Internet Addiction and Sleeping Quality among College Students in West Turkey

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Abstract

The aim of this study was to determine internet addiction level, it's related some factors and sleeping quality. This cross-sectional study was made among 508 students. A questionnaire form was filled by students under observed. Determination of internet addiction was used by Young Internet Addiction Scale (IAS). Determination of sleeping quality was used by Pittsburgh Sleeping Quality Index (PSQI). In statistical analyses, Mann-Whitney U test, Kruskal-Wallis test and Spearman Correlation Analysis were used. p<0.05 values were accepted as significance. The average score was 30.00±15.99 (min: 0; max: 89) from IAS. The high level of internet addiction was higher in male, high family income, A type character, over-weight/obese, his/ her mother with have a job, have computer at home, have computer own, have internet communication at computer/phone/ home out, first using computer age in 6 years old, everyday using internet user than the others (for each one; p<0.05). There are positive correlation between the scores of IAS and the scores of PSQI. Internet addiction is an important problem in the college students in this study group. This study, positive correlation was found between Internet addiction and poor quality of sleep.

Keywords: Internet addiction, Sleeping quality, College student.

Introduction

Internet addiction is a problem worldwide, especially among young people[1]. Frequency of internet addiction was reported from %11.7 to %15.6 in the some studies from East World[2,3]. Turkey was similar future about internet addiction by results of studies[4,5]. Western World, internet addiction approaches did not make just[6]. Especially among adolescents, internet addiction has been creating more social and health problems since 1980's[7].

Generally, male internet users live in various problems than female. As sexual, pornography, violence etc. important social problems may say between problems depend to be internet user[8,9]. In addition some important health problems as depression, anxiety, suicidal ideation, obesity, sedentary life etc. have been investigating about related internet addiction[10,11]. And a health problem that sleeping disorders may occur depend on to be internet user[10,12]. With this study, determination of level internet addiction among college students, and to investigate some factors' effects to it, and evaluating of sleeping quality were aimed.

Methodology

This study was made 01 March to 30 April 2014. And this study is cross-sectional, and among two colleges' (Eskisehir Anatolian and Alpu Anatolian Colleges) students.

While Eskisehir Anatolian College is to refer who taken high scores from the High Education Pass Exam (Original Turkish: Yuksek Ogrenim Gecis Sinavi) than Alpu Anatolian College. This study was realized in target population which included the two colleges' all students, but last classes were excluded with cause of their examinations by Directorships of colleges. The sampling was not selected for this study. Eskisehir Anatolian College and Alpu Anatolian College's participation rates were 69.1% (508/623) and 84.8% (95/112), respectively.

According to aim of this study, a questionnaire form was occurred by utilized literature. The form was including as the questions related some socio-demographic characteristics, the some information with related internet, and the questions with IAS and PSQI.

Permits: This study was started with Eskisehir Osmangazi University Medical Faculty, Public Health Department'sa decision (Date: 2014/04/2014, Number: 2014/77). Therefore Ethics Committee approval was not taken. Verbal consent was given by students. Eskisehir and Alpu, National Education Directorates were permitted to this study, in verbal form. This study's researchers accepted the Helsinki Declaration principles.

This study's timing was determined by the college directors. The questionnaire forms were applied with the self-reporting

method in observing by researchers. The process was completed in 20-25 minutes, approximately.

In this study, IAS was used for determination of internet addiction. This scale was established by Young in 1999 year[13]. Bayraktarwas realized validaty and reliability study in this Scale for Turkey in 2001 year[14].Scale is included 20 questions with 6 Likert type. The scores are changing from 0 to 100, and while increased scores level of addiction is increasing.

Sleeping quality was determined by PSQI. This scale was established by Buysse et al. in 1989[15]. And in 1996 year, Agargun et al. realized the validity and reliability study of this scale for Turkey[16]. Although the PSQI has 24 items, it is calculated as 19 items. The index has open-ended questions (e.g., during the last month, when did you go to bed?) and multiple-choice questions (e.g., during the last month, how was your sleep quality?), with answers such as very good, fairly good, fairly bad or very bad. Overall, 0–3 scores are given for each question. Obtained scores changed between from 0 to 21. While increased scores quality of sleeping is decreasing.

