



Internet use and psychosocial health of school aged children



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ABSTRACT

This study was carried out to determine the internet use and psychosocial health of school aged children. Children in grades 4–7 and their parents were invited to participate. The study group consisted of 737 children. Data were collected using a descriptive form and Pediatric Symptom Checklist-17. Majority of children used internet, one of each five children had psychosocial problem risk. Risk of psychosocial problem was higher in males, children who have 'not working father', use internet 5 years and over, use internet for 3 h and over per day. These results suggest that families should be informed about associations between internet use and psychosocial problems that measures should be taken for providing controlled internet use for children.

1. Introduction

Technological developments vastly affect communication and information technologies. Such developments have accelerated the production, distribution and the use of information. The most important innovation brought by information technologies is the increase in internet use. At present, there are about three billion internet users in the world, accounting for 43.9% of the world population (The World Bank, 2015). In Turkey, 76.3% of household have internet access and 61.2% of the population use the internet (Turkish Statistical Institute, 2016). Although rates of internet use have been increasing both in Turkey and worldwide at all ages, they show a particular increase among children and adolescents.

Internet has both positive and negative effects on children. It provides an infrastructure so that children can discover the world, learn and have fun. When the internet is used in a conscientious way, it helps passive individuals become more productive members of the society, provides quick and easy access to information and enables effective time management. The internet is a good way to socialize as children and teenagers find the opportunity to make new friends to talk about anything and maintain their social relations via the internet (Akbulut, 2013; Koyuncu et al., 2014; Li et al., 2014; Park, 2009).

In spite of the positive effects of internet use, uncontrolled and excessive use of internet might lead to internet addiction and cause physical, social, and psychological health problems (Belanger et al., 2011; Gür et al., 2015; Lee et al., 2014; Li et al., 2014; Park, 2009). The excessive use of internet might decrease the ability to form interpersonal relationships (Akbulut, 2013; Arslan et al., 2014; Gür et al., 2015).

Due to the nature of internet as a way of communication, children might lie about their age, gender, and many other characteristics that would allow them to behave differently them in real life. This might turn into a problem as the lack of social practice can retard children from being able to develop healthy peer relationships. The lack of accountability or responsibility may easily contribute to some negative social interactions such as aggression (Akbulut, 2013; Gür et al., 2015). The internet might cause children to behave violently and aggressively, to lose their speaking and writing skills and to develop physical disorders and concentration problems (Gür et al., 2015; Ko et al., 2009).

Children should be protected from detrimental effects of the internet so that they can maintain their physical and psychosocial health. Therefore, we have planned a study to determine internet use and psychosocial health of school-aged children. It is believed that the study will contribute to the planning of initiatives for preventing negative effects of internet use on the psychosocial health of school-aged children and that it will be a leading study for health professionals who work in the fields of public and school health.

The study was carried out to determine internet use and psychosocial health of school-aged children.

1.1. Study questions

- What is the rate of internet use in school-aged children?
- What are the characteristics of internet use of children?
- What is the pediatric symptom checklist score of children?
- Is there any interaction between internet use and psychosocial problem risk?

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- Is there any interaction between characteristics related to internet use and psychosocial problem risk in internet use?
- Is there any interaction between socio-demographic characteristics and psychosocial problem risk in internet use?

2. Methods

2.1. Design and sample

A descriptive and cross-sectional study was conducted in Ankara, Turkey. According to the Ministry of Education, Turkey, there is not a socio-demographic classification between schools. Therefore, only one district was selected. In order to determine sample size, we calculated that 175 participants would be required in each grades (4th, 5th, 6th and 7th grade) from four schools for an effect size of 0.75 with 80% power at a significance level of 0.05 using G*Power 3. A representative sample of student population was selected in two stages. In the first stage, schools were selected. With the assumption that people who participated in this study are homogeneous, it was decided that a study needed to be carried out in 4 of 11 schools in total which are in one district. While choosing schools, sequence number from 1 to 11 was given for 11 schools and these schools were listed. Four of 11 schools were selected with the method of simple random sampling. In the second stage, participants were selected from each of 4 schools at four different grades (4th, 5th, 6th and 7th grade) and 737 children were included in the study (Table 1). The participation rate was 100.0%.

