

Determination of Internet Addiction and the Attitudes of Children's Families

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Abstract:

Purpose: The purpose of this study was to determine the internet use habits of primary school children aged between 11-14, the level of their internet dependence, and the attitudes of their families to internet use.

Methods: The sample for this descriptive study was formed from 335 children at a primary school. A sociodemographic data form, an Internet Dependence Scale, and an Internet Family Attitudes Scale were used.

Results: The boys used the internet more for playing games, watching films, and chatting than did the girls, and boys' internet dependence scores were higher than the girls' ($p < 0.05$). Family attitudes were found to be more negligent towards boys, and more permissive towards girls ($p < 0.05$).

Conclusions: The results of the study showed that the children spent most of their free time with the internet, that their social friendships were insufficient and their academic performance was not at the desired level, and that their families had an attitude of indulgence or negligence in managing their children's use of the internet. School nurses have a key role in education, information, coordination and cooperation in the development of positive attitudes and behaviour using the internet.

Keywords - Primary school, Internet dependence, School health, School nurses

I. Introduction

In the adolescent period, an increase can be seen not only in positive habits such as reading and taking part in sport, but also in the use of tobacco and alcohol, to an extent that can reach the level of dependence. Another addiction which cannot be ignored is the use of computers and the internet by young people [1]. Recently, the internet has become an inseparable part of daily life, and its use is increasing because of the possibilities and convenience it provides. Research by the Turkish Statistics Institute has shown that the level of computer use is 93.5%, the level of internet access is 92.5% and rising, and that young people are the group with the greatest internet use [2]. This technology which provides its users with a means of accessing information and solving problems and of self-directed education, but at the same time its uncontrolled use is a cause for concern and can affect personal development in a negative way, even to the extent of dependence [3,4,5]. Internet dependence is defined as spending a long time on the internet and being unable to control use of the internet. Spending a long time on the internet has been stated to be a cause, a symptom and a result of internet dependence [6,7,8].

The internet is known to have negative physical (obesity, carpal tunnel syndrome, back and neck pain, posture, sleeping and eating problems), behavioral, mental and social effects (not spending time with friends, not participating in family life, and social isolation) [9,10,11]. Considering this negative effects it can have on children and young people, families should make themselves aware of the positive and negative aspects of internet use, and protect their children from its harmful effects. Studies have shown that children who do not get the support they need from their families or who have problems with their families try to express themselves in the virtual world [12]. Also, the attitudes of families to internet use have been found to play a role in children's internet dependence [4,13,14]. According to the literature, internet use behavior is affected by whether a family has a negligent, permissive, authoritarian or democratic attitude. Parents who have a permissive attitude give their children a large amount of freedom, and exercise little control over them to the extent of neglect. Children raised in this kind of family environment can do what they want, when they want. Negligent parents have no time to devote to their children, take little interest in their children and exercise no control over them. They meet their children's basic physiological needs but take no interest in their emotional needs [4,12,13].

In Turkey as in the rest of the world children are starting to use the internet at a younger and younger age, and awareness-raising studies need to be started from a very young age. Families must be the focus of educators and health professionals in improving the effect of the internet on the physical, social and psychological development of children and on their social and educational lives, and in raising awareness of its negative effects. The purpose of this study was to determine the internet use habits of primary school children aged between 11-14, the level of their internet dependence, and the attitudes of their families to internet use.

II. Methods

This study was carried out descriptively and analytically. The sample population for the study was formed from children aged 11-14 (second-grade students in the 5th, 6th, 7th and 8th classes) of a primary school in the Çiğli area (N: 356). There was no sampling, and all the students were included in the study. The sample was formed from 335 students; 21 students were not included because they were absent from school during the process of data collection, and six students were not included because they did not fill in the data collection forms completely (participation rate: 95.7%).