In our study, family income determined as good, mid, bad by perceptions of the students. If his/her mother/father was working in a job, they were accepted as "working". Regularly the least 1 cigarette smoking was defined as "smoking". A type personality is defined as moving, active, etc. students. B type personality is calm personality structure. For the students with disabilities as visual/hear/orthopedically, we said that they are physical inadequate. Body Mass Index >=25 values were accepted as overweight/obese.

Data were determined in SPSS (version 15.0). In statistical analyses; Mann-Whitney U test, Kruskal-Wallis test and Spearman Correlation Analysis were used. $p < 0.05$ values were accepted as significance.

Results and Discussion

Results: Including to this study, 95 (18.7%) students were studying in Alpu Anatolian College, and 413 (81.3%) students were studying in Eskisehir Anatolian College. Of the students, 303 (59.6%) were female. The average age was 15.91±0.98 (min: 14; max: 18) years old.

The average score was 30.00±15.99 (min:0; max: 89) from IAS.

Distribution of IAS' scores by the some socio-demographic characters was presented in Table-1. The frequency rates of his/her mother's/father's educational level in the first school and under were 41.7% (n:212), 23.2% (n:118), respectively.

The students with worked mothers were 171 (33.7%) and the students with worked fathers were 445 (87.6%). Distribution of IAS' scores by the some familial futures was presented in Table-2.

The students reported that 474 (93.3%) persons have a computer at home, 363 (71.5%) persons have a computer own, 423 (83.3%) persons have internet access in phone, 310 (61.0%) have internet access at home out.

Distribution of IAS' scores by the related some factors of internet addiction was presented in Table-3.

Entertainment and communication were the most frequently causes for internet use, as 24.5% and 21.8% frequencies, respectively.
Internet use causes' frequencies were presented in Table-4.

The average PSQI score was 5.65±2.88 (min: 0; max: 17). In this study group, the positive correlation between IAS scores and PSQI scores was found (r_s=-0.303; $p < 0.001$).

Discussion: In our study, IAS average score was 30; this score was inadequate for saying internet addiction to our study group. Eskisehir Anatolian was higher average score of IAS than Alpu Anatolian ($p < 0.05$). This was an expected result. Because, Eskisehir Anatolian is in urban area, Alpu Anatolian is in rural, conversely. The other studies reported that higher scores than our results for IAS[17,18]. This may accept that internet addiction is not a big problem in Middle Anatolian Region, today.

In this study, the male students have more addiction of internet by the girls ($p < 0.05$).This result was as comparable as similar various studies from Turkey[19]. May be our study group was occurring boys whose are dealing with internet more than girls.

A few studies reported that high income level is effectively among addiction of internet[20,21]. In our study, students with high income were more addiction of internet ($p < 0.05$). The cause of this result may to be opportunities for buying a computer in students with high income perhaps.

A Type are active, B Type are passive personalities. A Type have trend on the addiction of everything by to us. As like it, we thought that A type is tend to addiction about internet use. And we found that in A type have higher internet addiction level than B type ($p < 0.05$).

Sedentary lifestyle is a basic cause of obesity, and obesity is a basic television/computer/phone addiction. Some studies showed as a risk factor of obesity for internet addiction[12,22]. We showed a similar result, too ($p < 0.05$).

If student's parents have low educational level and/or have not a job, students were higher level of addiction about internet use ($p < 0.05$, for each one). In a study realized in seven European countries was shown that similar results by to us[23]. We may think that these students more preference the Life of Virtual World than living parents together.

We evaluated responding to questions with related access of internet. We showed tend to addiction of internet use increasing while access to internet increased. At home computer, own computer and access to internet in "computer/phone/outside the home" related results was showed significantly a relation with access to internet (for each one; p<0.05). In these subjects, we could not find comparable literature with our results.

To start using the computer and internet is an addiction cause[23]. Our result was supported this real among adolescent. Students that their starting to use the internet age ≤6 were higher internet addiction frequency than the others (p<0.05).

We can be accepting effect of weekly/ daily internet use time parameters on addiction of internet. We have found significant results in these issues as in literature (for each one; p<0.05)[12,19].

Entertainment and communication was important aims about internet use. The other studies from Turkey were reported that entertainment and communication as important aims about internet use[20].

