Ambulatory Activities in Turkish Adults without Exercise Habits

Egzersiz Alışkanlıkları Olmayan Türk Yetişkinlerinin Yürüme Aktiviteleri

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ABSTRACT Objective: The purpose of this study was to examine ambulatory activities in healthy Turkish adults without exercise habits. **Material and Methods:** This study was conducted in 2006-2007 education year in Bursa/Turkey. Ambulatory activity in participants between 18-85 years (women, n= 1000; men, n= 915) assessed by daily pedometer steps. The relations of parameters, such as their age, body mass index (BMI), education, annual income, marital status, number of children, smoking and alcohol consumption were determined with number of daily steps. **Results:** Median (interqr. range) steps/day in women and men respectively were 7854 (5366) and 8760 (5596) steps/day (p= 0.000). In both women and men, there was significantly negative relation between daily step number and age (women r= -.268, p= 0.000; men r=-.126, p=0.000), and BMI (women r= -.148, p= 0.000; men r= -.074, p= 0.044) values; there was a significantly positive relation between daily step number and annual income. **Conclusion:** Ambulatory activities of Turkish women are less than men. The finding of this study revealed that in both genders, as the age and BMI increases, daily step numbers decrease, and as annual family income increases, daily step number increases as well. As the number of the children increases, occurs a decrease in the daily step numbers, especially of the women.

Key Words: Walking, adult, motor activity, physical fitness

ÖZET Amaç: Bu araştırmanın amacı egzersiz alışkanlığı olmayan sağlıklı Türk yetişkinlerinin yürüme aktivitelerinin incelenmesidir. **Gereç ve Yöntemler:** Bu araştırma 2006-2007 eğitim öğretim yılında Bursa'da uygulandı. 18-85 yaş arasında olan denklerin (kadın, n= 1000; erkek, n= 915) yürüme aktiviteleri bir günlük adım sayısını pedometre ile ölçülerek değerlendirildi. Yaş, beden kitle indexi (BKİ), eğitim durumu, yıllık gelir, evlilik durumu, çocuk sayısı, dominant taraf, sigara ve alkollü içki kullanma gibi özelliklerin günlük adım sayısı ile ilişkisi belirlendi. **Bulgular:** Medyan (interqr. range) günlük adım sayısı kadınlarda ve erkeklerde sırasıyla 7854 (5366) adım/gün ve 8760 (5596) adım/gün olarak belirlendi (p= 0.000). Hem erkeklerde hem de kadınlarda günlük adım sayısının yaş (kadınlarda r= -.268, p=0.000; erkeklerde r= -.126, p= 0.000) ve BKİ (kadınlarda r= -.148, p =0.000; ereklerde r= -.074, p= 0.044) ile istatistiksel olarak anlamlı negatif ilişki, günlük adım sayısının yıllık gelir ile arasında istatistiksel olarak anlamlı pozitif ilişki belirlendi. **Sonuç:** Bayanların yürüme aktiviteleri erkeklere gore daha azdır. Ayrıca, her iki cinsiyette de yaş ve BKİ arttıkça günlük adım sayısı azalmaktadır ve yıllık gelir arttıkça günlük adım sayısı da artmaktadır. Çocuk sayısının artmasıyla, özellikle kadınların günlük adım sayısında azalma meydana gelmektedir.

Anahtar Kelimeler: Yürüme, erişkin, motor aktivite, fiziksel zindelik

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In many countries, the profile of morbidity and mortality changed greatly during the 20th century, with a decrease in the frequency of infectious diseases and an increase in lifestyle-related diseases.[1] The risk factors associated with chronic diseases have been investigated in numerous epidemiological studies which have provided evidence on the impor-

tance of physical activity as a preventative factor.[2,3] In addition to its preventative role, physical activity is also recommended as an intervention to treat various diseases.[4-6]

