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ÖZGÜN ARAŞTIRMA

TÜRK ERGENLERDE İNTERNET BAĞIMLILIĞI VE ERTELEDİKLERİ GÜNLÜK YAŞAM AKTİVİTELERİ

INTERNET ADDICTION IN TURKISH ADOLESCENTS AND THEIR POSTPONED ACTIVITIES OF DAILY LIVING

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ÖZET

Literatürde, ergenlerin mental sağlıkları ile İnternet Bağımlılığı (IB) arasındaki ilişkiyi inceleyen pek çok araştırma olmasına rağmen günlük yaşam aktivitelerine özgü problemleri irdeleyen sınırlı çalışma vardır. Bu tanımlayıcı çalışmanın amacı ergenlerin IB durumlarını ve internet başından ayrılamadıkları için ertelediklerı bazı günlük yaşam aktivitelerini belirlemektir (n=828). İnternette olduğu zamanlarda; altı saatten az uyuyan, sadece iki ana öğün yiyen, ara öğünlerini atlayan, ana öğünlerini bilgisayar başında yiyen, atıştırmalık (abur-cubur) birşeyler ile öğününü atlayan, tuvalet ve bazı hijyenik ihtiyaçlarını (el yıkama, banyo yapma) erteleyen ve çalışmayı ertelediği için okul başarı zayıf olan ergenlerin IB skorları diğerlerinden daha yüksektir (p<0.05). Aynı zamanda bu ergenlerin internet başında uzun zaman geçirdikleri için baş-boyun ve kol veya herhangi bir bölgesinde ayrı deneyimledikleri, göz ile ilgili (göz yaşarması, göz kızarması ve ağrı) problemi ve sindirim sistemi problemleri (kabızlık, gaz) yaşadıkları bulundu. Fiziksel sağlık şikayetleri ile IB skoru arasında anlamlı farklılık elde edildi (p<0.05).

Anahtar Sözcükler: Ergen, Internet bağımlılığı, Günlük yaşam aktiviteleri

ABSTRACT

Despite the many studies in the literature investigating the relationship between Internet Addiction (IA) and adolescent mental health, there are few studies on their problems with carrying out activities of daily living. The purpose of this descriptive study is to determine the IA status of adolescents (n=828) as well as some of the daily life activities that they postpone due to not being able to pry themselves away from the Internet. The IA scores of adolescents who sleep less than 6 hours, eat only two main meals, skip/postpone meals and have snacks at the computer instead, delay going to the toilet and taking care of hygienic needs (hand washing, bathing) while on the internet and have a poor academic standing because of postponing schoolwork as a result of being on the computer were higher (p<0.05). At the same time, it was found that these adolescents experienced pain in the back, neck, arm and other parts of the body, had eye problems (eye tearing, red eyes, pain) and digestive problems (constipation, gas) from sitting at the Internet for a long time. There were also significant differences between IA scores in terms of the adolescents' medical complaints (pain, eye problems) and some of the emotional issues that they experienced (p<0.05).

Keywords: Adolescents, Internet Addiction, The daily life activities.

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Introduction

It is reported that the most serious risky behavior among adolescents that leads to increased morbidity and mortality are alcohol and substance abuse, injury, violence, smoking, low physical activity levels, and unsafe sexual behavior[1]. Today however, besides these reported risky behaviors, along with the advances in technology, risks arising from inappropriate computer and internet use have been added to these hazards. The risk exists for all age groups but the more the internet becomes an integral part of daily life, the more the situation presents a risk for adolescents in particular[2-4].

