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Problematic Internet Use and Cyber Bullying in Vocational School Students*

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ABSTRACT

This study investigated the relationships between vocational school students' problematic internet use and cyber bullying behaviors. A total of 563 vocational school students (314 males and 249 females) attending various departments in the vocational schools in Bolu province. Problematic Internet Usage Scale and Cyber Bullying Scale were used in the study. Multiple linear regression analysis was utilized in data analysis. According to analysis results, time spent online and problematic internet use accounted for 13.8% of the variance in cyber bullying.

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Keywords:
Cyber bullying, problematic internet use, vocational school students

Introduction

Computer and internet use is now a part of life in this era called the age of information and technology. Although the primary purpose of internet was to increase communication and facilitate information sharing, increasing popularity of internet much faster than expected has resulted in a new type of addiction titled internet addiction which is pathological overexploitation of internet (Arısoy, 2009a). While some individual may limit internet use in line with their needs, it is observed that some users cannot limit their use of internet and face losses at work and in social life based on internet overuse.

Overuse of internet has placed social relations and work life of some users in danger and the concept of "Internet Addiction", which refers to harmful use and uncontrolled impulses related to internet, has been developed. Comparison of the criteria used in the diagnosis of other addictions with the symptoms of overuse of internet shows that symptoms related to internet overuse are very similar to those of pathological gambling (Beard & Wolf, 2001). Yellowlees and Marks (2007) reported that problematic internet use is characterized as the use of e-mail and private online facilities and spending time in online gambling sites which may cause internet addiction. The authors specifically emphasized that problematic internet users display symptoms of addiction and impulse control disorders.

No common perspectives have been generated by researchers to describe problematic internet use which is a very recent concept that are termed overuse of internet, problematic internet use, pathological internet use, computer addiction and internet addiction (Caplan, 2002; Davis, 2001; Morahan-Martin and Schumacher, 2000; Young, 1998). However, the concept which includes various definitions commonly is the

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problematic and over use of internet (Beard and Wolf, 2001; Ceyhan, Ceyhan and Gürcan, 2007). These concepts with negative connotations originate from lack of correct and beneficial use of internet (Peker, 2013). Since no sufficient information can be found in the literature about the extent of similarities between problematic internet use and various obsessive behaviors, discussions are ongoing about what type of "addiction" problematic internet use is and in which category it will be assessed (Reisoğlu, Gedik & Göktaş, 2013). Internet itself can be an object which can cause addiction as well as preparing an environment for existing objects of addiction (Gönül, 2002).

Use of internet has become more common with the help of communication tools such as cell phones and short message service (Arıcak, 2009). Electronic communication tools that are also found in classrooms with the help of these developments have brought significant problems in their wake (Li, 2005): Cyber bullying and cyber victimization (Özbay, 2013).

Definition of cyber bullying, commonly used by many researchers, states that cyber bullying is the use of intentional, continuous, harmful and aggressive behaviors by an individual or a group with the help of information and communication technologies towards a victim that cannot defend himself/herself (Arıcak, 2011; Dilmaç, 2009; Kowalski vande Limber, 2007; Marees & Peterman, 2012; Smith, Mahdavi, Carvalho & Tippett, 2006; Vandebosch & Van Cleemput, 2008; Willard, 2006; Wolak, Mitchell & Finkelhor, 2007). According to Erdur-Baker & Kavşut (2007), cyber bullying is the performance of real life bullying behaviors with the use of virtual communication tools such as internet and cell phones. These behaviors' include stealing personal passwords, trying to obtain the e-mail addresses of others, sending e-mails that contain viruses, sending obscene messages and using inappropriate photos of pothers in social networking sites (Arıcak, 2009).

