

## Relationship between Physical Activity Levels and Internet Addiction of Adults

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### Abstract

**Objective:** It is important to assess internet addiction in adult individuals. In this study, it is aimed to determine the relationship between the level of physical activity and internet addiction of adult.

**Research Methodology:** The study was conducted with face-to-face interviews with a total of 100 adult individuals. In gathering the data; information form prepared by researchers questioning socio-demographic information of individuals, International Physical Activity Questionnaire Short Form which evaluates the physical activity levels of the elderly and Young Internet Addiction Test Short Form which evaluates internet addiction status. Research is planned in a descriptive relational type. The sample of the research was created by adult individuals who came to an institution for training. In determining the sample of the research, the universal sampling method was used.

**Results:** When the participants' physical activity levels and internet addiction scale mean scores were evaluated; 18.6% were found to be inactive, 43.92% to be minimal active and 37.33% to be very active. The average score of Internet addiction scale was  $47.24 \pm 3.25$ . When the relationship between participants' physical activity and internet dependency was evaluated, a moderate relation was found between physical activity and internet addiction in the negative direction ( $p < 0.05$ ).

**Conclusion:** When the results obtained from the study are evaluated, women, marriages, primary school graduates and those with internet usage time of 11-15 hours are in the risk group for physical activity. The lower the level of physical activity, the higher is the internet addiction.

**Keywords:** Internet addiction; Physical activity; Adult

### Introduction

Internet dependency can be defined as a condition that cannot overcome the desire for overuse of the internet, cannot spend time without being connected to the internet, and causes the deterioration of work, social and family life. Internet addiction is a type of addiction that can be seen at any age [1,2] i.e., psychosocial effects such as depression [3] loneliness [4], perceived stress [5-7]. However, internet addiction has an effect on physical health besides its effect on psychosocial situation.

In a study, it is stated that internet addiction affects the eating habit of the individual and causes the increase of the body mass index of the individuals [8,9]. This shows that internet addiction is caused by inactivity and that individuals are sedanter life survivors. In addition to this, in a study conducted in the scope of leisure time evaluation, it was found that those who engage in physical activities have a higher rate of internet use and loneliness than those who do regular physical activity [1,2]. Alaca's study also suggests that internet addiction is beginning to become a major problem and that it may lead to people's physical activities, depression situations, and especially musculoskeletal problems affecting the neck [10,11].

One of the methods that can be used to cope with internet addiction is regular physical activity. In a study that did not examine the relationship between internet addiction and physical activity in students, it was found that those who do not perform any physical activity have a significantly higher score on internet addiction [12]. In another study that tackled the relationship between physical activity and internet addiction, it was found that the increase in physical activity in students reduced the problematic internet use [13]. Similarly, in a study conducted in our country, problematic internet usage rate was found high in students who had low physical activity [14]. Despite the fact that internet addiction is not seen in all age groups and genders,

student studies are found in studies conducted in this respect. It is also important to evaluate internet addiction in adult individuals. In this study, it is aimed to determine the relationship between the level of physical activity of adult individuals and internet addiction.

### Research Questions

1. Is there a relationship between physical activity and internet addiction?
2. Does it affect sociodemographic characteristics and physical activity levels?
3. Do socio-demographic characteristics affect the level of internet addiction?

### Research Methodology

#### Design

Research is planned descriptive relational type. The universe of the research was created by adult individuals who came to an institution for training. In determining the sample of the research, the universal sampling method was used.

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## Sample and setting

Study population and selected according to the inclusion and exclusion criteria in total 246 individuals. Since the prevalence is not known, the frequency of occurrence is 50%, the sample is calculated as 91 individuals with 5% standard deviation and 95% confidence interval. The study was conducted with face-to-face interviews with a total of 100 adult individuals. Those who are 18 years of age or older to work, those who use the internet in daily life, and those who have primary education or higher education are included. Those who do not comply with these criteria are excluded from the study. In gathering the data; sociodemographic questionnaire prepared by researchers questioning socio-demographic information of individuals, "Short Form of International Physical Activity Questionnaire" evaluating physical activity levels of individuals and "Young Internet Addiction Test Short Form" evaluating internet addiction status were used.

## Socio-demographic questionnaire

The socio-demographic questionnaire form included demographic questions such as age, gender, educational status, and marital status, presence of internet connection in the place of residence, perceived socioeconomic level and daily internet usage time.