2.1. Data Collection Instruments

2.1.1. Student Sociodemographic Data Form

This form was created with the help of current literature [3,14,15-18] in order to obtain students' sociodemographic data. The form consisted of a total of 30 questions concerning various sociodemographic characteristics of the students and their parents, the students' spare-time activities, and their habits with regard to internet use.

2.1.2. Internet Dependence Scale (IDS)

This scale, used in the study to determine internet dependence, was the Internet Dependence Subscale of the Computer Dependence Scale developed for adolescents by Ayas, Çakır and Horzum [19]. The internet dependence subscale has five Likert-type gradations - Generally (5), Often (4), Occasionally (3), Seldom (2) and Never (1) – and 28 items. The score is between 28 and 140, and higher scores indicate greater internet dependence. The Cronbach alpha reliability coefficient of the scale was found to be 0.93 in this study, and was evaluated as high (>0.80).

2.1.3. Internet Family Attitude Scale- IFAS

This scale was developed by van Rooij and van den Eijden [20] and adapted to Turkish by Ayas and Horzum [14]. The scale consists of two subscales containing 25 items (11 items for the factor of family control and 14 items for the factor of family closeness). In evaluating the scale, each participant scored from 1 to 5 points on the items in the dimensions of family control and closeness. A score of less than three was counted as low, and any other score was counted as high. That is, high/low family control and high/low family closeness had a 2x2 structure. Low family control and closeness signified a negligent attitude to internet use, high family control and low family closeness signified an authoritarian attitude with regard to internet use, low family control and high family closeness signified a permissive attitude to internet use, and high family control and closeness signified a democratic family attitude to internet use [21,22]. The Cronbach alpha value of the 25-item scale was found to be 0.91 in this study and was evaluated as high (>0.80). Permission to use the two scales was obtained by telephone from the authors.

After data collection, all students were given a 40-minute educational session. Interactive learning methods, question-answer, discussion methods and powerpoint slide presentations were used in these education sessions. Also, education and information was given to the parents of the children. Effects on health and the benefits and harm of the internet and the long time use of computers were mentioned in these sessions.

2.2. Ethical Considerations

Before starting the research, ethical approval was obtained from the Research Ethics Committee for non-invasive clinical studies (decision No. 177). The purpose of the study was explained, after which verbal and written consent was obtained from the students and their parents, who were then enrolled voluntarily in the study. The subjects were not named, and only numbers were given in order to ensure privacy.

2.3. Statistical Analysis

Statistical Package for the Social Sciences (SPSS) software was used for data analysis in numerical and percentage values χ^2 for nominal values. Kolmogorov-Smirnov was found lower higher than $p < 0.05$ for IFAS and Family Closeness, so Mann-Whitney U and Kruskal-Wallis test was used. T-test and Anova were used for quantitative data with normal distribution (for Family Control). Academic success was evaluated according to the system of the Ministry of National Education. The children were asked how many friends they had inside and outside school in order to determine the size of their social environment.

III. Results

3.1. Sociodemographic Characteristics

It was found that 51.6% of the children taking part in the study were male (n= 173) and 48.4% were female (n=162), and that their mean age was 13.01 ± 1.07 years. The parents of 91.9% of them were alive and with them, and 59.7% of the fathers and 55.5% of the mothers were educated to primary school level. The fathers of 60.9% were workers, and 75.2% of the mothers were housewives (Table 1). The children's academic

success was found (the mean of their year-end marks) to be 70 (min-max: 0-100). The girls' marks (72.6 ± 11.6) were higher than the boys' (65.9 ± 12.3) ($t = -4.63, p = 0.000$).

3.2. Findings of Social Activities and Computer/Internet Using of Students

Fourty point two of percent of children played games, 37.3% stated that they read books, 34.9% that they played on the computer, 23.8% that they watched television, 17.6% that they studied lessons or practiced tests, and 12.2% that they took part in artistic activities (listening to music, singing, playing an instrument, drawing, etc.) Most (77.9%) read books occasionally, and only 15.8% said that they read books on a regular daily basis. It was observed that 94.6% of them had close friends at school, and 81.8% outside the school, while 18.3% had no friends outside the school (Table 1).

