764	0.894	0.372
Sitting Time (min)	595 ± 593	700 ± 825	0.187	0.846

p<0.005*

When the physical activity levels according to the region of residence were analyzed in Table 4, it was seen that there was a significant difference in the level of vigorous physical activity among the physical activity levels of individuals living in rural and urban areas. There was no significant difference in the levels of moderate physical activity, whether walking or sitting. According to the general physical activity level scores, it was determined that there was no significant difference between individuals living in rural areas and individuals living in urban areas.

Table 5. T-test Results of Physical Activity Levels According to Smoking Status

Physical Activity	Yes (161)	No (215)	<i>t</i>	p
	Mean±SD	Mean±SD		
Total PA (MET-min/week)	1950 ± 1418	3615 ± 3215	2.568	0.000*
Vigorous PA (MET-min/week)	632 ± 614	1247 ± 1359	1.208	0.000*
Moderate PA (MET-min/week)	596± 607	1227 ± 1334	3.806	0.000*
Walking Scores (MET-min/week)	1111 ± 882	1785 ± 2308	0.473	0.000*
Sitting Time (min)	465 ± 333	700 ± 825	1.583	0.115

p<0.005*

When the physical activity levels of smokers and non-smokers were examined in Table 5, it was found that the physical activity scores of the individuals who said no to smoking were high in all of the physical activity levels of vigorous physical activity, moderate physical activity and walking. When the total physical activity values were analyzed, it was observed that the total physical activity scores of non-smokers were high. When the sitting status of smokers and non-smokers was analyzed, it was seen that the sitting activity scores of individuals who said no, I do not smoke were high, but did not make a significant difference.

DISCUSSION

In the study, it was aimed to examine the physical activity levels of adult individuals according to some variables. Regular physical activity has an important effect on maintaining general health (Angulo et al, 2020). It helps us perform daily activities more easily, feel more energetic, and improve quality of life (Anne et al, 2022). Physical activity is beneficial not only for the body but also for the mind (Kadariya et al., 2019). For this reason, physical activity is a very important component of a healthy life. Maintaining an active life can prolong the life span, improve overall health, slow down the aging process, and improve quality of life (Chudasama et al., 2019). Based on this, it is very important to determine the physical activity levels of adult individuals.

When the findings obtained from the study are evaluated, it can be said that approximately half of the participants are in the normal value range when looking at BMIs, one-fourth are underweight, and one-fourth are overweight. It can be said that smoking is half and half, the urban population is more, and the distribution of physical activity scores according to physical activity levels is equal.

When the physical activity scores were compared according to gender, it was seen that the physical activity levels of women were lower and men were higher than women in all of the activities of vigorous physical activity, moderate physical activity, and walking activities of physical activity. When the overall total physical activity scores were examined, it was determined that the values were higher for male individuals. It was observed that there was a significant difference between men and women in terms of physical activity level. Zaccagni et al., 2014 found that girls participated in less physical activity than boys in their study. In their study conducted in 2022, Gülü and Yapıcı stated that the physical activity participation level of boys was higher than that of girls. Ghorbani et al. (2020) found that boys had a higher level of moderate physical activity than girls in their study. In their study in 2015, Staurowsky et al. compared men and women from the same occupational group to determine their health and well-being related to sports and physical activity and found that women had lower physical activity levels than men. Uğurlu and Çetin stated that men were more active than women in their study in 2023. Ishii et al., 2015, found that girls did less walking than boys in their study. The studies conducted are similar to this research. In the study conducted in Pancar 2020, it was determined that women and men had insufficient physical activity levels. Among women and men, it was observed that women's physical activity levels were higher than men's. It is not similar to this study.