## International physical activity questionnaire

In this study, the short form of the International Physical Activity Questionnaire was used to determine the physical activity levels of the individuals. For this survey, conducted by the International validity and reliability study of Craig, validity and reliability study of university students in Turkey are made by Ozturk. The criterion is that each activity should be done at least 10 minutes at a time. A score of "MET-minute/week" is obtained by multiplying the minutes, days and MET values (times of resting oxygen consumption). Physical activity levels were found to be physically inactive (<600 MET/week), low physical activity (600-3000 MET-min/week) and adequate physical activity (> 3000 MET- min/week). In the calculation of energy consumption for physical activities, the weekly duration (minutes) of each activity and the MET energy values for the International Physical Activity Questionnaire were multiplied. Thus, for each individual, energy expenditures related to severe, moderate, walking, sitting and total physical activities were obtained in MET-dk/Week.

## Young Internet Addiction Test Short Form (YİBT-KF)

The Young Internet Addiction Test Short Form (YİBT-KF), a form of Young's internet addiction test converted into a short form by Pawlikowski, Altstötter-Gleich and Brand consists of 12 items aimed at measuring internet addiction. The scale is rated with a Likert score of 5. The Turkish version of the scale was carried out by Kutlu [14]. Adaptation work was done on both adolescent and university students. The factor structure measured by Kutlu [14] has been examined. When the variance explained by the scale is examined, it is seen that university students and adolescents explain the adequacy of variance (39.52% for university students and 48% for adolescents). According to the scores of adaptation index of the scale, both university students and adolescents showed good agreement [university students ( $\chi^2=144.93$ ,  $SD=52$ ,  $RMSEA=0.072$ ,  $RMR=0.70$ ,  $GFI=0.93$ ,  $AGFI=0.90$ ,  $CFI=0.95$  and  $IFI=0.91$ ), adolescents ( $\chi^2=141,934$ ,  $SD=51$ ,  $RMSEA=0.080$ ,  $GFI=0.90$ ,  $CFI=0.90$  and  $IFI=0.90$ ). Factor loadings of the scale were ranked between 0.33 and 0.67 in university students and between 0.49 and 0.71 in adolescents. Test-retest reliability of the scale was found as 0.93 for university students and .86 for adolescents. Corrected item total correlation coefficients of the scale ranged from 0.63 to 0.62 in

university students and from 0.47 to 0.65 in adolescents. There is no substance scored tersten on the scale. Scores that can be taken from the scale range from 12 to 60. High scores on the scale indicate high levels of internet dependency and low scores indicate low internet dependency.

## Data collection

The data of this study were collected by face-to-face interview technique from adult individuals who came to an institution.

## Ethical and legal dimension of the study

In order to be able to carry out the research, it is started after the institutional leave and approval from the individuals. The verbal permission of the individual was taken before the investigation began. The principle of "Illuminated Consent" has been fulfilled by the principle of "autonomy", which states that patients can be withdrawn without seeking them whenever they want, by explaining the purpose of the research, the duration and the procedures to be carried out during the research. Before the forms to be used in the research were given, necessary explanations were made orally and care was taken to create a silent environment with little stimulation during application.

## Evaluation of data

After the data were collected, the option that each individual indicated for each item on the scales was entered into the SPSS 21 program by the researchers and the total scores of the individuals from the scales were calculated. Pearson's correlation analysis was used to evaluate the relationship between the number and percentage distributions of the study's demographic data, the relationship between socio demographic characteristics, the International Physical Activity Questionnaire and the Young Internet Addiction Test Short Form, and the International Physical Activity Questionnaire and the Young Internet Addiction Test Short Form. The results were assessed at 95% confidence interval and  $p<0.05$  significance level.

## Results

The average age of participants was  $28.27 \pm 3.14$ , 64.8% were male, 35.2% were female, 45% were university graduates, 69.2% were single, all had internet connection and 52.7%.

When the participants' physical activity levels and internet addiction scale mean scores were evaluated; 18.6% were found to be inactive, 43.92% to be minimal active and 37.33% to be very active. The mean score of Internet addiction scale was  $47.24 \pm 3.25$  (Table 1). When the socio-demographic characteristics and physical activity levels of the participants were evaluated, it was found that 28.54% of the males were very active and 8.78% of the females were very active ( $p<0.05$ ), while 8.78% of the married and 24.15% of the females were very active statistically significant ( $p<0.05$ ), while it was statistically significant ( $p<0.05$ ) that the percentage of primary school graduates of 19.76% of high school graduates and 25.25% of college graduates was minimal ( $p<0.05$ ) It was found statistically significant ( $p<0.05$ ) that 18.66% of the patients who were 1-5 hours, 10.98% of the patients who were 6-10 hours and 4.39% of those who were 11-15 hours were found to be minimally active (Table 2).

