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Original Article

# Prevalence of Nicotine Dependence and Internet Addiction among University Students, and Relation between them

Kenan Tastan [1], Zafer Erdin Demirbas [2], Duygu Kavuncuoglu [3], Suat Sincan [1*]

[1] Ataturk University Medical Faculty Department of Family Medicine, Erzurum, Turkey
[2] Ozkurtun No.1 Family Health Center, Gumushane, Turkey
[3] Hatay Health Directorate, Samandag, Hatay, Turkey
* Corresponding author: Suat Sincan E-mail: suat.sincan@atauni.edu.tr ORCID: 0000-0003-3170-2753
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## ABSTRACT

**Background:** Nicotine dependence and internet addiction are two important problems among university student.

**Aims:** We aimed to determine the prevalence of ND and IA among the university students, and to investigate the parameters that affect these clinical problems.

**Study design:** This study is designed as a descriptive, cross-sectional, epidemiological study.

**Methods:** The academicians of Department of Family Medicine formed a questionnaire (9 questions). Turkish versions of Young's Internet Addiction Test (YIAT) and Fagerstrom Test for Nicotine Dependence (FTND) were used as data collection tools. Sample volume was calculated as 1632 students, and a total of 1816 students were randomly selected. In classes, cafes and social fields we spoke to the students and informed them about the study. Voluntaries were requested to answer the questions in the questionnaire and fill the scales.

**Results:** Mean age of the participants was 21.45±2.58 years (range 18-35 years), and 908 (50%) were male. The mean FTND score was 1.18±2.27 (range 0-10). Of the participants, 24.2% were moderate, high or very high nicotine dependent. Binary logistic regression analysis showed that the gender (p=0.000), place of residence (p=0.000), monthly intake (p=0.023) and presence of symptoms of IA (p=0.000) were independent risk factors for smoking. The mean YIAT score was 40.30±14.95 (range 20-100). Of the participants 76% were users without symptom, 19.6% were users with limited symptoms and 4.4% were pathologic internet users. Binary logistic regression analysis showed that gender (0.004), smoking (p=0.001) and the device used for internet connection (p=0.008) are independent risk factors for presence of symptoms of IA. The FTND score was significantly correlated with the YIAT score (Pearson correlation coefficient=0.164, p=0.000).

**Conclusion:** Our results indicate that the prevalence of ND and IA are high among the university students. Also, there is a significant relation between ND and IA. Male gender, living in home alone and a higher monthly income are significant risk factors. The educational and preventive activities should take these risk factors into account.

**Keywords:** nicotine dependency, internet addiction, university students

**Table 1.** Mean FTND and YIAT scores of the participants

| | FTND | | YIAT | |
|---|---|---|---|---|
| | **Mean±SD** | **p** | **Mean±SD** | **p** |
| **Gender** | | | | |
| Male | 1.73±2.6 | 0.000 | 42.0±16.2 | 0.000 |
| Female | 0.63±1.7 | | 38.7±13.4 | |
| **Hometown** | | | | |
| Erzurum | 1.15±2.3 | 0.608 | 40.7±15.7 | 0.374 |
| Out of Erzurum | 1.2±2.3 | | 40.1±14.4 | |
| **Place of residence** | | | | |
| Dormitory | 0.92±2.1 | 0.000 | 40±13.7 | 0.690 |
| At home with his family | 1.14±2.3 | | 40.5±15.7 | |
| At home with friends | 1.65±2.5 | | 41.0±16.0 | |
| Home alone | 2.51±3.1 | | 39.2±17.8 | |
| **Monthly income** | | | | |
| Between 0-500₺ | 0.88±2.0 | 0.000 | 29.2±13.7 | 0.007 |
| Between 500-1000₺ | 1.4±2.4 | | 41.7±15.7 | |
| >1000₺ | 1.44±2.6 | | 40.2±14.9 | |
| **The device used for internet connection** | | | | |
| Cellular phone | | | 40.3±14.8 | 0.064 |
| Tablet | | | 42.1±16.8 | |
| Notebook | | | 38.6±14.3 | |
| Personel Computer | | | 42.3±15.8 | |
| **Hours of internet connection** | | | | |
| Between 08:00-16:00 | | | 39.9±14.8 | 0.000 |
| Between 16:00-22:00 | | | 29.0±14.5 | |
| After 22:00 | | | 42.3±15.3 | |
| **Internet addiction levels** | | | | |
| User without symptom | | | 1.0±2.1 | 0.000 |
| User with limited symptoms | | | 1.7±2.8 | |
| Pathologic internet user | | | 2.1±3.0 | |

FTND: Fagerstrom Test for Nicotine Dependence; YIAT: Young's Internet Addiction Test

## INTRODUCTION

Nicotine dependence (ND) is a disorder classified among the drug addictions, and it is one of the most important reasons of mortality and morbidity. It has been observed that smoking has been decreased over the years in developed countries, however, it is increasing in developing and underdeveloped countries.

