

Investigation the physical activity level of academics: Çanakkale sample

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Abstract

The aim of this study was to investigate the physical activity level (PAL) of academics. Totally 229 academics between 25-60 ages who were work in 10 different faculties in Çanakkale Onsekiz Mart University participated in to study voluntary. International physical activity questionnaire (IPAQ) short form used to collect data. SPSS 17.0 used to analysis. Kruskal-Wallis test used to compare groups and Mann Whitney-U test used to compare genders. Findings accepted significant at $p < 0.05$ level. Analyses showed that: academics average PAL was 1541.1 ± 2160.9 MET-dk/hf, 34.1% of total were low active, 52.8% of total were moderate active, and 13.1% of total were high active according to IPAQ classification. Faculty of tourism had highest PAL (3009.7 ± 157.8 MET-dk/hf) and, PAL of faculty of agriculture was statistically higher than Faculty of Engineering and Architecture, Faculty of Medicine and Faculty of Fisheries. According to academic level Lecturer had highest PAL (2545.1 ± 3602.9 MET-dk/hf), and assistant professor had lowest PAL (1275.4 ± 1329.1 MET-dk/hf). Also analyses proved that; associate Professor, assist professors and research assistants, had statistically lower PAL than lecturer and professor ($p < 0.05$). As a result PAL of academics was differing from each other. It can be say that, to decreasing the differences of PAL between academics, the number of recreational areas should be well planned and academics should be encourage to doing exercise.

Keywords: Academics, health, physical activity, sport, university.

INTRODUCTION

Sedentary lifestyle increased with technological innovations. These innovations bring more leisure time but at the same time the quality of physical activity level was decreased by the machines. Increasingly, people are moving to a more passive environment. This situation can explain as the term is inactivity. Inactivity is the physical activity level that includes less than 150 minutes physical activity per week. It is advised that people should do 30 minutes moderate or vigorous physical activity per day at least. (14). It is reported that inactivity associated with cardiovascular disease, obesity, type 2 diabetes, depression and some types of cancer (4). Thus it is possible to say that to avoiding the inactivity frequency of physical activity should increase. Physical activity is the term that happens with the body movement caused by the operation of skeletal muscles and increases energy expenditure above basal metabolic level (1,10,12). Also researcher noticed that being physically active help reduce the risk of heart and circulatory system disorders and

diseases such as depression, hypertension, obesity and colon cancer. Beside it is reported that physical activity is the main way of ensuring energy balance and weight control (6).

Experts classify the physical activity according to type, intensity and purpose (4). Physical activity of a person or group is often classified according to the environment of the activity. Common categories are work, home and home environment activities, people care, leisure, includes sports or transportation (15). In addition leisure activity includes racing sports, recreational activities (biking, mountain climbing, etc.) and can be divided into sub-categories such as exercise training (7).

Being academics include long duration of scientific activity and busy work schedule. Because of this schedule academics are physically being pushed into inactivity and spend more time sitting down. Scientific studies and its reporting process caused academics to spend more time on the computer. For healthy living it is unwanted situation because experts advised that people should

do at least 30 minutes moderate exercise per a day. Do academics follow this recommendation? What is the Physical Activity Level (PAL) of academics? There was no similar study in literature which was investigated the PAL of academics in Çanakkale Onsekiz Mart University. Thus the aim of this study was to investigate the PAL of academics in Çanakkale Onsekiz Mart University and compare it according to departments.

MATERIAL & METHOD

Totally 229 academics who were between 25-60 ages and work in 10 different departments in Çanakkale Onsekiz Mart University participated in to the study voluntary.

Participants

As a report of University council in the period of 2010-2011 that totally 532 academics work in Centre and Terzioğlu campus in Çanakkale Onsekiz Mart University. Frequencies of academics showed according to department in Table 1.

Table 1. Frequencies and sample size of academics as a department.