When physical activity scores are compared according to BMI groups, it is seen that physical activity levels are high in underweight and normal-weight individuals when severe physical activity and moderate physical activity scores are compared. In overweight individuals, vigorous and moderate physical activity levels were low. Looking at the overall total physical activity scores, it was determined that the physical activity scores of individuals with low and normal weights were high. In the study conducted by Sayılır and Şahin in 2022, it was determined that the physical activity levels of mildly obese and obese individuals were low. In the study conducted by Abanoz in 2018, it was determined that BMI values decreased as

physical activity levels increased. In the study conducted by [Kalkavan et al. in 2016](#), BMI values increased as physical activity levels decreased. This study is similar to previous studies.

When the physical activity levels of individuals living in rural and urban areas were examined according to the region of residence, it was seen that there was a significant difference in favor of those living in rural areas at the level of vigorous physical activity. There was no significant difference in the levels of moderate physical activity, whether walking or sitting. According to the general physical activity level scores, it was determined that there was no significant difference between individuals living in rural areas and individuals living in urban areas. [Albaylar et al., 2021](#) stated in their study that the MET values of those living in rural areas had much higher scores than the MET values of those living in urban areas. This study is similar to this study in some aspects. In their study in 2017, [Demirtaş et al.](#) concluded that being in or near physical activity environments in different aspects, both in adulthood and in old age, makes individuals more physically active. [İşin and Özcan](#) stated that men were more active than women in their study in 2018, which examined the physical activity levels of adults in rural areas. It was determined that the level of physical activity increased significantly as the level of education increased. In their study conducted in urban and semi-urban areas in 2023, [Tüzün and Dündar](#) stated that the physical activity levels of individuals living in rural areas were inactive, while the levels of individuals living close to trails increased. According to the results, it is thought that the suitability of the living environment of individuals in different aspects (having areas to do activity, having people to do activity with, having a suitable time period, the ratio of workload, etc.) affects physical activity.

When the physical activity levels of smokers and non-smokers were examined, it was found that the physical activity scores of the individuals who said, No, I do not smoke, were high in all levels of vigorous physical activity, moderate physical activity, and walking. When the total physical activity values were analyzed, it was seen that the total physical activity scores of non-smokers were high, and there was a significant difference compared to smokers. In the study conducted by [Kızar et al. in 2016](#), it was observed that the physical activity levels of never smokers or occasional smokers were higher than those of smokers and quit smokers. In the study conducted by [Satici, Abakay and Efiloğlu in 2020](#), it was concluded that the physical activity, vigorous physical activity, moderate physical activity, and walking times of non-smokers were more positive than those of smokers. In the studies conducted by [Aydın and Solmaz in 2016](#) and [Ergin et al. in 2016](#), they stated that there was no significant difference between smokers and non-smokers in terms of physical activity level. It is not similar to this study.

CONCLUSIONS

In conclusion, in light of the findings obtained from this study, it was observed that the physical activity levels of adults were low; men were more physically active and active than women, while women had low physical activity levels and were inactive. Living in rural or urban areas did not have a significant effect on physical activity levels. It was concluded that smoking was high in adult individuals, non-smokers

had high physical activity levels, and smokers had low physical activity levels. It is thought that individuals who do not smoke and gain health awareness also gain the awareness that they can protect their health with physical activity. It was observed that the physical activity level of those with overweight BMI values was low, while the physical activity level of adult individuals with normal BMI was high. It is thought that physical activity levels decrease as BMI increases. Based on this, it is thought that women should be encouraged to do physical activity, smokers should be made aware of physical activity, overweight individuals should be directed to physical activity to control their weight, and awareness of a healthy and quality life should be created in adult individuals before it is too late.

Author Contributions

Conceptualization, D.U. and H.Y.; methodology, H.Y.; formal analysis, H.Y.; investigation, H.Y.; data curation, D.U.; writing—original draft preparation, D.U., H.Y., B.E., O.G., R.U., M.S., S.A., A.Y.; writing—review and editing, D.U., H.Y., B.E., O.G., R.U., M.S., S.A., A.Y.

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Participants took part in the research voluntarily and the research was conducted in line with the Declaration of Helsinki.

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Conflicts of Interest:

The authors declare that no conflicts interest.

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