When the relationship between physical activity and internet dependency of participants was assessed, there was a moderate relation between physical activity and internet dependency in negative direction ( $p<0.05$ ). The lower the level of physical activity, the higher is the internet addiction (Table 3).

Measurement	n	%
<b>Inactive</b>		
(<600 MET-min/week)	17	18.66
<b>Minimal Active</b>		
(600-3000 MET-min/week)	40	43.92
<b>Çok aktif</b>		
(>3000 MET-min/week)	34	37.33
<b>Internet Addiction Scale</b>	<b>x ± SD</b>	<b>Min-Max</b>
	47.24 ± 3.25	14-58

**Table 1:** Distribution of participants' physical activity levels and internet dependency scale score averages.

Variables	Inactive (<600 MET- min/ week) n (%)	Minimal Active (600-3000 MET- min/week) n (%)	Very Active (>3000 MET- min/ week) n (%)	Scores
<b>Gender</b>				
Female	9 (9.89)	15 (16.47)	8 (8.78)	X <sup>2</sup> =6.241**
Male	8 (8.78)	25 (27.45)	26 (28.54)	p=0.01*
<b>Marital Status</b>				
Married	10 (10.98)	10 (10.98)	8 (8.78)	X <sup>2</sup> =1.054**
Single	6 (6.58)	35 (38.43)	22 (24.15)	p=0.01*
<b>Education</b>				
Primary scholl	2 (2.19)	9 (9.89)	6 (6.58)	X <sup>2</sup> =5.243**
High scholl	6 (6.58)	18 (19.76)	9 (9.89)	p=0.03*
University	7 (7.68)	23 (25.25)	11 (12.07)	
<b>Internet Usage Time (days)</b>				
1-5 hours	4 (4.39)	17 (18.66)	27 (29.64)	X <sup>2</sup> =2.476**
6-10 hours	7 (7.68)	10 (10.98)	15 (16.47)	p=0.03*
11-15 hours	7 (7.68)	4 (4.39)	-	

\*p<0.05

\*\* Yates corrected chi-square analysis was performed because the observed number is less than 25 in the numbers.

**Table 2:** Participants' socio-demographic characteristics and physical activity levels.

Variables	X ± SD	*r , p
Physical Activity Questionnaire	2186.42 ± 27.03	-0.429
Internet Addiction Scale	47.24 ± 3.25	0.001**

\*r: Pearson correlation analysis, \*\*p<0.05

**Table 3:** Relationship between participants' physical activity and internet addiction.

## Discussion

According to the results obtained from this study, it was revealed that the individuals with more internet use had decreased physical activity levels. The main findings of this study were internet addiction increased, the level of physical activity decreased. This finding is similar to the work of Kim et al. [9] which examines the relationship between smart phone addiction and physical activity. Kim et al. [9] have also found that individuals at risk are overweight and have less muscle mass due to smartphone addiction [15].

Previous studies of the psychological activity have focused on problematic internet use. In a study conducted by Park found a negative association between the level of physical activity and the risk of problematic Internet use in Korean adolescents [16]. Lepp and co-authors reported that cell phone use, like traditional sedentary behaviors, may disrupt physical activity and reduce cardio respiratory fitness. In another study reported that activities such as sitting, standing, walking, and jogging can be recognized with relatively high accuracy using an in-built tri-axial accelerometer, gyroscope and magnetic sensors [17,18].

Problematic internet use suggests that people not only negatively affect their physical activities but also increase the symptoms of depression [19]. Derbyshire and coauthors found that 12.9% students met criteria for limited internet use, 81.8% for mild internet use and

5.3% for moderate to severe Internet use [20]. Variables significantly associated with greater frequency of Internet use included lower Grade Point Average less frequent exercise and indicative of greater depression symptoms. One of the methods that can be used to cope with Internet addiction is regular physical activity. In a study that did not examine the relationship between internet addiction and physical activity in students, it was found that those who do not perform any physical activity have a significantly higher score on internet addiction.

Problematic internet use may result in obesity in people with reduced physical activity. In a study by Li and colleagues, obesity was reported to be high in problematic internet users [21]. However, in the study of, there was no significant relationship between the duration of internet use and television viewing and the body mass index and physical activity duration. The impact of problematic internet use on body mass index or obesity should be investigated in future studies.

## Conclusion

When the results obtained from the study are evaluated, women, marriages, primary school graduates and those with internet usage time of 11-15 hours are in the risk group for physical activity. The lower the level of physical activity, the higher is the internet addiction.

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