Departments	f	Sample (n=f*0,42)
Faculty of education	115	48.27
Faculty of art and science	136	57.09
Faculty of medicine	47	19.73
Faculty of agriculture	66	27.71
Faculty of theology	15	6.30
Faculty of fine arts	35	14.69
School of physical education and sport	15	6.30
Faculty of engineering	54	22.67
Faculty of fisheries	36	15.11
Faculty of tourism	13	5.46
Total	532.0	223.32

Source: (http://www.comu.edu.tr/genelbilgiler/personel_dagilimi.htm)

Researchers advised that if the population were 10.000, sample size can be 370 with the 0.05 tolerance (5). Beside to avoiding to mistake sample size formula which was use when known population as reported by Sümbüloğlu (13) used to finding sample size ($N=Nt^2pq/d^2(N-1)+t^2pq$) ($n=532 \times 1,96^2 \times 0,5 \times 0,5 / 0,05^2 (532-1) + 1,96^2 \times 0,5 \times 0,5$). Sample size was found 224. Also to finding sample size of departments that formula used as below ($n=223/532=0.42$).

Data collection

International Physical Activity Questionary Short Form (IPAQ-SF) which was validated and reliabilited for international by Craig et al. (8) and

was validated and reliabilited for Turkish by Öztürk (11) used to collect data.

Scoring the IPAQ-SF was described as below (9): Short form includes 7 items which were ask the duration of sitting, walking, moderate exercise and vigorous exercise in last seven days. Physical activity level described according to metabolic equivalent of task (MET) scores which were calculated by multiplying the amount of minutes with 8 (vigorous), 4 (moderate), 3.3 (walking), or 1.3 (sitting). MET is the term that the oxygen consumption per kg in one minute (kg/min.). Total MET scores divided the persons in three categories that inactive; if the scores were lower than 600 MET-kg/min, minimum active; if scores between 600 – 3000 MET- kg/min and persons as inactive and very active; if scores were higher than 3000 MET- kg/min.

Statistical analysis

SPSS used to analysis. Because of the abnormal distribution of scores Kruskal-Wallis and Mann Whitney- U tests used to investigate differences between groups. Findings set as $p < 0.05$ level.

RESULTS

Table 2. Demographic variables of participants.

Variables	Minimum	Maximum	Mean	SV
Age	23	66	38,9	9,1
Body Height (cm)	145	193	173,1	7,9
Body weight (kg)	43	130	78,4	14,4
BMI (kg/m ²)	16	47	26,1	4,1
Work year	1	40	12,9	9,1
Salary (TL)	1800	5000	2535,9	652,6

SV: Standart Variation

Findings about demographic variables of participants were showed in Table 2. According Table 2; average age of participants were 38.9 ± 9.1 year and average work years were 12.9 ± 9.1 years found. Table 2 also showed that average BMI scores of participants were 26.1 ± 4.1 kg/m². So it is possible to say that population of the study was overweight according to BMI classification.

Findings about the physical activity level (PAL) of participants according to departments were showed in Table 3. According Table 3; total population of average PAL scores were 1541.1 ± 2160.9 MET-min/week found. So it is possible to say that population was minimum active according to IPAQ-Sf classification. When compare the departments of PAL scores, it is found that Faculty of Tourism had statistically higher PAL scores than the others (3009.7 ± 1575.8 MET-

min/week). Beside faculty of agriculture and theology had statistically higher PAL scores than the faculty of medicine, engineering and fisheries ($P < 0.05$).

Findings about the physical activity level (PAL) of participants according to academic titles were showed in Table 4. Table 4 showed that Instructors had statically higher PAL scores than the others (2545.1±3602.9 MET-min/week). However according to IPAQ-SF classification it is possible to say that instructors were minimum active. On the other hand it is found that assistant professors had statistically lower PAL scores than the others (1275.4±1329.1 MET-min/week). When the compare the PAL scores

it is found that Associate Professor, Assistant Professor and Research Assistants had statistically lower PAL scores than the Instructors, Lecturers and Professors ($p < 0.05$).

Findings about the classification according to PAL were showed in Table 5. According to table %34.1 of population were inactive (>600 MET-min/week), %52.8 of population were minimum active (600 – 3000 MET-min/week), and %13.1 of population were the very active (<3000 MET-min/week) as found. According to findings it is possible to say that majority of participants were minimum active.

Table 3. Comparison the physical activity scores according to departments.