In general terms, when the internet begins to affect the daily life of an individual, this is defined as Internet Addiction (IA), but a consensus has still not been reached about how this condition is to be commonly identified and diagnosed[5,6]. When Goldberg used the term "internet addiction" for the first time, he opened this definition to discussion and as a result, the indicators of internet addiction were developed in line with the criteria for diagnosing alcohol addiction, as set out in DSM-IV[7]. Young adapted the diagnostic criteria for "pathological gambling" and described internet dependency as a type of impulse control disorder involving non-intoxicants and then used the term "internet addiction" for a dependency on the internet in the form of using it beyond the necessary limits. It can be seen from the literature that there are many terms used to define the negative effects of internet usage[8]. These are pathological internet use[9], internet overuse, problematic internet use and maladaptive internet use[10,11]. Young conducted the first empirical studies on IA, whereby he set forth 8 criteria related to IA. These are: extreme mental preoccupation with internet, the need to increase the time spent connected to internet, being unsuccessful in attempts made to reduce internet use, symptoms of deprivation in the event of reducing time on the internet (restlessness, dysphoria, etc.), problems with time management (daily activities), social problems because of internet use (family, school, work, friends), behaving dishonestly to remain connected or attain connection to internet (lying, stealing), using internet to escape problems and negative feelings (hopelessness, guilt, depression, anxiety). A person is considered addicted when 5 of Young's 8 criteria are fulfilled. The concept of the widely used term "internet addiction" was preferred in this study[8].

As in alcohol, cigarette and substance addictions, behavioral addictions may cause physical and psychological symptoms of dependency in individuals and produce serious and harmful psychosocial or psychological consequences, too [6,12,13,14]. The literature refers to how adolescents spend long time on the internet and how this can cause sleep deprivation, irregular bedtime hours, inactivity, irregular eating habits, skipping meals, eating an unbalanced diet and affect other similar activities of daily life[15,16]. Moreover, it is reported that IA can cause medical issues such as musculoskeletal irregularities stemming from a faulty seating position, as well as eyesight and speech problems[17]. In addition to these, it has also been shown that addiction can have a negative impact on academic achievement and emotional status[5,14]. Moreover, in recent years, it has been reported that especially young people with IA exhibit depression, aggressive behavior and a high rate of psychiatric symptoms and also experience problems in their interpersonal relationships. Therefore, various countries have accepted this issue as a significant social problem[14,18,19].

The period of adolescence is undoubtedly an important time of life that represents the transition from childhood through adulthood. For this reason, it is of particular importance that adolescents get enough sleep, eat a healthy diet, learn hygienic habits, act active, carve time out for both work and play, take good advantage of leisure time, avoid postponing activities of daily living and realize the risks they face in the event that they postpone these activities. In delivering nursing care, nurses have always been closely interested in their patients' activities of daily life (ADL) in the pursuit of their goal of ensuring that individuals are able to carry out and maintain their capabilities of performing daily activities. Nurses need to determine the degree to which an individual can carry out ADL and the factors that affect this capability, ascertaining at the same time how much assistance the individual requires and taking the measures to provide the necessary support. Nurses who can assess the capabilities of patients with regard to ADL, especially in the diagnostic stage of the nursing process, will be better equipped to clearly determine which ADL need to be focused on and can plan nursing care accordingly. When adolescents develop a unhealthy use of the internet and spend long hours at the computer, are unable to pry themselves away or shut down the connection, they may, in cases of addiction, postpone the ADL that form the basis of a healthy existence; such a delay in fulfilling the necessities of life leads an significanly serious problem. It is hoped that the results of this study will enlighten the various disciplines involved in adolescent health, including teachers, adolescents, school nurses, family healthcare professionals and the relatives of young people. The purpose of this study is to determine the IA status of adolescents and which daily life activities of adolescents are postponed due to preoccupation with the internet.

Method

Population and sample

This descriptive study was conducted in April 2012. The population of the study comprised 6th, 7th and 8th grade students enrolled in four public schools working under the Republic of Turkey National Ministry of Education in the district of Üsküdar, Istanbul (N=1500). Schools listed in the region and four schools were selected, based on the random numbers table. The study was completed with data collected from 828 students who agreed to participate in the study. The participants had parental consent and had internet access at home via computer (PC, notebook, tablet). They stated that they accessed internet every day and they were present at school on the day the data was collected. The mean age of the study sample was 12.89±0.81 years (min=12, max=14).