Internet overuse or internet addiction (IA) is a relatively new clinical condition [1,2], about that, manuscripts are being reported all over the world nowadays [3]. Pathological overuse and its' results like withdrawal from social life, deterioration in interpersonal communication, problematic marriages, decrease in academical success rates, problems in personal evolution, financial problems, complaints like insomnia and fatigue, and physical problems due to long standing sitting with computers are counted as the negative effects of internet use [4].

University students, who are experiencing one of the most important periods of their life, are particularly under the risk of ND and IA, and there are a limited number of studies evaluating the prevalence of these problems among them. In present study, we aimed to determine the prevalence of ND and IA among the university students, and to investigate the parameters that affect these clinical problems.

## MATERIALS AND METHODS

This descriptive, cross-sectional, epidemiological study is performed in Ataturk University between October 2016 and January 2017. For this study, ethics committee approval was received from the ethics committee of Ataturk University Medical Studies Department Head.

The academicians of Department of Family Medicine formed a questionnaire (9 questions). Turkish versions of Young's Internet Addiction Test (YIAT) [5] and Fagerstrom Test for Nicotine Dependence (FTND) [6] were used as data collection tools.

The participants were grouped as smokers and non-smokers. For smokers the scores for FTND are interpreted as following; total score 0-2=very low dependence, 3-4=low dependence, 5=moderate dependence, 6-7=high dependence, 8-10=very high dependence. The scores for YIAT are interpreted as following: 80-100 points, internet usage is causing significant problems (pathological internet user); 50-79 points, occasional or frequent problems because of the Internet (users with limited symptoms); 20-49 points, average on-line user (users without symptoms). Pathological internet users and internet users with limited symptoms were accepted as internet users with symptoms.

The total number of students in the university was 50000 in 01.01.2016. Sample volume was calculated as 1632 students (universe 50000, confidence interval 95%, power 80%, expected prevalence 2±1%).

Followings were the inclusion criteria; attendance in Ataturk University, age >18 years, voluntary participation and presence of informed consent. A total of 1816 students were randomly selected.

In classes, cafes and social fields we spoke to the students and informed them about the study. Voluntaries were requested to answer the questions in the questionnaire and fill the scales.

**Table 2.** Frequencies of different nicotine dependency levels in terms of different demographic features

| | Non- smoker | | Very low dependence | | low dependence | | Moderate dependence | | High dependence | | Very high dependence | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % |
| **Gender** | | | | | | | | | | | | | | |
| Male | 546 | 60.1 | 104 | 11.5 | 92 | 10.1 | 50 | 5.5 | 72 | 7.9 | 44 | 4.8 | 908 | 100 |
| Female | 767 | 84.5 | 40 | 4.4 | 46 | 5.1 | 22 | 2.4 | 19 | 2.1 | 14 | 1.5 | 908 | 100 |
| **Hometown** | | | | | | | | | | | | | | |
| Erzurum | 513 | 73.0 | 58 | 8.3 | 47 | 6.7 | 29 | 4.1 | 33 | 4.7 | 23 | 3.3 | 703 | 100 |
| Out of Erzurum | 800 | 71.9 | 86 | 7.7 | 91 | 8.2 | 43 | 3.9 | 58 | 5.2 | 35 | 3.1 | 1113 | 100 |
| **Place of residence** | | | | | | | | | | | | | | |
| Dormitory | 649 | 77.8 | 62 | 7.4 | 45 | 5.4 | 23 | 2.8 | 34 | 4.1 | 21 | 2.5 | 834 | 100 |
| At home with his family | 402 | 73.4 | 42 | 7.7 | 40 | 7.3 | 22 | 4.0 | 24 | 4.4 | 18 | 3.3 | 548 | 100 |
| At home with friends | 241 | 61.3 | 37 | 9.4 | 47 | 12.0 | 24 | 6.1 | 29 | 7.4 | 15 | 3.8 | 393 | 100 |
| Home alone | 21 | 51.2 | 3 | 7.3 | 6 | 14.6 | 3 | 7.3 | 4 | 9.8 | 4 | 9.8 | 41 | 100 |
| **Monthly income** | | | | | | | | | | | | | | |
| Between 0-500₺ | 616 | 77.2 | 66 | 8.3 | 52 | 6.5 | 18 | 2.3 | 31 | 3.9 | 15 | 1.9 | 798 | 100 |
| Between 500-1000₺ | 431 | 67.8 | 54 | 8.5 | 56 | 8.8 | 33 | 5.2 | 38 | 6.0 | 24 | 3.8 | 636 | 100 |
| >1000₺ | 266 | 69.6 | 24 | 6.3 | 30 | 7.9 | 21 | 5.5 | 22 | 5.8 | 19 | 5.0 | 382 | 100 |
| Total | 1313 | 72.3 | 144 | 7.9 | 138 | 7.6 | 72 | 4.0 | 91 | 5.0 | 58 | 3.2 | 1816 | 100 |