The lifestyle approach in physical activity brings the focus on the total accumulated daily physical activity as a factor for health benefits. Walking is the most frequently reported type of leisure-time physical activity.[7,8] On the other hand, walking is probably the most important activity to assess accurately, especially in the majority of individuals who do not regularly participate in sports or exercise. In field settings with ambulatory activity, pedometers have been found to be a valid and reliable way of measuring total daily activity.[9-11] In the last decade there has been increased interest in using simple and inexpensive pedometers to objectively assess walking behaviors.[12-15] Steps per day (steps/ day) has been recommended as a standard unit of measurement for collecting, reporting, and interpreting pedometer data collected in free-living individuals.[12,13] More and more, researchers are beginning to acknowledge that in terms of practicality, pedometers are low cost, objective monitoring tools that are accessible to both researchers and practitioners and therefore offer a simple opportunity to bridge the gap between research and practice.[9-11,14,15] As acceptance continues to grow, accumulation of additional evidence will permit refinement of standardized measurement methods and protocols. Pedometers enable the measurement of occupational, leisure time and household activity, along with that required for everyday transportation, and the use of these devices increase in both research and by members of the public is rapidly.[16] The objective monitoring of physical activity using pedometers is still in its infancy and more is to be learned about the wide sources of inter-and intra-individual variability common in the measurement of the number of steps taken per day.[13,17]

In literature, more than 150 scientific researches related to the ambulatory activity have been carried out since 1991 to date. However, no researches have been published in the medical and scientific literature investigating pedometer-determined activity in healthy Turkish adults uptodate.

The purpose of this study was to examine ambulatory activities in healthy Turkish adults without exercise habits.

MATERIAL AND METHODS

SUBJECTS AND STUDY DESIGN

This study was conducted in 2006-2007 education year in Bursa/Turkey. A total of 1915 Turkish sedentary adults (women, n= 1000; men, n= 915) between 18- 85 years of age participated to this study. Present study assessed physical activity of healthy Turkish adults who did not have locomotor discomfort or illness during daily walking activity. Sixty students of Physical Education Sport Department in Uludag University /Bursa were trained to collect the data. A total of sixty pedometers were used in order to determine daily step number of subjects. After giving informed consents, participants completed a survey with questions about gender, age, height, weight, marital status, number of children, education level, household income, smoking and alcohol intake. The relationship between number of daily steps (steps/day) and variables such as age, body mass index (BMI), education, marital status, number of children, smoking and alcohol were examined.

Subjects were enrolled in the study for one day on which thiy wore a pedometer - Multifunctional Pedometer, Item No.: DT-1845, ShenZhen HuaCheng Gifts Co., Ltd., China (Figure 1).

Before intervention, the tests of "walking test of 100 steps" and "shake test" were applied to determine the validity of pedometer used in present study. Vincent & Sidman stressed that accuraty pedometers did not exceed 5% error (i.e., 5 steps out of 100) in any of the tests.[18] The shake test involved shaking the pedometers in the shipping box 100 times and then recording the counts on pedometers. We recorded that the percent error for the walk test was approximately 2% and for the shake test was approximately 1%. Therefore, one can have confidence that the scores obtained using this pedometer are accurate. Subjects were instructed to wear the pedometer and to record the total number of steps taken day in physical activity log the

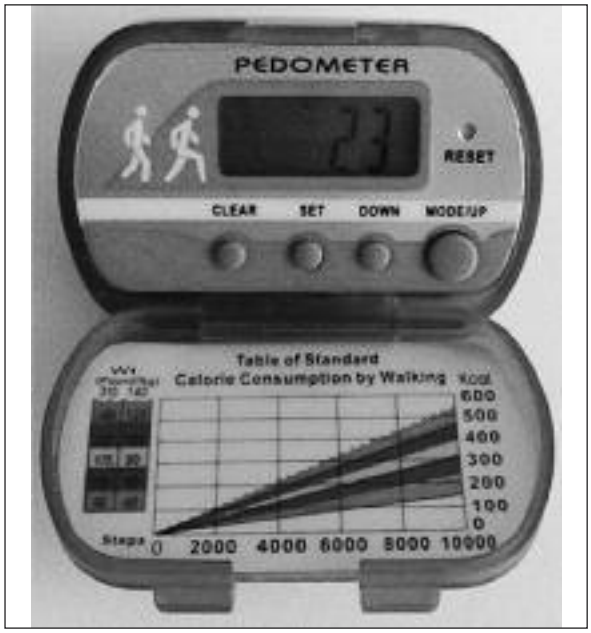

FIGURE 1: Multifunctional Pedometer, Item No.: DT-184X.