Data collection procedure

Data were collected from all of the students in the classroom environment in a period of 30 minutes under the supervision of the researcher over the period April 15-30, 2012. The data collection was based on self-reporting. The teachers learned which students in the classes had internet access at home via computer (PC, notebook, tablet) and accessed it every day; these students were included in the study. Only five students had mobile phones. These students were excluded from the study. To determine whether or not the students understood the questions and to ascertain whether the questions were appropriately asked, a pilot study was initiated with 30 students.

Data collection tools

1. Questionnaire containing questions on Individual Characteristics and Postponed Activities of Daily Living (ADL): This questionnaire comprised eight questions on the adolescents' individual characteristics [class, gender, age, educational status of parents, perception of family economic status, daily duration of internet use (less than 1 hour, 1 hour, 2 hours, more than 2 hours), adequacy of daily internet use (adequate; inadequate), perception of weight. In addition, 11 questions were devoted to ADL that the adolescents postposed due to their inability to break away from the internet. All responses to the questionnaire except for the first four items are in the form of Yes, No, or Sometimes.These questions were prepared according to the ADL Model devised by Roper et [20]The ADL's in this model were chosen because they include not only activities for individuals who are ill but also activities that healthy people can perform. There are 12 ADL's in the model but due to the ages of the study group and in view of the subject of the research and only 6 of the ADL's were included in the study. These are sleeping, eating and drinking (nutrition), elimination, washing and dressing (personal hygiene), mobilization, and working and playing[20].

2. Internet Addiction Scale for Adolescents: This scale developed by Ayas, Çakır, & Horzum comprises 28 sub-domains of Internet addiction; the internal consistency

coefficient is 0.96. The scale is a 5-choice Likert type of scale (Never=1 point, Rarely=2 points, Sometimes=3 points, Often=4 points, Always=5 points). This scale's total internal consistency coefficient is 0.95. Higher scores indicate higher levels of addiction and lower scores indicate lower levels of addiction (min: 28; max:140)[21]. In addition, because the scale used did not have a cut-off point, it was not possible to evaluate addiction categories among the students (addicted-not addicted). The questionnaire takes approximately 25 minutes to complete. Permission was obtained from Ayas via e-mail to use the scale in this study. The scale's Cronbach's alpha value in this study was found to be 0.92.

Data analysis

The descriptive statistical tools of percentages, medians, the non-parametric tests (Kruskal Wallis, the Mann Whitney U Tests), and the One-way ANOVA were used.

Ethical considerations

The required permissions to conduct the study were obtained from the Istanbul Provincial Directorate of National Education and the school administrations. All of the students were informed about the research and the school administration was assisted in informing the parents, after which the parents' consent was obtained on time. The research was conducted in compliance with the criteria of the Helsinki Declaration.

Results

The median value for the adolescents on the IA scale was found to be 40 (33-51), mean values were 45.04±16.81 (min= 28, max= 140). Of the participants, 48.6% were male and were 51.4% female. The IA scale mean scores of the boys were 48.40±17.98; those of the girls were 41.48±14.68. The mean age of the students was 12.89±0.81 years (min=12, max=14). Among the students' mothers, 39.4% were primary school graduates; of the students' fathers, 34.9% were high school graduates. Of the students, 53.6% stated that their families' economic status was good. It was found that 14.1% of the adolescents spent two hours a day on the Internet; 11.7% spent more than two hours.

There were significant differences between the IA scores of the adolescents according to their gender, class, and perception of weight ($p<0.05$). There was a statistically significant difference between the adolescents' IA scores in terms of their Internet usage status and the related variables (daily internet usage time, adequacy of daily internet usage time) ($p<0.05$) (Table 1).

Adolescents who sleep less than 6 hours, eat two main meals, skip/postpone meals with snacks, delay toilet needs and some hygienic needs (hand washing, bathing), exhibit poor school achievement because of their preoccupation with the internet displayed higher IA scores than the others. There were statistically significant differences between the adolescents' IA scores and the variables related to their daily sleep times, eating habits (number of main meals, skipping/postponing meals while on the internet, having main meals at the computer, snacking or skipping meals) and their school achievement ($p<0.05$). There was a statistically significant difference between the adolescents' IA scores in terms of their delaying such personal hygienic needs as not going to the bathroom, not taking a bath, not washing their hands due to their spending long periods of time at the internet ($p<0.05$) (Table 2).