Cyber bullying behaviors which added a new dimension to the concept of bullying comply with direct verbal bullying, emotional bullying and threatening bullying according to Elliot's classification. Verbal bullying behaviors such as name calling, humiliating, spreading rumors, making fun, making bad jokes, writing bad things about someone and leaving offending notes can be observed in cyber bullying as well. Emotional bullying behaviors such as excluding from the group, showing unfriendly behavior on purpose, racial humiliations and emotional torture may also be found in cyber bullying. Cyber bullying can also include threatening bullying behaviors such as asking for money, possessions, copies of homework and blackmailing (Manap, 2012). Internet is perceived as an environment by children which they can present aggressive and violent behavior and they can display bullying behaviors that can harm the others. These behaviors called cyber bullying may include insults, spreading lies and rumors about others, using sexuality and physical appearance as well as publishing personal information about the children and adolescents without their consent. Continuity and lack of power balance are considered as two criteria in cyber bullying behaviors' (Nocentini et. al., 2010). Lack of skills in using social media opportunities and lack of power balance regarding the information about internet and computer use may cause individuals with less capacity to be unable to protect themselves (Tanrıkulu, Kınay ve Arıcak, 2013).

Performance of one of these methods cited above is enough to define the perpetrator as a cyber-bully. It is observed in schools that cyber bullying is becoming a problem at schools as well. Students are bullying other students by using electronic communication tools (Li, 2005). Some students use cell phones or the school's internet system for cyber bullying. Students are often able to pass firewalls and send harmful content. Schools and homes are identified to be the locations in which students present cyber bullying behaviors the most. Unfortunately, electronic communication has turned into a new tool for the "fully wired" children and youth of today used for ridicule, harassment and slander (Willard, 2007). This finding points to the existence of a relationship between problematic internet use and cyber bullying behaviors. Erdur-Baker (2010) identified that problematic internet behavior is one of the important predictors of cyber bullying behaviors in a study which found that problematic internet behaviors such as meeting others through online sites, asking for face to face meetings, accepting face to face meeting requests and sharing personal information online predict cyber bullying and cyber victimization to a large extent. Another study by Erdur-Baker and Tanrıkulu (2010) presented that problematic internet behaviors displayed most frequently by university students were face to face meetings with people they met online, visiting inappropriate websites (such as pornographic sites) and sharing their personal information comfortably with

others in social networking sites. These studies emphasize that problematic internet behaviors are important variables that predict cyber bullying behaviors.

In his study, Türkoğlu (2013) found relationships between problematic use of internet and cyber bullying behaviors. Similarly, Jung et. al. (2014) reported that cyber bullying has a clear connection with increased problematic use of internet. It was also identified that delinquency and aggressive behaviors are related to cyber bullying behaviors.

In this context, the study aimed to examine vocational school students' problematic internet use and cyber bullying behaviors in terms of some variables (gender, age, time spent online). Answers to questions provided below were sought in line with this purpose:

1. What are the views of students attending vocational schools in Bolu province on problematic internet use and cyber bullying behaviors?
2. Do views of students attending vocational schools in Bolu province on problematic internet use and cyber bullying behaviors show significant differences based on independent variables (gender, age, time spent online)?
3. Are problematic internet use and time spent online significant predictors of cyber bullying behaviors of students attending vocational schools in Bolu province?

Method

Research Model

The study is descriptive and utilized relational screening model. According to Karasar (2009) correlation studies are research approaches aim at investigating the existence and degree of changes between two and more variables. In the present study, in the framework of this model, the problematic internet use and cyber bullying levels of vocational school students in Bolu province are examined.

Population and Sample

The population of the study was composed of 1077 10th grade and 1106 12th grade students attending vocational schools in Bolu. Since it would be difficult to reach all the students, random sampling was used. A total of 563 students (314 males, 249 females) between the ages of 14 and 18+ participated in the study.

Data Collection Tools Used in the Study

Personal information form. The form prepared by the researcher was used to learn about the demographic variables related to participants and included three questions about gender, age and time spent online.