night prior to retiring. The pedometer worn was attached to the waistband of their clothing during waking hours, except for bathing. Because pedometer tool could break down or missed in swimming pool the subjects did not swim during the test day. All participants were strongly encouraged not to make any changes in their typical daily routine work and leisure activities.[19]

Participant was informed of the interventions of the study, completed questionnaires for health screening, and their written informed consents for participation were obtained in accordance with the Helsinki Declaration.[20] Following completion of the survey, participants were oriented to the pedometer sampling protocol and provided with a kit containing the pedometer (with lanyard to secure the pedometer), sampling log, and instructions (with photos) in a storage container. Research staff explained the functions of the pedometer, reset it, and taped the pedometer shut, blinding participants to the step count. Staff stressed that participants should maintain their normal daily routine while wearing the pedometer. Staff demonstrated proper pedometer placement, use of the lanyard, and reviewed instructions for completion of the sampling log.

BMI

Because subject group in present study was large, BMI was calculated from the self-reported height and weight (weight (kg)/height^2 (m^2). Classification as underweight (< 18.5 kg/m^2), normal weight (18.5 to 24.9 kg/m^2), overweight (25.0 to 29.9 kg/m^2), and obese (30.0 kg/m^2) was made according to the World Health Organization guidelines.[21]

ANNUAL INCOME DISTRIBUTION

We have grouped the annual family income distributions of the subjects in accordance with the distributions of 20% which has been carried out by State Statistics Institute, Turkey. We have formed the annual income groups by converting the currency unit of Turkey, New Turkish Lira (NTL) into the Dollar ($). The annual family income groups of the participants of our research have been formed as follows:

1st group: <4000 $, 2nd group: 4000-5999, 3rd group: 6000-7999, 4th group: 8000-11999, 5th group: ≥12000.

Statistical Analysis

Statistical analysis was performed using the SPSS package for Windows, version 13.0 (SPSS, Inc, Chicago, IL) and InStat for Windows, version 3.10 (copyright © 1995-2009 by GraphPad Software, Inc.). Since the test parameters showed skewness according to Shapiro-Wilk's test and did not provide the homogeneity of variance according to Levene's statistic, non-parametric statistical testing was chosen. The relationship among variables was evaluated by Spearman rank correlation coefficient (r_s).The statistical significance of differences between groups was analyzed by Kruskal-Wallis test (≥3 groups). Then Dunn's multiple comparisons post hoc test was used to identify pairwise differences.[22] Statistical significance of variables (smoking and alcohol) between two groups and descriptive characteristics of women and men were analyzed with Mann-Whitney U test. A p value < 0.05 was considered to indicate statistical significance.

RESULTS

In present study, 52.2% of the participants (n= 1000) were women, and 47.8% were men. There

were no statistically significant differences between women and men in terms of median age (37 years, women; 34 years, men; p= 0.102) and BMI values (23.4 kg/m^2, women; 24.2 kg/m^2, men; p= 0.065). There was significant statistical differences between women and men in terms of median height (165 cm women; 173 cm men; p= 0.000), weight (65 kg, women; 73 kg, men), annual income (10800 $ women; 9600 $ men; p= 0.000) and number of daily steps (7854 steps/day women, 8760 steps/day men; p= 0.000) (Table 1).

In both women and men, there was a significant negative relation between daily step number and age (p= 0.000), and BMI (p= 0.000 women, p= 0.044 men) and there was a significant positive relation between steps/day and annual income (p= 0.000 women, p= 0.009 men) (Table 2).