Children in grades 4–7 and their parents were invited to participate. The reason of including 4, 5, 6 and 7th grade children into the study is that children in pre-adolescent period just begin to realize their personality and social environments during this period and want to be independent from their parents.

2.2. Instruments

Data were collected through a descriptive form, and Pediatric Symptom Checklist-17 (PSC-17). The descriptive form was prepared separately for children and for their parents based on literature (Cao et al., 2011; Durkee et al., 2012; Ko et al., 2009; Park, 2009; Shields and Kane, 2011). In the descriptive form for children; there were 12 questions related to age, gender, class and computer/internet use. In the descriptive form for parents; there were 14 questions to determine the socio-demographic characteristics such as education, working and monthly family income and for determining features related to computer/internet use of children.

Pediatric Symptom Checklist-17 was used for early diagnosis of psychosocial problems in the childhood (ages between 6 and 16) by providing that parents evaluate behaviors of their children. All items of PSC-17 scale were positive. Points which were given for each items were collected (not true/never=0, sometimes or little true=1, very often or often=2). The highest point to be gained from the scale is 34 and the lowest one being 0. Using a cut-off score of 12 is recommended

Table 1
Sample size of the study.

Sequence Number	School	Total Sample Student Numbers				Total
		4th class	5th class	6th class	7th class	
1	First school	33	52	53	61	199
4	Second school	57	43	42	32	174
7	Third school	59	65	64	62	250
10	Fourth school	31	25	31	27	114
	Total	180	185	190	182	737

when screening for psychosocial problems. Turkish validity and reliability of the scale was provided by Erdoğan and Öztürk (2011) and its Cronbach's alpha value was found as 0.81. In this study, Cronbach's alpha value was 0.79.

2.3. Data collection

Before data collection, notification was made possible via negotiations with school managements and teachers before the implementation. Parents of children were invited to participate to the study with an invitation form. The invitation, informed consent form for the parents of children who will participate into the study, questionnaire form and PSC – 17 were sent home in a sealed envelope. Parents who accepted to participate were invited and were asked to fill forms. One week later, envelopes were returned by the children to classroom teachers. Finally, the envelopes were received from teachers by researchers.

Questionnaire forms were applied on children whose families approved in counseling course hours. The children were informed about the purpose of the study. After reading the contents of the consent form, oral and written approvals of children were received. Questionnaire form was given to children who accepted to participate into study and whose parents gave their approvals. The implementation of questionnaire took 20–25 min.

2.4. Ethical consideration

Ethical Board's approval of the study was received from Ethical Committee. Written permit was received by the Directorate of Education for schools in which the implementation would be made before the study. The informed consent forms were sent to parents, while the written permission of the parents was received. Consent form was read to children who participated in the study and oral and written permissions were obtained.

2.5. Data analysis

Data analysis was performed using SPSS 15.0 (Statistical Package for the Social Sciences, Chicago, Illinois). Categorical variables were presented as frequencies and percentages. Continuous variables were expressed as mean and standard deviation (SD). For evaluating the normality of the data distribution, Shapiro-Wilk test or Kolmogorov-Smirnov test were used. Independent samples *t*-test was used in two groups which had continuous variables. Spearman's correlation coefficient was used for correlation.

The cut-off value of PCS-17 was 12 (< 12 normal and ≥ 12 psychosocial problem risk). Univariate and multivariate logistic regression was performed with a dichotomous dependent variable PCS-17. Socio-demographic and characteristics related to internet use variables were the independent variables. Associations between PCS-17 and all other parameters were first analyzed by univariate logistic regression analysis. All variables found to be significant in univariate analysis were included in multivariate analysis using logistic regression model.

3. Results

The mean age of children was 11.5 (standard deviation=1.1, min=10, max=13) and 42.2% of these children were male. According to parents' statements, 67.6% of mothers and 44.6% of fathers were primary school graduate, 41.1% of who stated that their monthly income were low (Table 2).

It was determined that 80.5% of the children had computer in their houses that 33% had password for access to their computers and that 97.4% were internet users. It was also determined that 41.6% of children used internet for more than 3 years. There was a positive weak correlation between the children age and the duration of internet use ($r=0.163$; $p=0.001$). More than half the children (63.6%) used

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