### Statistical Analysis

Statistical analysis was done by using SPSS 22.0 statistical program.

Number and percent values for categorical data and mean and standard deviation values for numerical data are presented. Chi-square analyses were used for comparison of frequencies, and Student t test for comparison of numerical data were used. Binary logistic regression analysis was used to evaluate the effects of covariates on smoking and presence of symptoms of internet addiction. A p value of <0.05 is considered as statistically significant.

## RESULTS

### Descriptive Features of the Participants

Mean age of the participants was 21.45±2.58 years (range 18-35 years), and 908 (50%) were male. Mean age of the males was 21.84±2.83 years, and the females was 21.07±2.21 years.

### Nicotine Dependence

The mean FTND score was 1.18±2.27 (range 0-10). Of the participants, 24.2% were moderate, high or very high nicotine dependent. Binary logistic regression analysis showed that the gender (p=0.000), place of residence (p=0.000), monthly intake (p=0.023) and presence of symptoms of IA (p=0.000) were independent risk factors for smoking.

Mean FTND scores, smoking frequency and frequencies of different nicotine dependency levels are given in **Table 2**, respectively, in terms of different demographic features.

The mean FTND score of the males was significantly higher than that of females (p=0.000). Frequency of ND was significantly higher among male participants ($x^2$=138.250; p<0.001).

Them mean FTND score of the participants from Erzurum was statistically similar to that of the participants from out of Erzurum (p=0.608). Also, the frequency of ND was not significantly different among two groups ($x^2$=1.806; p=0.875).

The mean FTND score was significantly different in terms of place of residence (p=0.000) and the highest value was detected from participants living in home alone. Also, the frequency of ND (moderate, high, very high) was significantly different in terms of the place of residence ($x^2$=56.101; p<0.001) and the highest values were from the participants living in home alone.

The mean FTND score (p=0.000) and the frequency of ND was significantly different in terms of the monthly income groups ($x^2$=31.927; p<0.001).