Problematic internet usage scale. Problematic Internet Usage Scale was developed by Ceyhan, Ceyhan and Gürcan (2007) to identify adolescents' problematic internet use. The scale has three dimensions: "negative consequences of the internet", "social benefit/social comfort" and "excessive use". Cronbach Alpha coefficient for the whole scale was calculated as α: .95 in their research. Cronbach alpha coefficient was found to be 0.94 for this study. Items 7 and 12 in the scale were scored in reverse. The following value intervals were used during the interpretation of the data about Problematic Internet Usage Scale.

Rating	Points	Interval
Very dissatisfied	1	1.00 – 1.79
Dissatisfied	2	1.80 – 2.59
A little satisfied	3	2.60 – 3.39
Satisfied	4	3.40 – 4.19
Very satisfied	5	4.20 – 5.00

Cyber bullying scale. Cyber Bullying Scale (CBS) developed by Arıcak, Kınay and Tanrıkulu (2012) was used in this study in line with the aims. Cronbach Alpha coefficient for the whole scale was calculated as α: .95. The scale represents a single factor construct. Factor loads of the items under the single factor change between .49 and .80. These load values were regarded as rather good values for a single factor. High scores point to high levels of cyber bullying. Cronbach Alpha coefficient for the current study was found to be α: .94. The following value intervals were used during the interpretation of the data about Cyber Bullying Scale

Rating	Points	Interwal
Never	1	1.00 – 1.74
Rarely	2	1.75 – 2.50
Sometimes	3	2.51 – 3.25
Almost	4	3.26 – 4.00

Data Analysis

In the study in order to examine the demographic characteristics of the study group and to get information about their frequency and percentage frequency distribution were used. Before the analysis, to examine the distribution of normality Kolmogorov-Smirnov test and ve Q-Q plot graphics were used. To examine the correlation between Cyber Bullying Scale and Problematic Internet Usage Scale, Pearson Moments Correlation Analysis was used. Also, independent samples t-test and ANOVA were used to examine the students' attitudes towards Problematic Internet Usage and Cyber Bullying. Multiple linear regression analysis was used to examine to what extent independent variables predict the dependent variable. Level of significance was accepted as .05. SPSS 17 package program was used data analysis.

Findings

Findings section start with presenting the descriptive statistics about variables. Table 1 presents problematic internet use and cyber bullying tendency based on student views obtained by problematic internet usage scale and cyber bullying attitude scale.

Table 1. Descriptive analysis of student views on problematic internet use and cyber bullying behaviors

		N	$\bar{X}$	ss
Problematic Internet use	**Cyber bullying**	563	1.135	.313
	Excessive use	563	3.355	.876
	Social benefit/social comfort	563	3.722	.771
	Negative consequences of the internet	563	4.106	.968
	Total	563	3.850	.826

Mean of student views on cyber bullying was found to be $\bar{x}$=1.135 and the standard deviation was sd=0.313. Total average score for problematic internet use was $\bar{x}$=3.850, standard deviation was calculated as sd=0.826. According to Table 1, student views about the accuracy of the statements on the following dimensions were found to be as follows: problematic internet use ($\bar{x}$=3.850) "satisfied", excessive use sub dimension ($\bar{x}$=3.355) "a little satisfied", social benefit/social comfort ($\bar{x}$=3.722) and negative consequences of the internet sub dimensions ($\bar{x}$=4.106) "satisfied". However, cyber bullying attitudes were mostly centered on "never" option. Students' problematic internet use levels were high whereas cyber bullying attitudes were low.

Table 2. t-test results of student views on problematic internet use and cyber bullying behaviors based on gender

		Group	N	$\bar{X}$	ss	t	p
Problematic Internet use	Excessive use	Male	314	3.400	.893	1.117	.265
		Female	249	3.318	.862		
	Social benefit/social comfort	Male	314	3.887	.762	4.594	.000
		Female	249	3.591	.754		
	Negative consequences of the internet	Male	314	4.216	.996	2.415	.016
		Female	249	4.019	.937		
	Total	Male	314	3.97	.848	2.963	.003
		Female	249	3.76	.798		
Cyber Bullying		Male	314	1.170	.361	3.198	.001
		Female	249	1.09	.232		

p<.05

Table 2 shows gender as a variable that generated difference in all dimensions except excessive use. In total, Problematic Internet Use scores of male students ($\bar{x}$=3.97) were found to be higher than those of female students ($\bar{x}$=3.76). based on these findings, it can argued that male students attending vocational schools in Bolu displayed more problematic internet use behaviors compared to female students.