In women and men, according to age groups daily step number varied significantly (p= 0.000). Women participants under the age of 30 and between ages 30-44 recorded significantly more steps/day than participants aged between 45-59 and aged ≥60; and the participants aged between 30-44 recorded significantly more steps/day than the participants aged ≥60. Men participants under the age of 30, aged between 30-44 and 45-59 recorded significantly more steps/day than participants aged ≥60; and participants aged between 30-44 recorded significantly more steps/day than the participants aged between 45-59. When BMI groups were taken into consideration, the number of steps varied significantly between women (p= 0.000) and men (p= 0.001). Overweight and obese women participants recorded significantly less steps/day than normal weight women. Obese men participants recorded significantly less steps/day than normal and overweight men. In women, according to education groups, daily step number varied significantly (p= 0.003), on the contrary there was not a significant difference in men (p= 0.592). Women participants with high school education recorded significantly more steps/day than women participants with primary school or university education. In accordance with annual income groups, daily step number varied significantly in statistical terms in women (p= 0.011) and men (p= 0.046). Women participants

TABLE 1: Descriptive characteristics for gender and total sample and comparison between women and men participants.

	Women (n= 1000; %52.2) Median(Interqr. Range)	Men (n= 915; %47.8) Median(Interqr. Range)	Z value P value
Age (year)	37(17)	34(19)	1.040 P= 0.102
Height (cm)	165(10)	173(10)	22.287*** P= 0.000
Weight (kg)	65(14)	73(15)	15.938***
BMI (kg/m²)	23.4(5.5)	24.2(4)	2.294 P= 0.065
Income (Year $)	10800(10800)	9600(8760)	4.021*** P= 0.000
Steps/ day	7854(5366)	8760(5596)	6.015*** P= 0.000

*** p<0.001: there is a statistically significant difference between gender groups.

TABLE 2: Spearman Rank Correlation Coefficient (rs) between steps/day and age, bmi and income in Turkish adults.

	Steps Per Day		
Variables	Women (N=1000)	Men (N=915)	Total (N=1915)
Age	-.268 (p= 0.000)	-.126 (p= 0.000)	-.204 (p= 0.000)
BMI	-.148 (p= 0.000)	-.074 (p= 0.044)	-.090 (p= 0.000)
Income	.117 (p= 0.000)	086 (p= 0.009)	.084 (p= 0.000)

with an income under 4000$, 4000-5999$ and 6000-7999$ per year recorded significantly fewer steps than women participants with an income ≥12000$ per year. Men participants with an income under 4000$ and 4000-5999$ per year recorded significantly fewer steps than men participant with an income ≥12000$ per year (Table 3).

In women, according to the marital status, daily step number varied significantly (p= 0.001); however, there was not a significant difference in men in terms of marital status (p= 0.374). Married and unmarried women participants recorded significantly more steps/day than widowed (or divorced) women participants. In women, when the number of children was taken intoconsideration, daily step number varied significantly (p= 0.000); however, there was not a significant difference in men in terms of the number of children (p= 0.052). It has been recorded that the number of daily steps of women with three or more children were significantly less than that of the women without any children, one child or two children. It has been recorded that number of daily steps of women and man who were not smoking and drinking alcohol were higher than number of daily steps of women and man who were smoking and drinking alcohol. There were significant differences in the number of daily steps between women who were smoking and women who were not (p= 0.003). There were no significant differences (p= 0.092) in the number of daily steps between men who were smoking and men were are not smoking.

There were no significant differences in the number of daily steps between women who drank alcohol and women who did not (p= 0.182). There was a significant difference (p= 0.010) in the number of daily steps between men who drank alcohol and men who did not (Table 4).