In the adolescents who said they spent a long time at the internet, a statistically significant difference was found between their IA scores and some physical problems they experienced (pain in the back, neck, arm, wrist or anywhere else), problems with the eyes from sitting at the internet for a long time (tearing, red eyes, irritation, pain) and feeling unhappy, lonely, restless when not being at the internet ($p<0.05$) (Table 3).

4. Discussion

Adolescents are sensitive group that exhibit a weakness for giving in to developing IA. This addiction may have an effect on their social life, their psychological makeup and their living habits and activities of daily living[3,22.] However, when it is considered that adolescents are in the growth and development stage of life, it is very important that they get enough sleep, eat balanced and regular meals, have an active life and take care of their personal hygiene. The literature reports that behavior such as excessive preoccupation with the Internet can put children's health at risk, and lead to growth and development problems, particularly in adolescence[17,23,24.]

In many studies conducted with adolescents, a correlation has been found between mental health problems such as depression, psychiatric complaints and IA[25,26]. In the present study, the adolescents' IA scores were low, but the IA scores of the adolescents postponed sleep times and hygienic needs such as toilet and bath and skipped their main meals eating only two meals a day or having snacks for meals or eating their meals in front of the computer instead of eating at the table had poor grades that were higher than the other adolescents' scores. According to Kim & Chun, there is a statistically significant difference and a negative correlation between the Health Promotion Lifestyle Profile and IA. Individuals with severe addiction have a lower perception of their health status[27].

Diet has an important role in growth and development throughout the adolescent years. The study found that adolescents with a high IA score were heavier than the others, that they skipped or delayed meals because of being on the internet for prolonged periods of time, that they ate their meals while at the computer, and frequently snacked. According to study results set forth in Turkey by Canan et al., there is a significant correlation between Internet addiction and BMI[28]. Yen et al.(2010) in a study in Taiwan with 9,278 adolescents[29]

Table 1. Individual characteristics of the adolescents and their internet addiction scores

Variables		N	%	Mdn (interquartile)	Statistic Z/Kx^{2*}	p
Class	6	323	39.0	41 (34-51)	7.866	**0.020**
	7	269	32.5	38 (32-50)		
	8	236	28.5	42 (34-55)		
Gender	female	426	51.4	37 (32-46)	-6.739	**0.000**
	male	402	48.6	44 (35-56)		
Duration of daily internet use	less than 1 hour	295	35.6	36 (31-44)	135.487	**0.000**
	1 hour	319	38.5	40 (33-51)		
	2 hours	117	14.1	46 (38-56)		
	more than 2 hours	97	11.7	**57 (45-77)**		
Adequacy of daily internet use	adequate	748	90.3	40 (33-49)	-6.920	**0.000**
	inadequate	80	9.7	**57 (42-73)**		
School achievement	poor	33	4.0	**48 (33-62)**	24.454	**0.000**
	medium	278	33.6	43 (36-55)		
	good	354	42.8	39.50 (33-51)		
	very good	163	19.7	36 (32-46)		
Perception of weight	weak	110	13.3	41 (31-52)	6.353	**0.042**
	normal	525	63.4	39 (33-50)		
	overweight	193	23.3	**43 (34-54)**		

*: Kx^2=Kruskal Wallis Test, Z= Mann Whitney U

and Benner et al., (2012) in research with 2,467 pupils between the ages 6-18 pointed to a correlation between internet usage time and BMI[30]. These results suggest that Internet addiction promotes a sedentary lifestyle and leads to the adoption of unhealthy dietary habits.

The hours spent asleep and the quality of sleep are important components of health and it is known that there is an association between inadequate or poor sleep quality and poor academic achievement, bad health, fatigue[31], an increase in healthcare expenses, work/school absenteeism and poor school performance[17,32]. According to Polos's study, there is a relationship between the use of Sleep Time-Related Information and Communication Technology (STRICT) and impairments in sleep patterns and daytime functioning in adolescents[33]. There are also studies that have reported a correlation between IA and insomnia[3,5,15,34,35.] Similarly, adolescents that use the internet for prolonged periods were reported as they were sleeping less and feeling overtired[16]. On the other hand, it was observed that the number of studies on the relationship between internet usage and problems with physical health or sleep are rare[5,36]. The findings of this study were consistent with the literature in that a statistically significant difference was found between IA scores and sleep duration times; in addition, high IA scores were observed in adolescents sleeping 6 hours or less.