Table 3. t-test results of student views on problematic internet use and cyber bullying behaviors based on age

		Group	N	$\bar{X}$	ss	t	p
Problematic Internet use	Excessive use	14-16	250	3.29	.893	1.453	.147
		17-18+	313	3.40	.860		
	Social benefit/social comfort	14-16	250	3.66	.767	1.831	.068
		17-18+	313	3.78	.771		
	Negative consequences of the internet	14-16	250	4.09	.919	.233	.816
		17-18+	313	4.11	1.01		
	Total	14-16	250	3.82	.806	.940	.347
		17-18+	313	3.88	.842		
	Cyber bullying	14-16	250	1.131	.276	0.238	.812
		17-18+	313	1.137	.340		

p>.05

Table 3 displays that age variable did not generate significant differences both in problematic internet use in total, in problematic internet use sub dimensions of Excessive use [$t_{(561)}$=1.453; p>.05], Social benefit/social comfort [$t_{(561)}$=1.831; p>.05], Negative consequences of the internet use [$t_{(561)}$=0.233; p>.05] and in cyber bullying.

Table 4-1. Means and standard deviation values of the scores obtained from problematic internet use and cyber bullying scales based on time spent online

		Group	N	$\bar{X}$	ss
Problematic Internet use	Excessive use	0-3 hours	418	3.55	.798
		3-6 hours	105	2.83	.818
		More than 6 hours	40	2.66	.917
		Total	563	3.35	.876
	Social benefit/social comfort	0-3 hours	418	3.87	.666
		3-6 hours	105	3.30	.902
		More than 6 hours	40	3.32	.885
		Total	563	3.72	.771
	Negative consequences of the internet	0-3 hours	418	4.32	.787
		3-6 hours	105	3.58	1.113
		More than 6 hours	40	3.26	1.128
		Total	563	4.10	.968
	Total	0-3 hours	418	4.04	.688
		3-6 hours	105	3.36	.912
		More than 6 hours	40	3.17	1.020
		Total	563	3.85	.826

Table 4-2. ANOVA results of student views on problematic internet use based on time spent online

		Source of Variance	Sd	Sum of Squares	Mean of Squares	F	p	Difference (Tukey)
Problematic Internet use	Excessive use	Between groups	2	63.474	31.737	48.303	.000	1-2; 1-3
		In groups	560	367.937	.657			
		Total	562	431.411				
	Social benefit/social comfort	Between groups	2	34.115	17.057	31.835	.000	1-2; 1-3
		In groups	560	300.052	.536			
		Total	562	334.167				
	Negative consequences of the internet	Between groups	2	75.779	37.890	47.112	.000	1-2; 1-3
		In groups	560	450.377	.804			
		Total	562	526.156				
	Total	Between groups	2	58.881	29.440	50.798	.000	1-2; 1-3
		In groups	560	324.556	.580			
		Total	562	383.436				

p<.05 (1:0-3 hours; 2: 3-6 hours; 3:more than hours)

Results of one way analysis of (ANOVA) conducted to determine whether excessive use mean scores of participating students showed significant changes according to time spent online presented statistically significant differences between group means [$F_{(2-560)}$ =48.303; p<.05]. Results of Tukey HSD test, conducted to determine the source of difference between groups, showed differences in students' excessive use levels (students who use internet for 0-3 hours ($\bar{x}$=3.55), for 3-6 hours ($\bar{x}$=2.83) and for more than 6 hours ($\bar{x}$=2.66) (Table 4-1). Excessive use levels of students who use internet for 0-3 hours are higher than those who use internet for 3-6 hours and for more than 6 hours. Excessive use levels of students who use internet for 3-6 hours or for more than 6 hours do not statistically differ.