Seventy six point seven percent of the children had a computer at home, and 37.9% had their own computer. The rate of internet connection at home was 63.3%, but 65.7% went to an internet cafe. Most of the children (75.2%) had an email account, and 81.5% belonged to a social media site such as Facebook or MSN. As for the parents, 55.5% of the fathers and 52.2% of the mothers used the internet. When the children encountered a problem with the internet, 50.1% sought help from an older sibling and 17.6% from their fathers, while 20.9% had no one to ask for help from (Table 1). The boys played games ($\chi^2 = 6.84, p = 0.009$) and listened to music ($\chi^2 = 7.007, p = 0.008$) more than the girls. Girls used the internet/computer more for studying than did the boys ($\chi^2 = 5.2, p = 0.02$). Boys used the internet for downloading and watching films and chatting ($p > 0.05$) more than the girls but there was no statistical difference (Table 2).

It was found that a majority (86%) used the internet for 0-3 hours/day, and 14% used it for longer than three hours/day. When they used the internet for too long, 84.5% of the children stated that they were warned, while 15.5% said that they did not get a warning from anyone. The length of time spent using the internet showed a difference by sex, with boys using the internet for longer than girls ($t = 2.44, p = 0.015$). The children in class seven and eight used the internet for longer than children in class six ($F = 3.50, p = 0.01$) (Table 3). No relationship was established between academic achievement and the length of time spent using the internet ($p > 0.05$).

3.3. Findings relating to Students' Scores on the Internet Dependence Scale (IDS) and Internet Family Attitude Scale (IFAS)

The children's total score on the IDS was found to be 49.1 ± 20.1 (min-max: 28-132). When this was compared with the sex of the children, boys had a higher score than girls but there was no statistical difference ($p > 0.05$). The IDS scores of the 7th and 8th graders were higher than the 5th graders (KWU:12.42; $p = 0.006$). The mean scores on the IDS of children who used the internet for longer than three hours a day were higher than those who used the internet for less three hours a day (MWU=4061.000; $p = 0.000$) (Table 3). It was determined that there was a positively correlated significant relationship between the average of internet use duration and IDS scores ($r = 0.322, p = 0.000$) and also that the more the internet was used, the higher were the IDS scores. Neither the educational status of the parents nor the family income had any effect on the children's scores on the internet dependence scale.

As Fig. 1 shows, 118 families (35.2%) showed a permissive attitude to internet use according to the Family Attitude Scale, while 129 families (38.5%) showed a negligent attitude and 118 families (35.2%) showed an indulgent attitude. 74 families (22.1%) showed a democratic attitude, and 14 families (4.2%) showed an authoritarian attitude. Family attitude to the internet showed statistical differences on the scale according to the children's gender, age and class at school ($p < 0.05$). It was determined that the families of boys showed a more negligent attitude, while those of girls were more indulgent ($\chi^2 = 20.64, p = 0.000$). It was found out that the families of the students aged between 11-12 were negligent, indulgent and democratic in proportions which was close to each other, but the families of students aged between 13 and 14 were more negligent and indulgent. ($\chi^2 = 7.96, p = 0.04$). The families of 8th class students showed a more negligent attitude and the families of 7th class students showed a more indulgent attitude than those of students in other classes ($\chi^2 = 17.25, p = 0.04$). No relationship was found between family attitudes and time of computer/internet use ($p > 0.05$) (Table 4).