Pain is an important health issue defined in children and adolescents. Pain is a symptom that has a negative effect on quality of life and particularly in the case of school children. Its effects can be severe (sleep and eating problems, school absenteeism, inability to concentrate on lessons, etc.). Delaying a remedy for pain or neglecting it may lead to serious medical problems[37,38.] In this study, when adolescents were asked about their medical complaints, it was seen again that those with high IA scores experienced pain (in the back, neck, arms, wrists, etc.) when they set at the internet for long periods of time, as well as eye complaints such as teary eyes, red eyes, eye irritations and pain. The results of the study by Kwisook et al., similarly showed that time at the internet could be associated with taking medicine for headaches. In 26.4% of the adolescents with IA, in 16.8% of those who were not addicted, and in 15.1% of those who displayed potential addiction, it was seen that pain-killers were being taken for headaches[3]. The literature reports low academic achievement and low attendance as well as absenteeism in children with an IA or in adolescents who do not use the internet appropriately[10,14,33,39]. Similarly, in the present study, adolescents who reported poor academic achievement were found to have significantly higher addiction mean scores compared to those who were successful students. This may indicate that students with low academic achievement are retreating into the internet as a means of escape but it may also mean that spending too many hours on the internet prevents them from allotting enough time to their lessons.

In many studies, a direct correlation has been shown between psychological problems and Internet addiction [16,22,24,40]. According to the study results of Nalwa & Anand, adolescents have reported that life is very boring without the Internet. In addition, adolescents with high addiction scores are reported to have high scores in the emotion of feeling lonely[17]. Yoo et al., has commented in his study that most internet users experience psychological problems such as feelings of anger, stress and/or depression when they have no access to the Internet[4].

Table 2. Comparison of Adolescents' Postponed ADL and IA scores

Activities of Daily Living Postponed due to Not being able to break away from the Internet		N	%	Median (interquartile)	Statistic F/Z/Kx^2	p
Daily sleep times	less than 6 hours	146	17.6	**43 (32-56)**	5.52***	**0.004**
	7-8 hours	328	39.6	40 (33-52)		
	more than 9 hours	356	42.8	40 (33-49)		
Number of main meals	1 meal	51	6.2	41 (33-48)	15.114*	**0.001**
	2 meals	422	51.0	**42 (34-55)**		
	3 meals	355	42.9	38 (32-47)		
Number of snacks	1 meal	345	41.7	40 (33-50)	2.831*	0.243
	2 meals	373	45.0	40 (33-51)		
	3 meals	110	13.3	41 (33-57)		
Skipping/postponing main meals when occupied on the internet.	yes	77	9.3	**52 (39-74)**	113.253*	**0.000**
	sometimes	250	30.2	46 (38-59)		
	no	501	60.5	37 (31-45)		
Eating main meals while at the computer	yes	159	19.2	**51 (41-69)**	107.009*	**0.000**
	sometimes	249	30.1	42 (34-54)		
	no	420	50.7	36 (32-44)		
Eating snacks and skipping meals	yes	206	24.9	**48 (38-42)**	81.726*	**0.000**
	sometimes	388	46.9	40 (34-50)		
	no	234	28.3	35 (31-43)		
Postponing toilet needs	yes	35	4.2	**62 (46-90)**	108.277*	**0.000**
	sometimes	125	15.1	38 (32-47)		
	no	668	80.7	52 (41-64)		
Delaying hygienic needs--hand washing, bathing	yes	26	3.1	**55 (34-73)**	74.279*	**0.000**
	sometimes	125	15.1	52 (44-63)		
	no	677	81.8	39 (32-48)		
Postponing active sports with friends and family--walks. Basketball and football. etc	yes	**554**	**66.9**	40 (33-52)	.052*	0.975
	sometimes	204	24.6	40 (34-50)		
	no	70	8.5	41 (30-56)		
Delaying regular sports	yes	**457**	**55.2**	40 (32-52)	-.574*	0.566
	no	371	44.8	41 (33-50)		
Based on your most recent grades, how would you rate your school achievement	poor	33	4.0	**48 (33-62)**	24.454	**0.000**
	average	278	33.6	43 (36-55)		
	good	354	42.8	39.50 (33-51)		
	very good	163	19.7	36 (32-46)		