DISCUSSION

This is the first study that investigated one day pedometer-determined activity patterns and relationship between walking activity, BMI, socioeconomic, demographic and behavioral variables in Turkish adults without exercise habits. In present preliminary study of pedometer-determined physical activity of Turkish sedentary adul women and men median (inerqr.range) were determined as 7854 (5366) and 8760 (5596) steps/day, respectively. Several studies reported that men were generally more active (more daily steps) than women.[13,23-25] The mean pedometer values reported by McClung et al. for their subsample of 58 normal healthy adults aged between 22-82 years of age was 7781 ± 2807 steps/day, although the brand of pedometer was not reported in that study.[26] Average step number we determined in the present research is relatively less than that of Swiss adults, 10617 steps/day,[27] Finnish adults, 9500 steps/day, and UK adults 11273 steps/day.[16] Japanese health promotion efforts recommend a goal of 10000 steps/day.[28,29] A review of the published literature indicates that this value seems a reasonable estimate for healthy individuals.[13,21] According to Hatano, 10000 steps/day is approximately equal to an energy expenditure of 300-400 kcal/day (depending on walking speed and body size).[30] This is doubles the amount (150 kcal/day) that the U.S. Surgeon General indicates related to health benefits.[31] In a recent study Tudor-Locke et al. stressed that zone-based hierarchy was useful both for measurement and motivation purposes in adults: 1) <5000 steps.d (sedentary); 2) 5000-7499 steps.d (low active); 3) 7500-9999 steps.d (somewhat active); 4) > or = 10.000-12.499 steps.d (active); and 5) > or =12,500 steps.d (highly active).[32] According these step groups subjects of present study were somewhat active.

Sequeira et al.[27] reported that steps/day was also affected by age. Steps/day were lowest in the 65- to 74-year-old group. In present study it was determined that according to the age groups, the daily step number varies significantly in statistical terms. Additionally, there was a negative relation between the average age and daily steps. Women under the age of 30 walk (median 8966 steps/ day) approximately 5000 steps more than women ≤ 60 (median 3816 steps/day) years of age. In men, the age group <30 years (median 8950 steps/day) walk approximately 2600 steps/day more than the age group ≤ 60 years (median 6332 steps/day). Based on the results of Sequeira et al.[27] and present paper,

TABLE 3: Demographic and socioeconomic distribution of gender groups, mean daily step, median daily step, minimum, maximum values and comparison of variables.

Gender	Variable (Group)	N	%	Median (Interqr.Range)	x^2 value P value	Multiple Comparisons P value
Age (yr)						
Women	<30 (1)	282	28.2	8966 (5304)	96.885***	1-2: p>0.05
	30-44 (2)	443	44.3	8362 (5432)	P= 0.000	1-3: p<0.001
	45-59 (3)	202	20.2	6788 (4725)		1-4: p<0.001
	>=60 (4)	73	7.3	3816 (3186)		2-3: p<0.001
						2-4: p<0.001
						3-4: p<0.001
Men	<30 (1)	323	35.3	8950 (5487)	33.061***	1-2: p>0.05
	30-44 (2)	347	37.9	9313 (5282)	P= 0.000	1-3: p>0.05
	45-59 (3)	170	18.6	8169.5 (5027)		1-4: p<0.001
	>=60 (4)	75	8.2	6332 (5853)		2-3: p>0.05
						2-4: p<0.001
						3-4: p<0.01
BMI (kg/m²)						
Women*	<18,5 (1)	47	4.7	8357 (6493)	20.823***	1-2: p>0.05
	18,5-24,9 (2)	588	58.8	8371 (5798)	P= 0.000	1-3: p>0.05
	25-29,9 (3)	275	27.5	7386 (5445)		1-4: p>0.05
	>=30 (4)	90	9	6592 (3902)		2-3: p<0.01
						2-4: p<0.01
						3-4: p>0.05
Men	<18,5 (1)	14	1.5	7677 (8206)	16.104***	1-2: p>0.05
	18,5-24,9 (2)	535	58.5	9020 (5437)	P= 0.001	1-3: p>0.05
	25-29,9 (3)	317	34.6	8732 (5788)		1-4: p>0.05
	>=30 (4)	49	5.4	7197 (5263)		2-3: p>0.05
						2-4: p<0.001
						3-4: p<0.01
Education						
Women*	Primary (1)	324	32.4	7537 (5061)	11.533**	1-2: p<0.01
	High school (2)	289	28.9	8700 (6127)	P=0.003	1-3: p>0.05
	University (3)	387	38.7	7668 (5136)		2-3: p<0.01
Men	Primary (1)	268	29.3	8522.5 (5930)	1.050ns	
	High school (2)	316	34.5	8716 (5081)	P= 0.592	
	University (3)	331	36.2	9005 (5690)		
Income (year; $)						
Women	<4000 (1)	107	10.7	7614 (5666)	13.025*	1-2: p>0.05
	4000-5999 (2)	197	19.7	7619 (5862)	P= 0.011	1-3: p>0.05
	6000-7999 (3)	239	23.9	7223 (5367)		1-4: p>0.05
	8000-11999 (4)	182	18.2	8216 (4717)		1-5: p<0.05
	≥12000 (5)	275	27.5	8439 (5135)		2-3: p>0.05
						2-4: p>0.05
						3-4: p>0.05
						2-5: p<0.05
						3-5: p<0.05
						4-5: p>0.05
Men	<4000 (1)	147	16.1	8364 (6138)	9.747*	1-2: p>0.05
	4000-5999 (2)	185	20.2	8140 (4894)	P= 0.046	1-3: p>0.05
	6000-7999 (3)	221	24.2	8542 (4882)		1-4: p>0.05
	8000-11999 (4)	167	18.3	8950 (5345)		1-5: p<0.05
	≥12000 (5)	195	21.3	9642 (6650)		2-3: p>0.05
						2-4: p>0.05
						3-4: p>0.05
						2-5: p<0.05
						3-5: p>0.05
						4-5: p>0.05

