

Internet use among high school students in Ankara, Turkey

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ABSTRACT

Objective: Internet use has grown considerably in recent years throughout the world, particularly among young people. This study aimed at assessing Internet use among high school students.

Methods: This is a cross-sectional epidemiological study involving 246 students in 7 classes representing first, second, and third year students (754 persons) at a high school in Ankara, Turkey during March 2001. An Internet use questionnaire comprising 34 questions was used.

Results: It was found that 86.5% of the students used the Internet at home. The mean daily Internet use was 2.5 hours during vacation, and less while school was in session. Although 86.5% of students with computers at

home had Internet connections, approximately half of the students reported that they had frequently gone to Internet cafe's.

Conclusion: Significant differences between boys and girls were found in terms of hours spent on the Internet and purpose of use, and changes over time in hours spent. "Daily" and "weekly" Internet use is more frequent among boys than girls. Boys visit cyber-sex sites more than girls. Those whose weekly Internet use was 4 hours or more were found to have been using the Internet for 36 months or more; they had irregular eating habits, and their relatives complained more frequently on the amount of time they spent on the Internet.

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Despite the broad range of use that computers have, the effects of the Internet's entry into daily life have drawn special attention. The impact of its use and related health consequences is increasingly being investigated.¹ The concept of normal Internet use has not yet been scientifically defined. It was once reported that abnormal Internet use was in excess of 19 hours per week, and that at least 80% of the group studied had at least 5 symptoms of addiction.²

Internet use may influence health in some aspects.³ Greater use of the Internet was associated with declines in participants' communication with family members in the household, and increases in their depression and loneliness.⁴ People who use Internet frequently tend to escape from their lives

or family problems; thus neglected issues may worsen, leading to a vicious cycle and causing young people with familial problems to become more addicted to the Internet.⁵⁻¹⁰ "Addiction" of Internet use could lead directly to social isolation, increased depressiveness, interfamilial fighting, divorce, academic failure, financial failure, and loss of work.⁶ Adolescents in all societies have substantially increased autonomy compared with children, and their own decisions play a vital part in determining their behaviors and relationships. This period of life is the gateway to the promotion of health.¹¹ Determination of risk-taking behaviors at these ages is vital for developing prevention strategies in terms of healthy life style. Scientific investigation of the effects of the Internet, which has

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begun to occupy a major part of people's lives in Turkey as well as the rest of the world, on daily life and productivity, especially among young people, is needed in order to foresee problems that may arise and determine their extent. The aim of this study is to assess the Internet use and relevant factors among adolescents attending a high school. Determination and assessment of the effects of the student of this high school's relationship with the Internet and the Internet habits were planned and carried out.

Methods. This is a cross-sectional epidemiological study involving 246 students in 7 classes representing first, second, and third year students (754 persons) at a high school in Ankara, Turkey during March 2001. This school was located in Cankaya district. People living in Cankaya district had better socio-economic conditions compared to the other parts of Ankara. Data collection was completed by a questionnaire comprising 34 questions designed for this study. Systematic sampling method was used for sample selection. The questionnaire was applied under observation at the same at each class. Data were analyzed using Epi-Info version 5.0 software.

Results. A total of 246 students participated in this study, in which Internet use habits were investigated. Students' ages ranged from 15-19, with a mean of 17. Fifty-eight percent were boys (143 students) and 41.9% were girls (103 students); 32.5% were first year, 41.5% were second year, and 26% were third year students. Forty-eight percent of their mothers and 78.6% of their fathers were graduates of high school education or university. Fifty-eight percent of their mothers and approximately 100% of their fathers were employed. The number of students who reported that they could use the computer at school whenever they wanted was 47 (19.1%). Majority of the students (86.5%) with computers had Internet access at home. 7.5% of the students had been using the Internet for less than one year, 31.3% for one year, and 3.3% for five years or longer; the mean duration of use was 26 months. 13.1% spend 20 hours or more on the Internet per week (**Table 1**). The first 3 purposes of the students' connecting to the Internet were surfing, e-mailing and chatting. And most visited sites were e-mail sites, game sites chat-rooms and cyber-sex sites (**Table 2**). Forty-three percent of students reported that they ended sessions because they finished their business, and other reasons for students ending an Internet session was summarized in **Table 3**. While 83.3% of boys spent a total of 4 hours or more on the Internet, 70% of girls did so; the difference was statistically significant ($\chi^2 = 5.53$; $p < 0.05$). Eighty-four percent of first-year students, 75% of