Results of one way analysis of (ANOVA) conducted to determine whether Social benefit/social comfort mean scores of participating students showed significant changes according to time spent online presented statistically significant differences between group means [$F_{(2-560)}$=31.835; p<.05]. In other words, social benefit/social comfort significantly differs based on time spent online. Results of Tukey HSD test, conducted to determine the source of difference between groups, showed differences in students' social benefit/social comfort levels (students who use internet for 0-3 hours ($\bar{x}$=3.87), for 3-6 hours ($\bar{x}$=3.30) and for more than 6 hours ($\bar{x}$=3.32) (Table 4-1). Social benefit/social comfort levels of students who use internet for 0-3 hours are higher than those who use internet for 3-6 hours and for more than 6 hours. Social benefit/social comfort levels of students who use internet for 3-6 hours or for more than 6 hours do not statistically differ.

Results of one way analysis of (ANOVA) conducted to determine whether negative consequences of the internet mean scores of participating students showed significant changes according to time spent online presented statistically significant differences between group means [$F_{(2-560)}$ = 47.112; p<.05]. In other words, negative consequences of the internet significantly differ based on time spent online. Results of Tukey HSD test, conducted to determine the source of difference between groups, showed differences in students' negative consequences of the internet levels (students who use internet for 0-3 hours ($\bar{x}$=4.32), for 3-6 hours ($\bar{x}$=3.58) and for more than 6 hours ($\bar{x}$=3.26) (Table 4-1). Negative consequences of the internet levels of students who use internet for 0-3 hours are higher than those who use internet for 3-6 hours and for more than 6 hours. Negative consequences of the internet levels of students who use internet for 3-6 hours or for more than 6 hours do not statistically differ.

Table 5-1. Means and standard deviation values of the scores obtained from Cyber Bullying Scale based on time spent online

Group	N	$\bar{X}$	ss
0-3 hours	418	1.09	.228
3-6 hours	105	1.24	.445
More than 6 hours	40	1.30	.499
Total	563	1.13	.313

Table 5-2. ANOVA results of student views on cyber bullying behaviors based on time spent online

Source of Variance	Sd	Sum of Squares	Mean of Squares	F	p	Difference
Between groups	2	3.099	1.550			
In groups	560	51.949	.093	16.705	.000	1-2; 1-3
Total	562	55.048				

p<.05 (1:0-3 hours; 2: 3-6 hours; 3:more than hours)

Results of one way analysis of (ANOVA) conducted to determine whether cyber bullying attitude mean scores of participating students showed significant changes according to time spent online presented statistically significant differences between group means [$F_{(2-560)}$ =16.705; p<.05]. Tukey HSD test results pointed to significant differences in cyber bullying behaviors of students who use internet for 0-3 hours ($\bar{x}$=1.09), for 3-6 hours ($\bar{x}$=1.24) and for more than 6 hours ($\bar{x}$=1.30). Cyber bullying behavior levels of students who use internet for 0-3 hours are significantly lower than those who use internet for 3-6 hours and for more than 6 hours. Cyber bullying behavior levels of students who use internet for 3-6 hours or for more than 6 hours do not statistically differ. According to these findings, it can be argued that students who spend 6 hours or more in the internet may display more cyber bullying behaviors.

Multiple linear regression analysis was undertaken to reveal the extent which time spent online and problematic interne use sub dimensions (Excessive use, Social benefit/social comfort and Negative consequences of the internet) explain cyber bullying. Results of multiple linear regression analysis are provided in Table 6.