*p< 0.05, **p< 0.001, ***p< 0.001 (There was significant difference), ns p> 0.05 (There was not significant difference).

TABLE 4: Behavioural and social distribution of gender groups, mean daily step, minimum, maximum values and comparison of variables.

Gender	Variable (Group)	N	%	Median (Interqr. Range)	x^2 value or Z value	Multiple Comparisons P value
Marital Status						
Women						
	Married (1)	670	67	7687.5 (5368)	13.568**	1-2: p> 0.05
	Unmarried (2)	215	21.5	8349 (5312)	P= 0.001	1-3: p< 0.05
	Widowed or divorce (3)	115	11.5	6297 (6116)		2-3: p< 0.001
Men	Married (1)	514	56.2	8817 (5458)	1.968ns	
	Unmarried (2)	356	38.9	8576 (5411)	P= 0.374	
	Widowed or divorce (3)	45	4.9	9020 (7819)		
Number of Children						
Women	No (1)	245	24.5	8400 (5058)	41.557***	1-2: p> 0.05
	One (2)	228	22.8	8588 (5698)	P= 0.000	1-3: p> 0.05
	Two (3)	326	32.6	7844.5 (5301)		1-4: p< 0.001
	Three+ (4)	201	20.1	6047 (4666)		2-3: p> 0.05
						2-4: p< 0.001
						3-4: p< 0.001
Men	No (1)	369	40.3	8896 (5822)	6.545 ns	
	One (2)	184	20.1	9067 (4881)	P= 0.052	
	Two (3)	201	22	8732 (4928)		
	Three+ (4)	161	17.6	7662 (7229)		
Alcohol						
Women	Yes	101	10.1	7800 (5343)	1.684 ns	
	No	899	89.9	8207 (5735)	P= 0.182	
Men	Yes	307	33.6	8501 (5675)	2.949**	
	No	608	66.4	9330 (5184)	P= 0.010	
Smoking						
Women	Yes	404	40.4	7511 (5153)	2.579**	
	No	596	59.6	8479.5 (5811)	P= 0.003	
Men	Yes	530	57.9	8760 (5228)	1.336 ns	
	No	385	42.1	8771 (5613)	P= 0.092	

*p< 0.05, **p< 0.001, ***p< 0.001 (There was significant difference), ns p>0.05 (There was not significant difference).

we can say that as the age increases, physical activity was decreases.

