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Study on the physical activity level of Turkish males[1]

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Abstract
The aim of this study was to investigate physical activity (PA) level of the Turkish males who lived in Bursa. A total of 365 subjects between 18 - 69 age participated to this study. To determine physical activity levels, International Physical Activity Questionnaire (IPAQ) was applied. PA levels of subjects were categorized as inactive, minimum active and HEPA active by using MET method. The relations of parameters, such as their age, BMI, education, marital status, number of children, smoking and alcohol use were determined with PA level. The results were analyzed by using Chi - Square test. The subjects have 1725 MET min/week average physical activity level, and 47.7 % of them were physically inactive, 30.4 % were physically minimum active and 21.9 % were physically hepa active. As a result, it can be said that the physical activity levels of the Turkish males who lived in Bursa are not sufficient and the inactive people are very common.
Key words: physical activity, exercise, questionnaire, male

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Türk erkeklerinin fiziksel aktivite seviyelerinin incelenmesi

Özet

Bu çalışmanın amacı Bursa'da yaşayan Türk erkeklerinin fiziksel aktivite (FA) seviyelerinin araştırılmasıdır. Araştırmaya, 18 - 69 yaş arasında olan toplam 365 denek katıldı. Fiziksel aktivite seviyesini belirlemek için Uluslar arası Fiziksel Aktivite Anketi (IPAQ) uygulandı. Deneklerin fiziksel aktivite seviyeleri MET yöntemini kullanılarak inaktif, minimum aktif ve hepa aktif olmak üzere üç grupta kategorize edildi. Deneklerin yaş, VKİ, eğitim, evlilik durumu, çocuk sayısı, sigara içme, alkol kullanma gibi parametrelere göre fiziksel aktivite seviyeleri belirlendi. Elde edilen bulgular Ki – kare istatistiksel testi ile analiz edildi. Denekler ortalama fiziksel aktivite seviyeleri 1725 MET dk/hf, ve %47.7'si fiziksel olarak inaktif, %30.4'ü minimum aktif ve %21.9'u hepa aktif olarak belirlendi. Sonuç olarak, Bursa'da yaşayan Türk erkeklerin fiziksel aktivite seviyeleri yetersiz olduğu ve inaktivite yaygın olduğu söylenebilir.

Anahtar kelimeler: fiziksel aktivite, egzersiz, anket, erkek

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INTRODUCTION

Physical activity (PA) is effective in an active and joyful daily life, protecting the body against diseases, preventing obesity by spending the gained extra energy in a natural way, anti-aging and slowing down the organic regression caused by aging, reducing neural tension and increasing the preventive and protective effect against the death cases caused by cardiovascular diseases, protecting the operability of the articulation, providing social contact and preventing loneliness and in preventing posture defects. Physical activity affects psychological and physical health in every period of our lives. The continuous and furtive progress of technology requires less physical activity in the environment. A new era has begun in the recreation activities for the children, adolescents and adults with the development of the computer games in the 1970s (Brady, 1988).

PA programs for adults have been developed for adults in Canada in 1998. In these programs, adults are recommended to perform mid-intense regular physical activities as these are best for their personal health (Bauman, 2004). Additionally, according to Canadian Health System, there is less expense by increasing the physical activities of the adults (Katzmarzyk et al., 2000). Rosenberger et al. (2005) indicate that physical inactivity and obesity have reached to epidemic levels in the USA. Researchers indicate that there is a direct proportional and statistically meaningful relation between physical inactivity, obesity and health expenses. Carnegie et al. (2002) indicate in a study they conducted with adults in New North Wales that physical activity and jogging are useful for health. The studies so far point out that a few chronic diseases and death risk have decreased in the adults with high level physical activity. These are hypertension, hearth attack, diabetes, colon and genial organs cancer, obesity and chronic backaches (Blair et al., 1984; Blair et al., 1989; Lee, 1994; Manson et al., 1991; Paffenbarger et al., 1983; Salonen et al., 1982; Siscovick, 1985;). Today, morbidity and death risk profile rapidly change in many countries. Although infection diseases decrease, there is an increase in the diseases life style (Murray & Lopez, 1997). Risk factor is related with chronic diseases are investigated in many studies and it is proved that physical activities have a preventive role (Berlin & Golditz, 1990; Manson et al., 1992; Pereira et al., 1999; Sternfelf, 1992).