Table 6. Multiple linear regression analysis about whether students' problematic internet use and time spent online predict cyber bullying behaviors

Predictor Variable	B	Standard Error $_B$	β	T	p
Constant	1.514	0.079	-	19.204	.000
Problematic internet use	0.119	0.016	.313	7.383	.000
Time spent online	0.059	0.022	.113	2.668	.008
R=0.371	R^2=0.138				
$F_{(2-560)}$=44.729	p=.000				

p<.05

Cyber bullying levels of vocational school students and their problematic internet use were found to be statistically significant for the multiple regression model established for time spent online [$F_{(2-560)}$ = 44.729, p=.000]. Together, problematic internet use and time spent online account for approximately 13.8% of cyber bullying level (R^2=0.138). Positive relationships were detected among problematic internet use, cyber bullying level and time spent online (β =0.313; 0.113) and these relationships were statistically significant ($t_{\text{problematic internet use}}$ =7.383, $p_{\text{problematic internet use}}$ =.000; $t_{\text{time spent online}}$ =2.668, $p_{\text{time spent online}}$ =.008).

Discussion, Result and Suggestion

T-test Results of Student Views on Problematic Internet Use and Cyber Bullying Behaviors Based on Gender

Vocational school students' problematic internet use was found to display significant differences in terms of gender in all dimensions other than excessive use. It was found that male students displayed more problematic internet use had higher cyber bullying tendencies. This may be related to the fact that male students spend more time in places such as internet cafes where cyber bullying and problematic internet use.

According to Turkish Statistical Institute (TSI-2014) data males and females were found to use internet in the following ratios respectively: 59.3% and 38.7%. Data show that males in Turkey use internet to higher extent and therefore it is natural that cyber bullying and problematic internet usage rates are in favor of males (Ceyhan, 2008; Çakır-Balta and Horzum, 2008; Çelik and Odacı, 2011; DiNicola, 2004; Döner, 2011; Gençer, 2011; Johansson and Götestam, 2004; Jung et. al., 2014; Kubey, Lavin and Barrows, 2001; Li and Chung, 2006; Morahan-Martin and Schumacher, 2000; Öztürk and Özmen, 2011; Reisoğlu, Gedik and Göktaş, 2013; Scherer, 1997; Tahiroğlu, Çelik, Uzel, Özcan and Avcı, 2008; Tekinarslan and Gürer, 2009; Tutgun, 2009; Türkoğlu, 2013; Yang and Tung, 2007) and that their views on cyber bullying behaviors (Arıcak et. al., 2008; Arıcak, 2009; Çetinkaya, 2010; Dilmaç, 2009; Erdur-Baker, 2010; Erdur-Baker and Kavşut, 2007; Eroğlu, 2011; Jung et. al., 2014; Li, 2007; Li, 2006; Özbay, 2013; Peker, Eroğlu and Ada, 2012; Slonje and Smith, 2008; Şahin, Sarı, Özer and Er, 2010; Türkoğlu, 2013; Topçu, Erdur-Baker and Aydın, 2008) are similar to the results of previous studies that take gender into consideration. However, there are findings that report no changes in problematic internet use and cyber bullying according to gender (Ceyhan, 2010; Hall and Parsons, 2001; Özdemir and Akar, 2011; Leung, 2004; Ybarra and Mitchell, 2004).

T-test Results of Student Views on Problematic Internet Use and Cyber Bullying Behaviors Based on Age