And quality of sleeping; while internet use time increased, especially at night, sleeping disorders is increasing. Accordingly, the quality of sleeping is decreasing. Punamaki et al. reported the relating between sleep disorder and internet addiction[24]. Positive correlation between IAS and PSQI scores was found (p<0.001). Inadequate quality of sleeping will be basic cause of the neurological diseases. Therefore the preventive measures related with internet addiction must apply by the community health professionals.

Bivariate analyses' insignificant results (p>0.05, for each one) were not discussed. Because, literature examined by us, but these parameters have not important effect about internet addiction (p>0.05, for each one).

Table-1
Distribution of IAS' scores (median values) by the some Sociodemographic characters

Sociodemographic characters	n	IAS scores Median (min-max)	Test value z/KW; p	Multiple comparisons	p values
College					
Alpu Anatolian	95	24.0 (0.0-67.0)	**3.414; 0.001**	-	-
Eskişehir Anatolian	413	31.0 (0.0-89.0)		-	-
Class					
9th	206	29.0 (0.0-89.0)	0.007; 0.997	-	-
10th	124	29.5 (0.0-75.0)		-	-
11th	178	31.0 (0.0-77.0)		-	-
Gender					
Female	303	28.0 (0.0-89.0)	**2.927; 0.003**	-	-
Male	205	32.0 (0.0-80.0)		-	-
Age group (year)					
≤15	208	29.5 (0.0-89.0)	0.442; 0.802	-	-
16	132	30.0 (0.0-71.0)		-	-
≥17	168	29.5 (1.0-77.0)		-	-

Sociodemographic characters	n	IAS scores Median (min-max)	Test value z/KW; p	Multiple comparisons	p values
Family type					
Nuclei	454	30.0 (0.0-89.0)		-	-
Large	36	25.5 (3.0-69.0)	0.497; 0.780	-	-
fragmented family	18	29.5 (1.0-67.0)		-	-
Family income					
Bed (1)	15	20.0 (11.0-85.0)		1-2	1.000
Mid (2)	282	28.0 (0.0-80.0)	**7.815, 0.020**	1-3	0.519
Good (3)	211	32.0 (1.0-89.0)		2-3	0.023
Residence					
With family	494	30.0 (0.0-89.0)		-	-
Student hostel	14	25.0 (3.0-59.0)	0.923; 0.356	-	-
Smoking					
Yes	45	35.0 (3.0-71.0)		-	-
No	463	29.0 (0.0-89.0)	1.737; 0.082	-	-
Personality type					
A	310	32.0 (0.0-89.0)		-	-
B	198	25.0 (0.0-63.0)	**4.184; 0.000**	-	-
Physical inadequate					
No	468	29.0 (0.0-89.0)		-	-
Yes	40	34.0 (2.0-62.0)	1.277; 0.201	-	-
Overweight-Obese					
No	451	28.0 (0.0-84.0)		-	-
Yes	57	37.0 (1.0-73.0)	**3.797; 0.000**	-	-
Total	**508**	**30.0 (0.0-89.0)**	-	-	-

Table-2
Distribution of IAS' scores (median) by the some familial futures

Some familial futures	n	IAS scores Median (min-max)	Test value z/KW; p	Multiple comparison	p values
Mother educational level					
First and under (1)	212	25.0 (0.0-80.0)		1-2	0.093
Middle (2)	138	31.5 (0.0-85.0)	**11.590; 0.003**	**1-3**	**0.003**
College and over (3)	158	32.0 (0.0-89.0)		2-3	1.000
Father educational level					
First and under (1)	118	23.0 (0.0-67.0)		1-2	0.053
Middle (2)	151	30.0 (0.0-85.0)	**16.478; 0.000**	**1-3**	**0.000**
College and over (3)	239	31.0 (0.0-89.0)		2-3	0.339
Working status for mother					
No	337	29.0 (0.0-80.0)		-	-
Yes	171	32.0 (0.0-89.0)	**1.985; 0.047**	-	-
Working status for father					
No	63	23.0 (1.0-77.0)		-	-
Yes	445	30.0 (0.0-89.0)	1.757; 0.079	-	-
Number sibling					
0	54	32.0 (2.0-80.0)		-	-
1	303	30.0 (0.0-89.0)		-	-
2	115	28.0 (0.0-71.0)	6.903; 0.075	-	-
3 and over	36	23.0 (0.0-60.0)		-	-
Rank of child					
1st	255	30.0 (0.0-85.0)		-	-
2nd	192	29.0 (1.0-89.0)	1.093; 0.579	-	-
3rd and others	61	29.0 (0.0-63.0)		-	-
Total	**508**	**30.0 (0.0-89.0)**	-	-	-