**Table 3.** Frequency of different internet addiction levels in terms of the demographic features

| | User without symptom | | User with limited symptoms | | Pathologic internet user | | Total | |
|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % |
| **Gender** | | | | | | | | |
| Male | 650 | 71.6 | 202 | 22.2 | 56 | 6.2 | 908 | 100 |
| Female | 731 | 80.5 | 154 | 17.0 | 23 | 2.5 | 908 | 100 |
| **Hometown** | | | | | | | | |
| Erzurum | 527 | 75.0 | 137 | 19.5 | 39 | 5.5 | 703 | 100 |
| Out of Erzurum | 854 | 76.7 | 219 | 19.7 | 40 | 3.6 | 1113 | 100 |
| **Place of residence** | | | | | | | | |
| Dormitory | 638 | 76.5 | 175 | 21.0 | 21 | 2.5 | 834 | 100 |
| At home with his family | 420 | 76.6 | 96 | 17.5 | 32 | 5.8 | 548 | 100 |
| At home with friends | 291 | 74.0 | 78 | 19.8 | 24 | 6.1 | 393 | 100 |
| Home alone | 32 | 78.0 | 7 | 17.1 | 2 | 4.9 | 41 | 100 |
| **Monthly income** | | | | | | | | |
| Between 0-500 ₺ | 624 | 78.2 | 153 | 19.2 | 21 | 2.6 | 798 | 100 |
| Between 500-1000 ₺ | 465 | 73.1 | 135 | 21.2 | 36 | 5.7 | 636 | 100 |
| >1000 ₺ | 292 | 76.4 | 68 | 17.8 | 22 | 5.8 | 382 | 100 |
| **The device used for internet connection** | | | | | | | | |
| Cellular phone | 1002 | 76.1 | 255 | 19.4 | 60 | 4.6 | 1317 | 100 |
| Tablet | 27 | 73.0 | 8 | 21.6 | 2 | 5.4 | 37 | 100 |
| Notebook | 220 | 82.4 | 40 | 15.0 | 7 | 2.6 | 267 | 100 |
| Personal Computer | 132 | 67.7 | 53 | 27.2 | 10 | 5.1 | 195 | 100 |
| **Hours of internet connection** | | | | | | | | |
| Between 08:00-16:00 | 291 | 78.4 | 65 | 17.5 | 15 | 4.0 | 371 | 100 |
| Between 16:00-22:00 | 667 | 78.3 | 155 | 18.2 | 30 | 3.5 | 852 | 100 |
| After 22:00 | 423 | 71.3 | 136 | 22.9 | 34 | 5.7 | 593 | 100 |
| **Smoking** | | | | | | | | |
| Non-smoker | 1037 | 79.0 | 231 | 17.6 | 45 | 3.4 | 1313 | 100 |
| Smoker | 344 | 68.4 | 125 | 24.9 | 34 | 6.8 | 503 | 100 |

### Internet Addiction

The mean YIAT score was 40.30±14.95 (range 20-100). Of the participants 76% were users without symptom, 19.6% were users with limited symptoms and 4.4% were pathologic internet users.

Binary logistic regression analysis showed that gender (0.004), smoking (p=0.001) and the device used for internet connection (p=0.008) are independent risk factors for presence of symptoms of IA.

The mean YIAT score of the males was significantly higher than that of females (p=0.000). Frequencies of users with limited symptoms and pathologic internet users were significantly higher among male participants ($x^2$=25.008; p<0.001) and smokers ($x^2$=24.417; p<0.001).

Them mean YIAT score of the participants from Erzurum was statistically similar to that of the participants from out of Erzurum (p=0.374). Frequencies of users with limited symptoms and pathologic internet users were similar among participants from Erzurum. and those from out of Erzurum ($x^2$=3.965; p=0.138).

Although the mean YIAT score was not significantly different in terms of place of residence (p=0.690), frequencies of users with limited symptoms and pathologic internet users were significantly different in terms of the place of residence ($x^2$=14.491; p=0.025).

The mean YIAT score was statistically different in terms of the monthly income (p=0.007), and the frequencies of users with limited symptoms and pathologic internet users were significantly different in terms of monthly income ($x^2$=12.446; p=0.014).

Although the mean YIAT score was not statistically different in terms of the device used for internet connection (p=0.06), the frequencies of users with limited symptoms and pathologic internet users were significantly different ($x^2$=14.315; p=0.026).

**Table 4.** The frequencies of internet addiction levels in different nicotine dependence levels

| | Internet addiction level | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | User without symptom | | User with limited symptoms | | Pathologic internet user | | Total | |
| **Nicotine dependence level** | N | % | n | % | N | % | n | % |
| Very low dependence | 109 | 75.7 | 29 | 20.1 | 6 | 4.2 | 144 | 100 |
| Low dependence | 99 | 71.7 | 30 | 21.7 | 9 | 6.5 | 138 | 100 |
| Moderate dependence | 54 | 75.0 | 15 | 20.8 | 3 | 4.2 | 72 | 100 |
| High dependence | 52 | 57.1 | 29 | 31.9 | 10 | 11.0 | 91 | 100 |
| Very high dependence | 30 | 51.7 | 22 | 37.9 | 6 | 10.3 | 58 | 100 |

The mean YIAT score was statistically different in terms of the hours of internet connection (p=0.000), also the frequencies of users with limited symptoms and pathologic internet users were significantly different in terms of hours of internet connection ($x^2$=11.652; p=0.020).

**Relation between Nicotine Dependence and Internet Addiction**

The mean FTND scores of participants with different IA levels was significantly different (p<0.05), and the FTND score was significantly correlated with the YIAT score (Pearson correlation coefficient=0.164, p=0.000).