second year students, and 74.6% of third-year students spent a weekly total of 4 hours or more. The difference between years was not statistically significant ($\chi^2=2.43$; $p > 0.05$). 68.8% of students who had been using the Internet for less than one year, and 88.1% of those who had been using it for three years or longer spent a weekly total of 4 hours or more on the Internet. A statistically significant difference was found between history of Internet use and total weekly use ($\chi^2=7.85$; $p < 0.05$). A statistically significant difference was found between weekly Internet use of 4 hours or more and the number of non-Internet purposes for using the computer. Total weekly Internet use was 4 hours or more in 62.5% of students who had 2 or fewer purposes for using the Internet, and in 95.8% of those who had 4 or more purposes. A statistically significant direct correlation between the amount of purposes for using the Internet and weekly Internet use time was observed ($\chi^2=13.81$; $p < 0.05$) (**Table 4**). Forty-five percent of the students were always/often subject to complaints from their relatives on

Table 1 - Some characteristics about Internet use of students (Ankara, 2001).

Characteristics	n (%)
Internet access	
Those able to access the Internet at school whenever they want (N=246)	47 (19.1)
Those able to access the Internet at home whenever they want (N=246)	207 (84.1)
Those with home Internet access (N=207)	179 (86.5)
Those who use the computer for non-Internet activities (N=238)	226 (95)
Duration of Internet use (years) (N=214)	
<1	16 (7.5)
1	67 (31.3)
2	61 (28.5)
3	43 (20.1)
4	20 (9.3)
5	7 (3.3)
Total weekly Internet use (hours) (N=222)	
<4	49 (22.1)
4-19	144 (64.4)
20	29 (13.1)
Total Internet use (days/week) (N=222)	
1	18 (8.1)
2	63 (28.4)
3	43 (19.4)
4	24 (10.8)
5	28 (12.6)
6	10 (4.5)
7	36 (12.6)

Table 2 - Characteristics on Internet connection (Ankara, 2001) (N=230).

Characteristics	n	(%)	Total responses %
Purpose for students' connecting to the Internet			N=779
Surfing	189	(82.2)	24.3
E-mail	160	(69.6)	20.5
Chat	147	(63.9)	18.9
Information retriever	134	(58.3)	17.2
Game sites	98	(42.6)	12.6
Download (games, MP-3, programs)	8	(3.5)	1
Cyber-sex sites	7	(3)	0.9
Project/research	6	(2.6)	0.8
Web site design	6	(2.6)	0.8
Hacking	5	(2.2)	0.6
Shopping	5	(2.2)	0.6
News (sports, automotive, current events)	5	(2.2)	0.6
General entertainment	3	(1.3)	0.4
Contacting friends	2	(0.9)	0.3
Other*	4	(1.6)	0.5
Sites visited by participating students			N=708
E-mail sites	132	(57.4)	18.6
Game sites	114	(49.6)	16.1
Chat-rooms	103	(44.8)	14.5
Cyber-sex sites	94	(40.9)	13.3
Travel sites	87	(37.8)	12.3
News sites	75	(32.6)	10.6
Hobby sites (planes, autos, fan clubs, humor)	36	(15.7)	5.1
Music sites	16	(7)	2.3
Informative sites (science, research, astrology, web design)	10	(4.3)	1.4
Art (poetry, cinema, photography, animation)	9	(3.9)	1.3
Sports sites	7	(3)	1
Download sites	5	(2.2)	0.7
Search sites	5	(2.2)	0.7
Shopping sites	4	(1.7)	0.6
Hacking	3	(1.3)	0.4
Institutions' sites (universities, foundations, military, private)	2	(0.9)	0.3
ICQ	2	(0.9)	0.3
Other†	4	(1.7)	0.6
*paying bills, fan clubs, Turkel messaging, ICQ - a part of chat software, †surfing, e-card, news, Napster			

spending too much time on the Internet. Sixteen percent of students whose relatives rarely/never complained always/often exceeded the time they planned to spend on the Internet. Thirty-nine percent of students whose relatives always/often complained on the amount of time they spent on the Internet spent 3 hours or more in a single session, while 21.9% of those whose relatives never/rarely complained spent 3 hours or more in a single session. Sixty-six percent of students whose relatives always/often complained on the amount of time they spent on the Internet spent 3 hours or more in a single session on the weekend, while 36.2% of those whose relatives rarely/never complained did so; this difference was statistically significant.