Values were shown in Table according to *Kx^2=Kruskal Wallis Test,
**Z= Mann Whitney U,
***F= One way ANOVA
Added to group that answered Sometimes to the question, "Do you postpone your regular sports activities?"

There are also findings that, on the contrary, show that adolescents that use the Internet less have better relations with family and friends compared to those that use the Internet for prolonged periods[41]. In the present study, adolescents with high addiction scores said that they felt unhappy, lonely and troubled recently. Adolescents who feel this way may be led to feel such emotions because of spending long periods of time alone on the internet, not having enough time to spend with family and friends, and putting the Internet at the center of their life. In this period, lonely adolescents may even be reaching out in cyberspace to virtual friends, adopting a virtual world to live in. That is why the adolescent may feel alone and unhappy when not on the Internet or may be using the Internet as a way of "evading, procrastinating and escaping" from life's problems[42,43].

Limitations

This study has some limitations: The research results are limited to four schools and cannot be generalized. And since the children's school achievement status, weight, daily life activities were based on self-reporting, this also constituted a limitation of the study.

Conclusion

Adolescents who sleep less than 6 hours in two days, eat two main meals, skip/postpone meals, eat their meals at the computer, have snacks or substitute snacks for meals, delay toilet needs and some of their personal hygienic needs (hand washing, bathing), and display poor school achievement because of not being able to break away from the internet and

had higher IA scores than the others. The results of this research indicated that as the degree of IA had risen in adolescents, the adolescents postponed some basic activities of daily life recently felt more unhappy, lonely and bored and experienced troubles with their school work. At the same time it was found these adolescents experienced pain in the back-neck- arm, or anywhere else, problems with the eyes (eye tearing, red eyes, pain) and digestive problems (constipation, gas) from sitting at the Internet for a long time.

Campaigns may be organized to raise awareness in adolescents about the potential and real issue of addiction that could develop as a result of an unhealthy use of the Internet. In the light of these results, it may be useful to develop programs to call attention to the adverse impact of this on activities of daily living such as sleep, regularly eating a balanced diet, living an active life, personal hygiene and to stress the possibility of emerging health problems. Additionally, in terms of preventing IA, programs to develop health should be drawn up, implemented and their effects evaluated. In particular, school nurses, teachers, professionals working at family health centers and consulting services for young people as well as healthcare professionals working at other similar organizations should be urged to raise their awareness about diagnosing this current issue. It may be recommended that parents and teachers involve adolescents in programs that will make them more active and allow them to avoid putting the Internet at the focus of their lives.

Table 3. Adolescents' internet addiction scores according to the physical problems they complained about

Variables		N	%	Mdn (interquartile)	Statistic Z/X^2	p
Experienced problems from sitting at the internet for a long time	yes	174	21.0	48 (38-60)	54.785	0.000
	no	351	42.4	36 (32-46)		
	sometimes	303	36.6	41 (34-52)		
Experienced problems with the eyes from sitting at the internet for a long time	yes	147	17.8	45 (37-57)	27.292	0.000
	no	397	47.9	38 (32-47)		
	sometimes	284	34.3	40 (34-52)		
Experienced digestive problems	yes	48	5.8	42.50 (32-65)	4.895	0.086
	no	549	66.3	40 (33-49)		
	sometimes	231	27.9	42 (33-56)		
Have you been feeling unhappy lonely and bored recently?	yes	155	18.7	50 (37-64)	53.347	0.000
	no	439	53.0	37 (32-46)		
	sometimes	234	28.3	42 (35-52)		

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