Table-3
Distribution of IAS' scores (median) by the some familial futures

Related factors of internet addiction		n	IAS scores Median (min-max)	Test value z/KW; p	Multiple comparison	P values
Have computer at home						
No		34	15.5 (0.0-60.0)	**4.373; <0.001**	-	-
Yes		474	30.0 (0.0-89.0)		-	-
Have computer own						
No		145	25.0 (0.0-85.0)	**2.786; <0.001**	-	-
Yes		363	30.0 (0.0-89.0)		-	-
Internet access in computer						
No		63	17.0 (0.0-67.0)	**4.555; <0.001**	-	-
Yes		445	31.0 (0.0-89.0)		-	-
Internet access in phone						
No		85	20.0 (0.0-67.0)	**5.009; <0.001**	-	-
Yes		423	31.0 (0.0-89.0)		-	-
Internet access in home out						
No		198	25.0 (0.0-62.0)	**4.827; <0.001**	-	-
Yes		310	33.0 (0.0-89.0)		-	-
First internet using age (year)						
≤6	(1)	70	36.0 (4.0-85.0)	**20.946; <0.001**	1-2	0.005
7-11	(2)	345	29.0 (0.0-89.0)		1-3	<0.001
≥12	(3)	93	20.0 (0.0-67.0)		2-3	0.021
Frequency of internet using						
Every day	(1)	406	32.0 (0.0-89.0)	**42.059; <0.001**	1-2	0.002
One and over in week	(2)	48	22.0 (0.0-71.0)		1-3	<0.001
< 1 in week	(3)	54	15.0 (0.0-67.0)		2-3	0.319
Daily internet using time (hour)						
≤1	(1)	151	18.0 (0.0-60.0)	**90.743; <0.001**	1-2	<0.001
2-4	(2)	281	32.0 (0.0-75.0)		1-3	<0.001
≥5	(3)	76	39.5 (13.0-89.0)		2-3	0.001
Total		**508**	**30.0 (0.0-89.0)**	-	-	-

Table-4
Internet using causes' frequencies

Firstly internet using causes	n*	%
Study/ doing the homework	337	19.5
News	223	12.9
Research	340	19.6
Enjoy	425	24.5
Communication/calling	378	21.8
Other	28	1.6
Total	**1731**	**100.0**

Limitations: A limitation of this study is to be cross-sectional. We may say that this study was realized in two colleges only. This is a second limitation.

Conclusion

Internet addiction is an important problem among this study group. It found that positive correlation between internet addiction and poor quality of sleep. Internet-addicted students should seek professional help. Necessary assistance in this regard must be submitted. Moreover internet addiction screening should be performed in periodical times in study area.

References

1. Hong Kong Internet Project. (2016). Internet use in Hong Kong: the 2008 annual survey report. Web Mining Lab, Department of Media & Communication, City University of Hong Kong. http://newmedia.cityu.edu.hk/hkip/HKIP 2008en.pdf (Available: 13.06.2016).

2. Yajun Li, Xinghui Zhang., Furong Lu., Qin Zhang and Yun Wang. (2014). Internet Addiction Among Elementary and Middle School Students in China: A Nationally Representative Sample Study. *Cyberpsychol Behav Soc Netw*., 17(2), 111-116.

3. Xianhua Wu., Xinguang Chen., Juan Han., Heng Meng., Jianghong Luo. and Liesl Nydegger et al. (2013). Prevalence and Factors of Addictive Internet Use among Adolescents in Wuhan, China: Interactions of Parental Relationship with Age and Hyperactivity-Impulsivity. *PLoS One*., 8(4), 61782.

4. Bayraktutan F. (2015). Internet usage in terms of family relationships. (Unpublished master's thesis). Istanbul University, Institute of Social Sciences, Social Structure - Social Change Department, Istanbul, Turkey.

5. Bolukbas K. (2003). Sociological research on internet cafes and internet addiction: Diyarbakir instance. (Unpublished master's thesis), Dicle University, Institute of Social Science, Sociology Department, Diyarbakir, Turkey.