It is very important to measure physical activity level for public health. However the fact that there are more than 30 methods in the literature related with this parameter forms a difficulty in comparing the results (Laporte et al., 1985). Due to feasibility and cost expenses many researchers prefer to use questionnaires and many questionnaires are used for this purpose (Kreska &. Caspersen. 1997). International Physical Activity Questionnaire (IPAQ; www.ipaq.ki.SE) is one of them. The aim of the present study was to determine the physical activities of Turkish males according to some parameters.

METHOD

International Physical Activity Questionnaire (IPAQ) is given to a total of 365 males between the ages of 18-69 living in the City Centre of Bursa and the districts between 01-15 June 2005 a group of students studying in Uludağ University, Faculty of Education, Physical Education and Sports Department applied these questionnaires. The survey takers were trained and tested before the application on the questionnaire. The questionnaire was applied with face to face interview method.

Development Process of IPAQ: In 1996, Dr. Michael Booth (Sydney-Australia) designed a reliable and valid questionnaire in order to examine health and physical levels of the society and the relations between them. A year later based on this questionnaire International Physical Activity Assessment Group developed IPAQ. IPAQ is designed as short and long form in order to determine physical activity and sedative lifestyles of the adults. In 1998-1999, in a total of 12 countries and 14 research centers in 6 continents validity and reliability studies were performed by using IPAQ test – retest method. As a result of these studies it is explained that IPAQ is valid and reliable method to determine physical activity (Atenz, 2001). IPAQ- short form is applied in the present study. The questionnaire consists of four separate sections and the total of seven questions. It is suggested to give the questionnaire to the adults aging between 18-69. The questionnaire includes questions related with PA performed at least 10 minutes in the last seven days. The questionnaire determines how many days and for how long within a single day in the last week the following were performed;

a) Heavy Physical Activities (HPA)
b) Mid-intense Physical Activities (MPA)
c) Walking (W)

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Physical Activity Level is determined with MET method. 1 MET=3.5 ml/kg/min.

When resting, a single person consumes 3.5 ml oxygen for 1 kg in 1 minute. In IPAQ it is accepted that HPA = 8.0 MET, MPA = 4.0 MET, W=3.3 MET.

The total MET amount spent as a result of these three different physical activities is calculated by determining for how many days a week and for how long a single person performs HPA, MPA, W. A sample is given in Table 1.

Table 1: Determining PA levels by using MET method (sample)

Physical Activity Type	***MET***	***In 1 day/min***	***Week/day***	***Total***
Walking	3,3	30	5	495 MET-min/week
MPA	4,0	40	4	640 MET-min/week
HPA	8,0	30	3	720 MET-min/week
	Total			**1855 MET-min/week**

Physical Activity Level is determined in three categories.

1st category: inactive : 600 MET-min/week

2nd category: minimum active : 600 – 3000 MET-min/week

3rd category: HEPA actives : <3000 MET-min/week

Statistical Method: Frequency values and Chi-square test were used in the evaluation of the gathered data.

RESULT

Table 2: Descriptive characteristics of subjects

Gender	***Variable***	***Age (year)***	***Height (cm)***	***Weight (kg)***	***BMI (kg/m²)***	***Income (YTL)***
Male	Mean	30.9	174.7	72.8	23.9	1226
N=365	Min.	18	149	47	20,5	100
	Max.	68	197	110	15,8	6000
	SS	13.1	7	10.2	34.6	1584

BMI: Body Mass Index Min: Minimum value

Income: Monthly income of the family Max: Maximum value

According to Table 2, it can be said that age mean of the males is 30.9 years, height average is 174.7 cm, weight average is 72.8 kg, BMI is 23.9 kg/m² and average monthly income is 1226 YTL.