Table 1. Socio-demographic characteristics of students

Socio-demographic characteristics	n	%
Gender		
Girl	162	48.4
Boy	173	51.6
Age (mean±SD) (13016±1.07)		
11	34	10.2
12	68	20.3
13	105	31.3
14	128	38.2

Class		
5 th	42	12.5
6 th	63	18.8
7 th	110	32.8
8 th	120	35.8
Parents' status		
Married	308	91.9
Divorced	18	5.4
Other	5	1.5
Deceased	4	1.2
Father's education		
Illiterate	16	4.8
Primary school	200	59.7
High school or college	115	34.3
Deceased	4	1.2
Mother's education		
Illiterate	40	12.0
Primary school	186	55.5
High school or college	109	32.5
Reading		
Never	21	6.3
Every day	53	15.8
Sometimes	261	77.9
Leisure activities*		
Reading	125	37.3
Playing games	135	40.2
Playing on computer	117	34.9
Studying	80	23.8
Artistic activities (music, playing guitar, painting)	59 41	17.6 12.2
Number of close friends at school		
<3	18	5.4
≥3	317	94.6
Number of close friends outside of school		
<3	61	18.3
≥3	274	81.8
Computer at home		
Yes	257	76.7
No	78	23.3
Own computer at home		
Yes	127	37.9
No	208	62.1
Internet access at home		
Yes	212	63.3
No	123	36.7
People from others		
Mother	38	11.3
Father	59	17.6
Sister / brother	168	50.1
Nobody	70	20.9
Daily computer usage period		
0-3 hours	288	86.0
>3hours	47	14.0
E-mail account		
Yes	83	24.8
No	252	75.2
Total	335	100

*Multiple answers were provided.

Table 2. Comparison of girls' and boys' purpose of computer use

Variables	Female		Male		x ² , p
	n	%	n	%	
Surf in Social sites					
No	31	17.9	31	19.1	p>0.05
Yes	142	82.1	131	80.9	
Playing					
No	16	9.2	4	2.5	6.84 p=0.009
Yes	157	90.8	158	97.5	
Listening to music					
No	18	9.2	5	3.1	7.007 p=0.008
Yes	155	89.6	157	96.9	

Studying					
No	4	2.5	14	8.1	5.2 p=0.023
Yes	158	97.5	159	91.9	
Watching movies					p>0.05
No	12	6.9	5	3.1	
Yes	159	93.1	157	96.9	
Chatting					p>0.05
No	7	4.3	4	2.3	
Yes	155	95.7	169	97.7	

Table 3. Distribution of internet dependence scores by the children's sex, class, computer usage period and the length of time spent using the internet, and internet dependence scores

Variables	Length of time spent using the internet x ± SD	Internet dependence scores x ± SD
Sex		
Male	2.1 ± 1.6	51.0 ± 20.9
Female	1.7 ± 1.4	47.1 ± 19.02
	t=2.44 p=0.015	MWU=12344.0 p=0.05
Class		
5 th	1.80±1.6	41.09±15.90
6 th	1.38±1.1	46.67±17.89
7 th	2.08±1.6	50.72±21.50
8 th	2.09±1.5	51.85±20.59
	F=3.50 p=0.01	KW=12.42 p=0.006
Daily Computer Usage Time		
0-3 hours		47.6±18.9
>3hours		61.4±22.5
		MWU=4061.000 p=0.000

Table 4. Relationship between students' characteristics and family attitudes to the internet

Demographic characteristics	Family attitude										x ² , p
	Negligent		Indulgent		Democratic		Authoritarian		Total		
	n	%	n	%	n	%	n	%	n	%	
Sex											20.640 p = 0.000
Male	48	29.6	68	42.0	2	1.2	44	27.2	162	100	
Female	81	46.8	50	28.9	12	6.9	30	17.3	173	100	
Age											7.965 p = 0.047
12	33	32.4	32	31.4	5	4.9	32	31.4	102	100	
13	96	41.2	86	36.9	9	3.9	42	18.0	233	100	
Class											17.258 p = 0.045
5 th	15	35.7	8	19.0	2	4.8	17	40.5	42	100	
6 th	21	33.3	22	34.9	4	6.3	16	25.4	63	100	
7 th	41	37.3	45	40.9	6	5.5	18	16.4	110	100	
8 th	52	43.3	43	35.8	2	1.7	23	19.2	120	100	
Computer usage period											4.686 p = 0.196
0-3 hours	110	38.2	97	33.7	12	4.2	69	24.0	288	100	
>3hours	19	40.4	21	44.7	2	4.3	5	10.6	47	100	