Behren et al. reported that thirty-six college students (age: 23.3 ± 3.1 years) averaged 9.940.4 ± 2.867.1 steps/day. In present study median daily step number of men and women under the age of 30 was found as 8950 steps/day and 8966 steps/day, respectively. These results show that ambulatory activities of American and Turkish populations were similar.

Several studies reported that pedometer-determined ambulatory activity was associated with BMI and obesity.[13,23,26,34-36,41,42] Clemes et al. found that normal-weight adults had a significantly higher mean step count (10247 steps/day) than the overweight (9095 steps/day) and obese (8102 steps/day) adults (p< 0.05).[37] In present study we determined that there was a negative significant relation between BMI and daily step number. Underweight and normal participants of both genders walk more than overweight and obese participants, ranging from 1000 to 2000 steps. One thousand steps is the equivalent of expending approximately 50 kcal of energy. Hill et al. have estimated that the gradual weight gain seen in the US over the past 15 years could have resulted from a consistent, sustained,

positive energy balance of approximately 50 kcal/day.[38] Tudor-Locke et al. found that pedometer-determined activity (steps/day) was associated inversely with the percentage body fat (r= -0.27) and BMI (r= -0.30).[23] Tudor-Locke & Myers described that individuals with >9000 steps/day were more likely to be within the normal weight range and that those with <5000 steps/day were more likely to be classified as obese.[13] Two studies found that overweight individuals were less active than those classified as normal weight.[24,39] Within the normal weight and overweight groups, there was a tendency for normal weight group to report a higher mean daily step count than overweight group (normal weight group=11 273 steps/day; overweight group=10 002 steps/day) and this difference was statistically significant in the normal weight group.[16]

Numerous population surveys have similarly reported a positive association between leisure-time physical activity and measures of social class.[39-42] Some of evidence suggests that pedometer-determined daily steps are inversely associated with measures of socioeconomic position.[43] Approximately 72% of adults with less than a ninth-grade education do not regularly participate in leisure-time physical activity, compared with 25% of college graduates.[43] In present research, it has been determined that in both men and women, as the annual family income increases, the daily step number also increases. It has been recorded that in men, as the education level increases, daily step number increases. But women participants with high school education recorded significantly more steps per day than women participants with primary school or university education ($p< 0.05$). In Turkey, the majority of elementary school graduate women were housewives and did not work, and university graduate women work mostly sitting (armchair works), however high school graduate women worked mostly in vocational or production jobs, and this may be the reason. In present study married and unmarried women participants recorded more steps per day than widowed (or divorced) participants. In our opinion, the reason stems from the fact that widowed women alienate from the social environments in their daily lives and prefer living alone. Additionally, the step numbers of the women participants having no children is more than that of the women participants having children. In women, there is an inverse relation between the number of children and steps/day. In Turkey, care of children is generally undertaken by mothers, so they quit their jobs; After the child is born, social activities of the parents, especially mothers, become restricted, and for these reasons there is decrease in the daily step numbers of women.

Some researchers have found that smokers are less likely to exercise than nonsmokers.[44-46] In contrast, a study of university students found that tobacco use was not significantly associated with level of physical activity,[47] and in a sample of working adults smoking was only weakly associated with leisure-time exercise.[45] The results of present study supported the opinion that physical activity was less in smokers than no smokers. Pate et al. found that relationship between physical activity and other health behaviours such as smoking and drinking alcohol was negative.[48] Results in present study, also shown that subjects who consume alcohol perform less physicial activity than the not consuming alcohol.

CONCLUSION

To our knowledge, in scientific literature, no studies the relation between daily step number and alcohol and smoking. However, in the present research, daily step numbers of the ones who smoke and drink alcohol is less than that of who do not smoke or drink alcohol, even though the difference is not statistically significant.

As a result, ambulatory activities of sedentary Turkish women are less than men. The findings of this study revealed that in both genders, as the age and BMI increases, daily step numbers decrease, and as annual family income increases, daily step number increases as well. As the number of the children increases, there occurs a decrease in the daily step numbers, especially of the women.

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