Table 3: Determining physical activity levels of subjects

Parameters	Total
N	365
%	100
Average PA period (MET min/week)	1725
SS (min/week)	2255
Skewness	1.6
0 min/week PA %	32.9
Minimum (MET min/week)	0
Maximum (MET min/week	9775

According to Table 3, males perform an average of 1725 min/week PA. Additionally, 32.9% of the males indicated performing no physical activity.

Table 4: PA levels of subjects according to some demographic and socioeconomic conditions.

Variable	***N***	***%***	***PA1***	***PA2***	***PA3***	**Chi-Square**
Total	365	100	47.7	30.4	20.9	p<0.05
Age (year)						
18-29	219	60	42.	29.7	27.9	P<0.05
30-39	49	13.4	38.8	34.7	26.5	(23.5)
40-49	55	15.1	60	32.7	7.3	
50≤	42	11.5	69	26.2	4.8	
Education						
University	178	48.	41.6	33.1	25.3	P<0.05
Post-Graduate	12	3.3	50	41.7	8.3	(6.83)
Other	175	47.9	53.7	26.9	19.4	
BMI						
underweight	6	1.6	50	16.7	33.3	P<0.05
normal	250	68.5	46.8	29.2	24	(5.74)
overweight	85	23.3	52.9	30.6	16.5	
obesity	24	6.6	37.5	45.8	16.7	
Marital Status						
Married	147	40.3	54.4	32	13.6	P<0.05
Unmarried	209	57.3	42.6	29.2	28.2	(20.21)
Divorced	4	1.1	50.	25	25	
Widowed	4	1.1	50	50	0	
Lives separately	1	0.3	100	0	0	
Number of children						
0	212	58.1	42.5	28.8	28.8	P<0.05
1	66	18.1	51.5	28.8	19.7	(20.21)
2	58	15.9	51.7	39.7	8.6	
3≤	29	7.9	69	27.6	3.4	

PA1: Physically inactive PA2: Physically minimum active PA3: Physically hepa active

Table 4 displays that 47.7% of the males are in PA1, 30.4% are in PA2 and 20.9% are in PA3 category ($p<0.05$). According to age, 18-29 year olds (42.5%), 30-39 year olds (38.8%), 40-49 year olds (60%), 50 and over (69%) are mostly in the PA1 category ($p<0.05$). According to education level, university graduates are mostly in the PA1 group (41.6%), postgraduates are in PA1 group (50%) and the others are in PA1 group (53.7%) ($p>.05$). According to BMI, Underweight, Normal and Overweight males are mostly in PA1 category (50%, 46,8%, 52,9% in order). The males in the overweight group are mostly in PA2 category (45.8%) ($p<0.05$). Married and unmarried males are mostly in PA1 category (54.4%, 42.6% in order). When the number of children is considered, it is seen that no children, 1, 2, 3 and more are mostly in PA1 category (42.5 %, 51.5%, 51.7% and 69% in order).

Table 5: PA levels of subjects according to alcohol and smoking habits and institution of work.

Variable	***N***	***%***	***PA1***	***PA2***	***PA3***	**Chi-Square**
Institution						
Private	272	74.5	46	31.6	22.4	p>0.05
Public	93	25.5	52.7	26.9	20.4	(1.29)
Alcohol						
Yes	134	36.7	54.5	26.9	18.7	P<0.05)
No	231	63.3	43.7	32.5	23.8	(3.96)
Smoking						
Yes	154	42.2	59.1	24.7	16.2	P<0.05
No	211	57.8	39.3	34.6	26.1	(3.96)

PA1: Physically inactive PA2: Physically minimum active PA3: Physically hepa active

According to table 5, 54.7% of the males having alcohol habit are in PA1 category and 43.7% with no alcohol habit are in PA1 category. When smoking habit is considered, it is seen that 59.1% of the smokers are in PA1 category and 39.3% non-smokers are in PA1 category as well. Males working in private and public institutions are mostly in PA1 category (46% and 52.7% in order) ($p>0.05$).