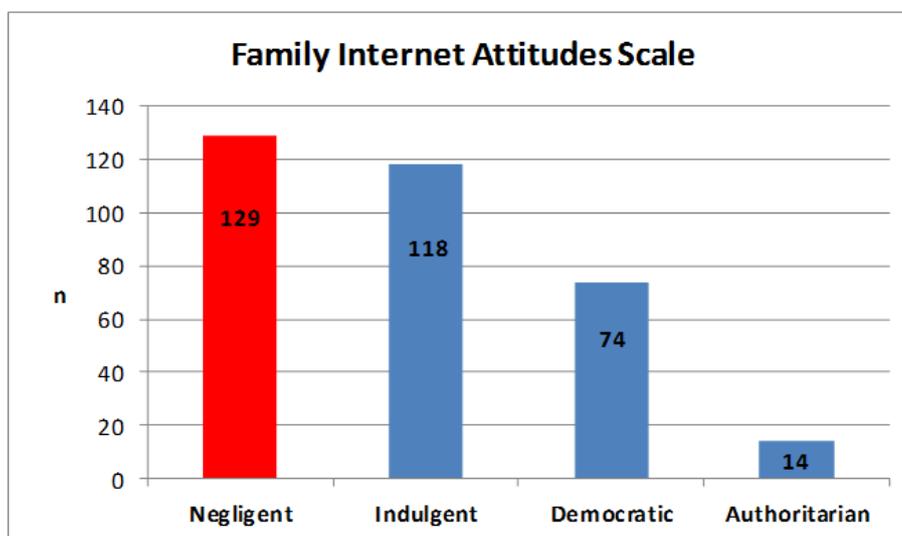


Figure 1. Distribution of children according to classification on the family internet attitudes scale

IV. DISCUSSION

Today when computers and the internet have become an integral part of daily life, studies by educationalists of the behaviour and attitudes of children and young people are increasing in number. It can be seen from the literature that school nurses have not paid enough attention to this topic, which affects the physiological and psychosocial health of children and young people. This study is important in that it emphasises the effects of the internet and their use on the health of children and adolescents, and brings the topic to the attention of school nurses. Gurca et al.'s study shows that the children are using internet at a high level and unthinkingly, in a way which could cause serious problems for the musculo-skeletal system, visual problems, and psychosocial problems such as social isolation, learning violent behaviour, and unhealthy sexual development [23]. It is thought that the findings of the study will be a guide for future awareness education. At the same time it sets out the importance of multidisciplinary team work (school health team, teacher, psychologist, social services expert, etc.) and cooperation between families, teachers and civil organisations in the prevention and treatment of technology dependence. School nurses should organise class education on health protection and development, dealing with the problems which may be encountered in the future by children and young people, and how to protect against them.

Although a majority of the children stated that they had close friends both inside and outside the school, it was a remarkable finding that few of them actually spent time with their friends, showing that in this period when socialisation is beginning, the time spent with friends is not enough. The fact that a majority of the children were members of social media sites took their communication into a virtual dimension, and this made them more dependent on the internet. It was reported in two other studies that about one third of children in classes 6, 7 and 8 used the internet for chatting (MSN, ICQ, Facebook, etc.) [18,24,25]. In another study by the Ministry of Telecommunications, it was established that 66% of children in the 9-16 year age group used social networks at least once a day, of which Facebook at 99% was the most used [26]. Government and civil organisations along with school health teams should work to increase social activities where children spend time with their peers, thus minimizing the negative effects of internet use, which can even amount to social isolation.