The frequencies of IA levels in different ND levels are given in **Table 4**.

Among students with high and very high ND, frequency of the internet users without symptom was clearly lower; nevertheless, frequencies of users with limited symptoms and pathologic internet users were clearly higher. Difference of the frequencies was significant ($x^2$=31.927; p<0.001).

## DISCUSSION

Smoking is a risk factor for the six of the most frequent eight reasons of death, and also it is the single greatest preventable cause of death in the world today [7]. Nevertheless, reports [8-10] are indicating a high frequency of ND among university students.

Although rapid progress and widespread of technology makes our life easier, it brings a negative set of results with itself. Excessive and uncontrolled use of internet has been resulted in a new addiction type named IA. Widespread of IA is going parallel to widespread of internet usage. In our country, there are not enough studies among this area.

Recent studies have indicated a common mechanism for ND and internet addition [11]. However, there are limited number of studies evaluating the relation between ND and IA [12]. Our study ensures important data indicating the relation of both problems.

University life is an important part of the youth that they face many new conditions and problems. During this period, they look for various way outs. Among them, the easiest and swift ways are smoking and internet, today.

**Nicotine Dependence**

In our country frequency of ND is reported between 25-40% [10] among university students. Studies from different countries indicates similar rates (29%-46.7%) [8-9]. The frequency of ND (27.7%), in our study, is similar to previously reported rates. The mean FTND score was 1.18±2.27 (range 0-10), and was indicating a "low dependence" level. Also, regression analysis indicates that the gender, place of residence, monthly intake and presence of symptoms of IA are independent risk factors for smoking among university students.

Present studies indicate a higher frequency of ND among males than females [8-10,13], as in our study. That may be a result of male predominance in all societies, more acceptability of males' smoking and more prevalence of economic freedom among males. Although ND is more prevalent among males, recent studies indicate an increase in its' rate among young females [14].

Relation of ND with hometown of the students has not been investigated previously. In our study, frequency of ND among students from ……. and from other cities did not show a statistically significant difference (p>0.05). Antismoking attitude of the state countrywide and countrywide antismoking educations in the high schools may have a role on this result.

As in other studies [10,15], among students living in home alone, the prevalence of ND was the highest. It seems that living home alone and with friends has an important effect on ND prevalence. That may be a result of lack of family control and lack of antismoking rules (contrast to state dormitories) in student homes, and lower social support from family members.

Although smoking is an expensive habit, it is a common problem [16]. Our study indicates that ND is more common among students with a higher monthly intake. High cigarette prices may be a preventive measure for university students.

**Internet Addiction**

Among university students IA prevalence is reported between 0.3% and 38% [17-19]. In our study 19.6% of the participants were internet users with limited symptoms and 4.4% were pathological internet users. Usage of different scales, cultural differences and times of the studies are possibly the most frequent reasons of this wide range. Regression analysis indicates that gender, smoking and the device used for internet connection are independent risk factors for presence of symptoms of IA.

Although some studies indicate a similar IA prevalence among males and females [3,20-23], many others had found a higher prevalence among males [4,24-26], as in our study. That may be related to the cultural features of the societies. Male dominance in some societies may result in lack of family control over males, and negative social support over females, and may result in pathological attitudes like IA among males.

Relation of IA with hometown of the students has not been investigated previously. In our study, frequency of pathological internet users among students from Erzurum and from other cities did not show statistically significant difference ($p>0.05$). Presence of wide free internet connection points in the university, in the private dormitories and cafes may have an important impact on this result. Also, widespread of cheaper internet connection via the mobile devices eliminated the dependence to the immobile personnel computers for the students from other different cities.

Although some studies do not indicate a difference in the prevalence of IA in terms of place of residence [26]**,** Alaçam et al. [27] has found a difference, similar to our study. Our study indicates a lower prevalence of pathologic internet user among students living in state dormitories. Absence of free internet connection and special rooms in state dormitories may have an effect on this result.

Some studies had found a higher prevalence of IA among students with higher monthly intake [28]. However, some others do not indicate a difference in the prevalence of IA in terms of monthly intake [29]. In our study, the prevalence of pathologic internet users was significantly higher among students with higher monthly intake. High monthly intake resolves the spending problem due to the prices of internet connection.