6. Beard K.W. and Wolf E.M. (2001). Modification in the proposed diagnostic criteria for Internet addiction. *Cyber Psychology & Behavior.*, 4(3), 377-383.

7. Caplan S.E. (2002). Problematic Internet use and psychosocial well-being: Development of a theory-based cognitive behavioral measurement instrument. *Computers in Human Behavior.*, 18, 553-575.

8. Leung L. (2014). Predicting Internet risks: a longitudinal panel study of gratifications- sought, Internet addiction symptoms, and social media use among children and adolescents. *Health Psychol Behav Med.*, 2(1), 424-439.

9. Erdur-Baker O. (2010). Cyberbullying and its correlation to traditional bullying, gender and frequent and risky usage of internet-mediated communication tools. *New Media & Society.*, 12(1), 109-125.

10. Kim K., Ryu E., Chon M.Y., Yeun E.J., Choi S.Y. and Seo J.S. et al. (2006). Internet addiction in Korean adolescents and its relation to depression and suicidal ideation: a questionnaire survey. *Int J Nurs Stud.,* 43, 185-192.

11. Thomee S., Harenstam A. and Hagberg M. (2012). Computer use and stress, sleep disturbances, and symptoms of depression among young adults - a prospective cohort study. *BMC Psychiatry.*,12, 176.

12. Park S. (2014). Associations of physical activity with sleep satisfaction, perceived stress, and problematic Internet use in Korean adolescents. *BMC Public Health.*,14, 1143.

13. Young K.S. (2016). Internet Addiction: symptoms, evaluation and treatment. http://netaddiction.com/articles/ symptoms.pdf (Available: 12.06.2016).

14. Bayraktar F. (2001). The Role of internet use in the development of adolescent. (Unpublished Master Thesis). Ege University, Enstitute of Social Science, Department of Psychology, Izmir. Turkey.

15. Buysse D.J., Reynolds C.F., Monk T.H., Berman S.R. and Kupfer D.J. (1989). The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. *Psychiatry Res.*, 28(2), 193-213.

16. Agargun M., Kara H. and Anlar O. (1996). The Validity and reliability of the Pittsburgh Sleep Quality Index in a Turkish sample. *Turkish Journal of Psychiatry.*, 7(2), 107-115.

17. Rücker J., Akre C., Berchtold A. and Suris J.C. (2015). Problematic Internet use is associated with substance use in young adolescents. *Acta Paediatr.*, 104(5), 504-507.

18. Mak K.K., Lai C.M., Watanabe H., Kim D.I., Bahar N. and Ramos M. et al. (2014). Epidemiology of internet behaviors and addiction among adolescents in six Asian countries.

Cyberpsychol Behav Soc Netw., 17(11), 720-728.

19. Yılmaz E., Şahin Y.L., Haseski H.İ. and Erol O. (2014). High School Students' Internet Addiction Level of various Investigation by the Variable: The Case of the province of Balikesir. *Journal of Educational Sciences Research.*, 4(1), 133-144.

20. Ak S., Koruklu N. and Yılmaz Y. (2013). A study on Turkish adolescent's Internet use: possible predictors of Internet addiction. *Cyberpsychol Behav Soc Netw.*, 16(3), 205-209.

21. Beutel, M.E., Brähler, E., Glaesmer, H., Kuss, D.J., Wölfling, K. and Müller, K.W. (2011). Regular and problematic leisure-time Internet use in the community: results from a German population-based survey. *Cyberpsychol Behav Soc Netw.,* 14(5), 291-296.

22. Li M., Deng Y., Ren Y., Guo S. and He X. (2014). Obesity status of middle school students in Xiangtan and its relationship with Internet addiction. *Obesity (Silver Spring).*, 22(2), 482-487.

23. Tsitsika A., Janikian M., Schoenmakers T.M., Tzavela E.C., Olafsson K. and Wójcik S. et al. (2014). Internet addictive behavior in adolescence: a cross-sectional study in seven European countries. *Cyberpsychol Behav Soc Netw.*, 17(8), 528-535.

24. Punamaki R.L., Wallenius M., Nygard C.H., Saarni L. and Rimpela A. (2007). Use of information and communication technology (ICT) and perceived health in adolescence: The role of sleeping habits and waking-time tiredness. *J Adolesc.,* 30, 569-585.