Similar to the results of a study by Turkish Statistical Institute [1], the results of this study showed that children and young people mostly used the internet for such purposes as playing games, watching films and chatting, and that these uses showed a variation by sex ($p < 0.005$). As with our findings, it was found in a study by Döner [25] that activities such as watching films or playing games were chosen more by boys, while girls preferred activities such as setting up virtual communications. In some studies [27,29,30] it was also found that boys used the internet more for playing games than did girls. The games which attract the attention of children can have negative psychological, sociological and physical effects because of violent, aggressive, frightening and stressful, introverted and anti-social content [31]. The school nurses can have a positive influence on raising awareness of how children and young people and their parents can make better use of information technology.

In studies of primary school children, it was found that internet dependence rose as length of time of internet use increased, and that with use of the internet for more than three hours, dependence reached a critical level [16,27,32,33,34]. It was found in the present study that a majority of the children used the internet for 0-3 hours, and that the mean internet dependence scores of children who used the internet than 3 hours longer. It is thought that the children's generally low academic achievement may be connected to the fact that most of them did not use the internet intensively or effectively. Other studies have reported that as children get older they use the internet for longer [18,25]. The present study also showed that children in class 7 used the internet more than those in class 6. In class 8, students enter a year-end academic examination at a national level, and so the level of internet use is lower. As in a study by Ayas & Horzum [14], it was found that children most often got a warning from their mothers when they used the internet for too long. In the light of all these results, it was thought that auto-control was not enough to limit the time that children and young people spent on the internet, and that parents might be unaware or powerless in this regard.

The IDS score of boys were found to be higher than those of girls as other study's findings [11,15,16,17,25,34,35,36]. On the other hand, some studies found more internet dependence in girls than in boys, while other studies found no difference according to sex [13,29,37]. Similarities or differences between our results and those of other studies may represent cultural similarities or differences.

It was reported that family attitudes influenced children's internet dependence, and some studies found that there was more internet dependence in children from families with authoritarian or negligent attitudes [14,22,28,38]. However much this study showed a relationship between internet dependence and family attitudes, it can be seen that more permissive and negligent family attitudes to internet use are closely related to the length of time that children and young people spend on the internet and to the main purpose for which these are used. Thus, the results of the study showed that families showed a more negligent attitude to boys and a more permissive attitude to girls. In some studies [22,39], an authoritarian family attitude to the internet was observed, while in others [14,28,38], a negligent attitude was seen. Considering levels and areas of use by sex, the factor of sex and the importance of family attitude are once more brought to the fore in terms of the risk of

dependence. School nurses should work individually with children who have been shown to have a problem with internet dependence and their families. A beneficial approach would be to carry out more work to identify internet dependence and related attitudes in families, even applying attitude scales to parents, in order to assess the situation and bring out the problems. In addition, giving information on the importance of taking a democratic approach on the topic of internet use and of families always communicating with their children, and the ability to show behaviour which solves problems by sharing rather than prohibiting, may be another effective approach.

V. Conclusion

The results of the study showed that the children spent most of their free time with the internet, that their social friendships were insufficient and their academic performance was not at the desired level, and that their families had an attitude of indulgence or negligence in managing their children's use of the internet. It can also be said that the children's use of the internet was more for amusement than for obtaining information, that as the length of time spent using the internet increased so did internet dependence, and that internet dependence was more seen in boys. The relationship between internet use for a long time and health effects and differentiations according to gender should be examined in further studies.

The results of this study support the idea that easy access to the internet increases the level and length of time of use, that it is affected family attitudes, and along with this secure and correct use decreases, and that all of this increases internet dependence. Children's use of the internet and factors affecting it must be monitored routinely by the school health nurse, teachers and psychologists in the context of school health measures, and education sessions on information and awareness should be arranged for children and their families in the light of these results. In this regard, the school nurse has a key role to play as case manager, coordinator and collaborator.

For the future, it is suggested that research should be carried out on the relationship between sleep and eating problems and internet use in relation to the habits of internet use of children and young people according to their cultural situation.

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