We found a significantly different prevalence of IA in terms of the devices used for internet connection. It was higher among students who mainly used mobile phones and personal computers for internet connection. Widespread of high technology mobile phones made it easy to connect internet everywhere. So, students tend to use it for internet connection. However, for more complicated works, like playing games and designing scientific studies, a PC is more suitable. So, two devices are more frequently used for connection and as a results pathologic internet users are more prevalent among the users of these two device.

To our knowledge, there is not a study evaluating the frequency of IA among internet users of different time intervals of the day. Our study indicates a significantly higher prevalence of pathologic internet users among the students who uses internet during the night times. The students are in school during the daytime and they can find more time for internet connection during the night times. Also, probably they are alone and more free for internet during night time.

**Relation between Nicotine Dependence and Internet Addiction**

Present studies [30] evaluating the relation between ND and IA, that had been performed on high school students, indicate lack of a relation between two entities. Limited number of studies, performed on university students [11] indicate an increase in prevalence of IA with increasing level of ND. In our study, the positive and significant correlation between FNBT and YIAT scores is supporting this result.

**CONCLUSION**

Our results indicate that the prevalence of ND and IA are high among the university students. Also, there is a significant relation between ND and IA. Frequency of ND and IA were significantly higher among males, participants living in home alone and participants with a higher monthly income. The educational and preventive activities should take these risk factors into account.

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## REFERENCES


1. Young KS. Internet addiction: symptoms, evaluation and treatment. In: L. Vande Creek, T. Jackson (Eds.) Innovation in clinical practice: a source book. vol. 17. Professional Resource Press, Sarasota, FL; 1999:19-31.
2. Griffiths MD, Dancaster I. The effect of Type A personality on physiological arousal while playing computer games. Addictive Behaviors 1995;20:543-8. (doi: 10.1016/0306-4603(95)00001-S).
3. Kim K, Ryu E, Chon MY, Yeun EJ, Choi SY, Seo JS, et al. Internet addiction in Korean adolescents and its relationship to depression and suicidal ideation: a questionnaire survey. Int J Nurs Stud 2006;43:185-92. (doi: 10.1016/j.ijnurstu.2005.02.005).
4. Chou C, Condron L, Belland JC. A review of the research on internet addiction. Educational Psychology Review 2005;17:363-88. (doi: 10.1007/s10648-005-8138-1).
5. Balta ÖÇ, Horzum MB. The factors that affect internet addiction of students in a web based learning environment. Ankara University, Journal of Faculty of Educational Sciences 2008;41:187-205. (doi: 10.1501/Egifak_0000000211).
6. Uysal MA, Kadakal F, Karşidağ C, Bayram NG, Uysal O, Yilmaz V. Fagerstrom test for nicotine dependence: reliability in a Turkish sample and factor analysis. Tuberk Toraks. 2004;52:115-21.
7. World Health Organization Report on the global tobacco epidemic, 2008. Available at: www.who.int/tobacco/mpower/2008/en/index.html
8. Andrade A, Duarte P, Barroso L, Nishimura R, Alberghini D, Oliveira L. Use of alcohol and other drugs among Brazilian college students: effects of gender and age. Rev Bras Psiquiatr. 2012;34:294-305. (doi: 10.1016/j.rbp.2012.02.002).
9. Sutfin EL, McCoy TP, Berg CJ, Champion H, Helme DW, O'Brien MC, et al. Tobacco use by college students: a comparison of daily and nondaily smokers. Am. J. Health Behav. 2012;36:218-29. (doi: 10.5993/AJHB.36.2.7).
10. Dayı A, Güleç G, Mutlu F. Prevalence of tobacco, alcohol and substance use among Eskisehir Osmangazi University students. Dusunen Adam: The Journal of Psychiatry and Neurological Sciences 2015;28:309-18. (doi: 10.5350/DAJPN2015280402).
11. Sung J, Lee J, Noh HM, Park YS, Ahn EJ. Associations between the Risk of Internet Addiction and Problem Behaviors among Korean Adolescents. Korean J Fam Med. 2013;34:115-22. (doi: 10.4082/kjfm.2013.34.2.115).
12. Morioka H, Itani O, Osaki Y, Higuchi S, Jike M, Kaneita Y, et al. Association between smoking and problematic Internet use among Japanese adolescents: Large-scale nationwide epidemiological study. Cyberpsychology, Behavior, and Social Networking 2016;19:557-61. (doi: 10.1089/cyber.2016.0182).
13. Atwoli L, Mungla PA., Ndung'u MN, Kinoti K.C, Ogot EM. Prevalence of substance use among college students in Eldoret, Western Kenya. BMC Psychiatry. 2011;11:34. (doi: 10.1186/1471-244X-11-34).
14. Özcebe H, Doğan BG, İnal E, Haznedaroğlu D, Bertan M. Smoking Water Pipe Habits of University Students and Related Sociodemographic Characteristics. TAF Prev Med Bull 2014;13:19-28. (doi: 10.5455/pmb.1-1364566285).
15. Saraçli Ö. Zonguldak Karaelmas Üniversitesi Öğrencilerinde Sigara Alkol ve Madde Kullanımı İle İlişkili Bireysel ve Psikososyal Faktörler. Unpublished Medical Residency Thesis, Zonguldak Karaelmas University School of Medicine, Department of Psychiatric. Zonguldak 2007.
16. Avcı E, İlhan M, Civil EF, Özdemirkan T, Bumin M. Prevalance of The Tobacco Alcohol and Products Use of a Faculty of Medicine Students and Risk Factors. Bağımlılık Dergisi. 2014;15,48-55.
17. Watters CA, Keefer KV, Kloosterman PH, Summerfeldt LJ, Parker JDA. Examining the structure of the Internet Addiction Test in adolescents: a bifactor approach. Comput Hum Behav. 2013;29:2294-302. (doi: 10.1016/j.chb.2013.05.020).
18. Lee JY, Shin KM, Cho SM, Shin YM. Psychosocial risk factors associated with Internet addiction in Korea. Psychiatr Invest. 2014;11:380. (doi: 10.4306/pi.2014.11.4.380).
19. Lam LT, Peng Z, Mai J, Jing J: The association between internet addiction and selfinjurious behaviour among adolescents. Injury Prev. 2009, 15:403-8. (doi: 10.1136/ip.2009.021949).
20. Greenfield DN. Psychological characteristics of compulsive Internet use: A preliminary analysis. CyberPsychology and Behavior 1999; 2403-12.