Discussion. Sites most frequently visited by students included e-mail-oriented sites, game sites, chat rooms, and cyber-sex sites. The most common reasons for accessing were surfing, email, chat, and information retrieval (Table 2). It was found that this age group tends to use the Internet mainly for communication and games. These results are in agreement with assessments that the most favored sites are chat and MUD sites.⁵⁻⁷ Significant differences between boys and girls were found in terms of period and purpose of use, and changes in period of use over time. While 83.3% of boys spent 4 hours or more on the Internet per week, 70% of girls did so (Table 4). Boys were found to use the Internet 4-7 days per week more than girls. In addition, the increase in frequency of use over time was greater in boys than in girls. While 61.9% of boys visited cyber-sex sites, only 8.8% of girls did so. Parallel results were obtained in previous studies.¹² According to these studies, most people spending 4 or more hours per week on the Internet and who have symptoms considered to be criteria for addiction⁵ are young males, and males prefer violence or sex-oriented sites while females prefer

Table 3 - Reasons for students ending an Internet session (Ankara, 2001) (N=230).

Reasons	n	(%)
Finishing their business	101	(43.9)
Lack of time	98	(42.6)
Boredom	79	(34.3)
Being told to finish	40	(17.4)
Lost connection*	12	(5.2)
Expense	10	(4.3)
Health	1	(0.4)
*lost connection such as computer problems, slowing and server problem, busy telephone lines, electrical outage.		

Table 4 - Total weekly Internet use periods of participating students by gender and grade (Ankara, 2001) (N=246).

Characteristics	Total weekly Internet use (hours)				p
	<4 hours %	≥4 hours %	Total n	(%)	
Gender					
Male	16.7	83.3	132	(59.5)	<0.05
Female	30	70	90	(40.5)	
Grade					
First	16	84	75	(33.8)	>0.05
Second	25	75	88	(39.6)	
Third	25.4	74.6	56	(26.6)	

sites oriented towards making new friends. Because cyber-sex sites interest adolescents and may misinform them, measures concerning these sites and initiatives to inform this age group on sexuality are needed. In some previous studies the boundary at which symptoms of Internet addiction begins has been established as 4 hours, most markedly in Internet users of less than 12 months.^{8,13,14} In the present study, the total weekly Internet use was found to be 4 hours and higher in users of 36 months and more. This discrepancy may be due to the fact that Internet use was less widespread at the time previous studies were performed. When weekly Internet use is compared with the total number of places where the Internet is accessed, it is seen that users spending 4 hours and longer access the Internet from 2 or more places. This may be interpreted to mean that students in the addiction-prone group access the Internet at every opportunity. There were relatives' complaints on their children's postponing meals due to the Internet use. Gaining healthy nutritional behaviors in the childhood and adolescent ages gives individuals more chance to survive healthier lives. Adolescence is such a period that significant mental, sexual and physical changes are recorded.^{15,16} The reason for ending a session among the majority of those accessing the Internet at home is finishing their business or being told to by those around them (Table 3). This may show that young people without sufficient self-control concerning the Internet neglect important needs such as meals, and are unable to moderate Internet use, leading to problems with their family members. In some studies, it has been concluded that people attracted to the Internet tend to be those seeking escape from their lives or family problems; thus neglected issues may worsen, leading to a vicious cycle and causing young people with familial problems to become more addicted to the Internet. Programs to increase the level of awareness of the subject could be implemented to avoid future familial problems and additional negative psychological effects. It has been reported that Internet addiction is more frequent among those addicted to alcohol or other substances. In the present study, products containing addictive substances consumed by this age group such as cigarettes, cola, tea, and instant coffee, the only significant correlation found was between cigarette use and weekly Internet use of 20 hours, which, according to some researchers is the lower limit for addiction.¹² No significant correlation was found between cigarette use and Internet use of 4 hours, the boundary used in some other studies. Thus focusing on addiction-prone groups in further studies may be useful for supporting these results and determining a target group for counseling.

Recommendations based on the results of this study are as follows: researching the cause of the high rate of frequenting Internet cafes among those

with home Internet access; informing children and their parents on the harm that may result from forming relationships with strangers over the Internet; providing this age group with information on sexual subjects due to its common attraction of cyber-sex sites and the harmful effects such sites may have on young people; increasing the awareness of families and children of family problems that Internet use may lead to and their adverse psychological effects; counseling on Internet addiction and substance addiction for those who use the Internet excessively; and special counseling for students who do not change their Internet habits despite believing that they have adverse effects on their school performance.

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