DISCUSSION

The findings and results gained from the scientific studies indicate that regular physical activity has beneficial effects for the body throughout life. One of the biggest opportunities provided by physical activity is to leave independently for long years, to decrease disabilities and inadequacies, to improve life quality in the middle and late ages (Stewart, 2001; Craig et

al., 2003). The study carried out by Hallal et al (2003) indicates that as BMI increases physical inactivity increases as well. Arabacı & Çankaya (2005) stated that of Physical Education Teachers working in Bursa 3.2 % are in underweight, 64.4% are in normal, 27.6% are in overweight, 4.8% are in obese group.

Table 6: Grouping according to BMI values.

Groups	***Underweight***	***Normal weight***	***Overweight***	***Obese***
BMI (kg/m²)	<18,5	18,5-24,9	25,0-29,9	30,0 and above

According to Table 6 (World Health Organization), it can be said that 1.6% of the males participating to the present study are underweight, 68.5 % are normal, 23.3% are overweight and 6.6% are in the obesity group.

Some studies (Cauley et al., 1991; Burton & Turrell, 2000) indicate that there is a positive relation between physical inactivity and age. The present study also points out that there is a positive relation between physical inactivity and age according to the findings. Hallal et al (2003), in the study carried out in Pelotas City of Brazil found out that 41.1% of the adults (n=3182) are physically inactive. In this study 26.4% of the adults (25.3% males, 27.2% females) indicated performing no physical activity at all. The study also indicated that male adults perform 797.9 min/week of physical activity on the average. Arabacı and Çankaya (2005) indicated that 41.6% of the physical education teachers are in PA1 category, 41,6% are in PA2 category and 16,8% are in PA3 category ($p<0.05$). Physical education teachers perform an average of 1380 min/week PA (males 1607 min/week, females 999 min/week). Additionally, 20.8% of them indicated that they performed no physical activity (21.2% males, 20.0% females). In the present study it is seen that 47.7% of the males are in PA1, 30.4% are in PA2 and 20.9% are in PA3 category ($p<0.05$). Males perform an average of 1725 min/week PA. Moreover, 32.9% of the males perform no physical activity. In the study conducted by Burton & Turrell (2000), it is stated that parents with children perform more physical activities than non-parents, not married couples or parents with no children.

In the present study it is seen that 42.5% of the males with no children are in PA1 category but males with 1, 2, 3 or more children are 51.5%, 51.7%, 69% in order in PA1 category. 28.8% of the males with no children are in PA3 category but males with 1, 2, 3 or more

children are 19.7%, 8.6% and 3.4% in order in PA3 category. Thus, it can be said that males with no children perform more PA. Arabacı & Çankaya (2005) stated that 39,62% of the married physical education teachers are in PA1 category, 41,6% are in PA2 category and 18,8% are in PA3 category. 66.7% of single physical education teachers are in PA1 category, 22.2% are in PA2 category and 11.1% are in PA3 category. In the present study it is seen that 54.4% of the married males are in PA1 category, 32% are in PA2 category and 13.6% are in PA3 category. 42.6% of the single males are in PA1 category, 29.2% are in PA2 category and 28.2% are in PA3 category.

In a study conducted in Australia it is underlined that there is high physical inactivity among smokers (Burton & Turrell, 2000). In the present study, it is seen that 59,1% of the smoking males are in PA1 category, 24,7% are in PA2 category and 16,2% are in PA3 category; 39,3% of the non-smoker males are in PA1 category, 34,6% are in PA2 category and 26,1% are in PA3 category. Physical activity levels of smoking males are lower than non-smoker males. 54.5% of males drinking alcohol are in PA1 category, 26.9% are in PA2 category and 18.7% are in PA3 category; 43.7% of the males who do not drink alcohol are in PA1 category, 32.5% are in PA2 category and 23.8% are in PA3 category. It can be said that physical activity levels of the males drinking alcohol are lower than the males who do not drink alcohol. In the present study, it is determined that 46% of the males working in private institutions are in PA1 category, 31,6% are in PA2 category and 22,4% are in PA3 category; 52,7% of the males working in public institutions are in PA1 category, 26,9% are in PA2 category and 20,4% are in PA3 category. There is no statistically meaningful difference from physical activity point of view between males working in private and public institutions ($p>0.05$).

As a result it can be said that physical activity levels of Turkish males who lived in Bursa are insufficient and that physical inactivity is quite common.

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