21. Kaltiala-Heino R, Lintonen T, Rimpela A. Internet addiction? Potentially problematic use of the internet in a population of 12-18 year old adolescents. Addict Res Theory 2004;12:89-96. (doi: 10.1080/1606635031000098796).

22. Park S, Hong KE, Park EJ, Ha KS, Yoo HJ. The association between problematic internet use and depression, suicidal ideation and bipolar disorder symptoms in Korean adolescents. Aust N Z J Psychiatry 2013;47:153-9. (doi: 10.1177/0004867412463613).

23. O'Reilly M. Internet addiction: a new disorder enters the medical lexicon. Can. Med. Assoc. J. 1996;154:1882-83.

24. Morahan-Martin J, Schumacher P. Incidence and correlates of pathological Internet use among college students. Computers in Human Behavior 2000;16:13-9. (doi: 10.1016/S0747-5632(99)00049-7).

25. Bakken IJ, Wenzel HG, Gotestam KG, Johansson A, Oren A. Internet addiction among Norwegian adults: a stratified probability sample study. Scand J Psychol. 2009;50:121-27. (doi: 10.1111/j.1467-9450.2008.00685.x).

26. Canan F, Ataoglu A, Nichols LA, Yildirim T, Ozturk O. Evaluation of psychometric properties of the Internet addiction scale in a sample of turkish high school students. Cyberpsychol Behav. 2009;13:1-4. (doi: 10.1089/cpb.2009.0160).

27. Alaçam H, Korkmaz A, Efe M, Şengül BC, Şengül C. Screening of alcohol and tobacco addiction in Pamukkale University students. Pamukkale Medical Journal. 2015;8:82-7. (doi: 10.5505/ptd.2015.69077).

28. Batıgün AD, Kılıç N. The Relationships between Internet Addiction, Social Support, Psychological Symptoms and Some Socio-Demographical Variables. Turkish Journal of Psychology 2011;26:1-10.

29. Horzum MB, Balta ÖÇ. Students' achievement, motivation and computer anxiety level in different web based learning environments. H. U. Journal of Education 2008;34:140-54.

30. Choi K, Son H, Park M, Han J, Kim K, Lee B, Gwak H. Internet overuse and excessive daytime sleepiness in adolescents. Psychiatry Clin Neurosci 2009;63:455-62. (doi: 10.1111/j.1440-1819.2009.01925.x).

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