Vocational school students' views on cyber bullying and problematic internet usage were found to present no significant differences based on age. Contrary to the current study, some studies reported that cyber bullying behaviors (Kınay, 2012; Raskauskas and Stoltz, 2007) and problematic internet use (2010) present significant changes based on age. Çağır (2010) found that problematic internet use in students under 18 was significantly higher compared to students between 18 and 23 and over 23. The author reported that students under 18 who are in their teens may be using internet to a higher extent since they may be trying to "get involved in different environments, make friendships and have more people like them" (efforts associated with the characteristics of adolescence). Lack of significant relationships in the current study may be explained with the fact that students participating in the current study were under 18. Results of student views regarding problematic internet usage (Öztürk & Özmen, 2011; Morahan-Martin & Schumacher, 2000; Young, 1998) and cyber bullying behaviors (Akbulut & Erişti, 2011; Beran & Li, 2007; Çalışgan, 2013; Eroğlu, 2011; Juvonen & Gross 2008; Özdemir & Akar, 2011; Özbay, 2013; Patchin & Hinduja, 2006; Smith, Mahdavi, Carvalho & Tippett, 2006; Türkoğlu, 2013; Wolak, Mitchell & Finkelhor, 2007) based on age are consistent with the results of previous studies. Young (1998) reported that problematic internet usage can be found in all age groups. Aksaray (2011) expressed that cyber bullying is not limited to age, can extend to adulthood starting from primary school and can be observed in all age groups in varying levels. On the other hand, Öztürk and Özmen (2011) identified that age variable is not significantly related to total score of problematic internet use and "social benefit/social comfort" and "negative consequences of the internet" sub dimensions of problematic internet use but has statistically significant relationships with "excessive use" alt sub dimension.

In their study on 6th, 7th and 8th graders, Kowalski and Limber (2007) identified that 6th graders were subjected to least cyber bullying behaviors. Cyber bullying behaviors increase in line with age. The authors also reported that secondary school students and youth spend more time in social networking sites such as Facebook and Xanga where digital bullying is most frequently observed. Ybarra and Mitchell (2004) identified that young people who are 15 and older are more aggressive in internet compared to young

individuals between 10 and 14 years. Participation in cyber bullying experiences is more intense between the ages of 11 and 16, a period when digital communication tools are used extensively but it decreases with age. Cyber bullying and cyber victimization experiences reach peak levels especially in 7th and 8th grades. Cyber bullying is most frequently observed in the second period of primary education (secondary schools). Therefore, teachers employed in secondary schools, school administrators and counselors need to be trained to raise awareness about this social problem and about the possible precautions (Aksaray, 2011).

ANOVA results of student views on problematic internet use based on time spent online

Vocational students' views related to problematic internet use were found to display significant differences based on time spent online. This result is consistent with the results of previous studies. In their study, Nalwa and Anand (2003) reported that individuals who display problematic internet usage spend more time on internet. Ceyhan, Ceyhan and Gürcan (2007) identified that time spent online or excessive use of internet result in important deteriorations in critical areas such as social, academic, professional and physical health. Young (1998) reported that desire to spend more time in the internet and symptoms of withdrawal (unease, edginess, etc) with decreased usage are found to be related to internet addiction.

Ceyhan, Ceyhan and Gürcan (2007) stated that terms such as internet addiction, internet dependence, problematic internet use and cyber addiction are used to describe negative behaviors that affect the lives of individuals due to excessive amounts spent online. While some individuals use internet in line with their needs, others may face various problems in academic, work and social life due to excessive internet use (Gönül, 2002). Uncontrolled internet use has generated the concept of problematic internet use (Arısoy, 2009b). Findings from "Internet Usage and Family" research study by Kuzu et. al. (2008) undertaken within the body of General Directorate of Family and Social Research" pointed to parallel increases in children's internet use and problems experienced in communication (for instance decreasing family time, creating family conflicts, impeding face to face interactions) (Cited in: Tekinarslan & Gürer, 2009).

A study in Finland that examined the adolescents between 12 and 18 identified the daily time spent in internet as 26%. Level of addiction and consequently problematic internet use was found to be higher in daily internet user compared to individuals who do not use internet daily (Heino, Lintonen & Rimpela, 2004). Another crucial factor that increases problematic internet use is easy access to internet. Computer labs that are constantly open in many educational institutions provide easy and free access to internet. Students who are captivated by the attractiveness of internet may neglect many of their needs as a result of spending the majority of their time in internet (Niemz, Griffiths & Banyard, 2005). Yang and Tung's (2007) study determined that individuals who are connected to internet for 21.2 hours a week are addicted to internet whereas individuals who are connected to internet for 12.1 hours a week are not addicts. Positive relationships were detected between problems observed in individuals who spend lengthened time at their computers and problematic internet use.