Departments	N	%	Mean	SV	χ^2	df	p
Faculty of education	49	21.4	1377.6	1152.9			
Faculty of art and science	58	25.3	1468.6	2229.9			
Faculty of medicine	20	8.7	1056.2 ^{bc}	1038.9			
Faculty of agriculture	28	12.2	2301.5 ^b	3680.1			
Faculty of theology	7	3.1	2482.5 ^c	1943.2			
Faculty of fine arts	15	6.6	1756.9	3545.5	30.29	9	0.001
School of physical education and sport	7	3.1	2155.9	901.5			
Faculty of engineering	23	10.0	974.6 ^{bc}	1170.1			
Faculty of fisheries	16	7	961.1 ^{bc}	1396.7			
Faculty of tourism	6	2.6	3009.7 ^a	1575.8			
Total	229	100.0	1541.1	2160.9			

a: Significant differences with tourism and the others.

b: Significant differences with agriculture and medicine, engineering, fisheries.

c: Significant differences with theology and medicine, engineering, fisheries.

Table 4. Comparison the PAL scores according to academic titles.

Academic Titles	N	%	Mean	SV	χ^2	df	p
Professor	24	10.5	2021.5	3900.2			
Associate Professor	38	16.6	1320.4	2428.4			
Assistant Professor	72	31.4	1275.4	1329.1			
Lecturer	24	10.5	2054.1	2858.1			
Instructor	7	3.1	2545.1	3602.9	14.557	6	0.024
Research Assistant	60	26.2	1481.2	1110.7			
Expert	4	1.7	1603.5	1481.3			
Total	229	100.0	1541.1	2160.9			

Table 5. Frequencies according to PAL classification.

Classification	n	%
Inactive	78	34.1
Minimum active	121	52.8
Very active	30	13.1
Total	229	100.0

Table 6. Comparison the PAL scores according to gender.

Gender	N	Mean	Sv	z	p
Female	74	1221.6	1217.7	-0.982	0.326
Male	155	1693.7	2477.5		

Comparison the PAL scores according to gender were showed in Table 6. Mann Whitney U-test performed to comparison and the findings showed that both two genders had similar PAL scores as minimum active and statistical analysis proved that there was no significant differences between genders ($p>0.05$).

DISCUSSION

The aim of this study was to investigate the PAL of academics Çanakkale Onsekiz Mart University and compare it according to departments. Data analysis showed that average PAL score of participants were 1541.1 ± 2160.9 MET-min/week and they were minimum active classified. Also they were % 52.8 of participant as found. Limited studies reported that participation rates of academics to physical activity were rather low (2). Beside Vural et al. (16) noticed that %48.9 of academics had low physical activity level. Recent study showed that findings were similar in literature.

Other important findings in this study were significant differences between departments and academic titles according to PAL scores ($p<0.05$). It is found that Faculty of Tourism had statistically higher PAL scores than the others (3009.7 ± 1575.8 MET-min/week). Beside faculty of agriculture and theology had statistically higher PAL scores than the faculty of medicine, engineering and fisheries ($P<0.05$). There is need more studies to discuss this findings. But it is possible to say that higher PAL scores may cause having more practical courses in the faculty of tourism than the others.

Recent study found that according to academic title while Instructors had statically higher PAL scores, assistant professors had statistically lower PAL scores. These findings may cause of the having more practical course of instructors than the others. When the compare the PAL scores it is found that Associate Professor, Assistant Professor and Research Assistants had statistically lower PAL scores than the Instructors, Lecturers and Professors ($p<0.05$). These findings were expected but result about Professors may cause of having less course time than the others and they may found more

leisure time to physical activity. However as an opposite findings Arslan et al. (2) reported that associate professors were more participated in to physical activity than others. That study performed among professors, associate professors and assistant professors. So that studies should performed among all academics.

Recent study showed that males had higher PAL scores than females but there were no significant differences. Similar findings were found by Arslan et al. (2). However Vural et al. (16) noticed that males had statistically higher PAL scores than females. Similar findings reported by Azevedo et al. (3).

As a result of this study academics were minimum active and there were statistically differences between departments and academic titles according to PAL scores. These differences may cause differences the number of theoretical and practical courses among academics and departments. Also it may cause of academics cannot find time to do physical exercise. According to findings it is possible to say that to increasing the PAL scores of academics, theoretical and practical courses should be well planned, the number of recreational areas should be well planned and academics should be encourage to doing exercise any effective strategies.

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