It was found that internet addiction levels of individuals who are connected to internet for eight hours a week is much higher than those who are connected to internet less than eight hours a week. Therefore, time spent online is considered as one of the most important dangers that can lead to problematic internet use (Çakır Balta & Horzum, 2008). It is pointed that students who use internet for more than five hours a day tend to display more problematic internet use compared to students who use internet less than five hours a day (Tekinarslan & Gürer, 2009).

Problematic internet usage scores of students who use internet less than an hour a day is lower than those with 2-5 hour daily internet use. Problematic internet usage scores of students who use internet less than an hour a day is lower than those with 5 hour daily internet use. Problematic internet usage scores of students who use internet for 2-5 hours a day is lower than those with 5 hour daily internet use. These results supported the view that increases in daily internet use contributed to the increase in tendencies for problematic internet use (Türkoğlu, 2013).

It is observed that time spent online is increasing day by day with the commonness of online systems and the internet which can be used even by the cell phones carried in our pockets. If the threshold value is to

be accepted at a lower value for problematic internet use, many of the current Internet users need to be considered as problematic users. It is observed that there is a relationship between problematic internet use and time spent online. However, many researches also stated that excessive use and internet use over a certain threshold are not solely sufficient to diagnose someone with problematic internet use.

ANOVA results of student views on cyber bullying behaviors based on time spent online

Vocational students' views related to cyber bullying behaviors was found to display significant differences based on time spent online. These results are consistent with the results of previous studies (Burnukara, 2009; Hinduja & Patchin, 2008; Özbay, 2013; Özdemir & Akar, 2011; Manap, 2012; Topçu, Erdur-Baker & Çapa-Aydın, 2008; Türkoğlu, 2013). Peker and Eroğlu's (2010) study found that male students with internet access of three or more hours displayed more cyber bullying behaviors and were exposed to cyber victimization to a higher extent. Topçu's (2008) study pointed that frequent use of digital communication tools is a successful variable in predicting cyber bullying experiences.

It was found that high school students' susceptibility to cyber bullying increased when they used the Internet for less than one hour in average daily (Kınay, 2012). Among cyber bullies, students who use for 5 hours or more were found to display more cyber bullying behaviors compared to other groups (Özdemir & Akar, 2011). Erdur -Baker & Kavşut's (2007) study identified that one in every four students between ages 14 and 19 who use internet extensively and for long periods of tine displays cyber bullying behaviors. Some studies presented different results as well. Cyber bullying was found to not differentiate according to students' weekly internet use (Çalışgan, 2013).

Excessive internet users become the target of cyber bullying when they communicate with unknown persons, provide their personal information to inappropriate sites and share their personal passwords and photos with unknown individuals via networking sites. Since cyber bullying behaviors include the use of information and communication technologies, extensive and excessive use of internet are expected to increase cyber bullying and cyber victimization (Türkoğlu, 2013).

Cyber bullying, which replaced bullying by peers, is very common especially in adolescents. In order to display cyber bullying behaviors, students first need to be well-informed about the mediating issues such as information and communication technologies. This command is based on as a result of constant and excessive use of these tools. Tools used in information and communication technologies may facilitate the display of students' cyber bullying behaviors.

Multiple linear regression analysis about whether students' problematic internet use and time spent online predict cyber bullying behaviors

Current study pointed that increases in problematic internet use are parallel to increases in cyber bullying levels. Regression analysis results show that time spent online and problematic internet use sub dimensions such as excessive use, social benefit/social comfort and negative consequences of the internet explain 13,8% of cyber bullying. According to this result, time spent online is a critical factor to explain cyber bullying.

Findings obtained from the current study are consistent with the results of previous research in the literature (Erdur-Baker & Kavşut, 2007; Jung et. al., 2014; Li, 2005; Türkoğlu, 2013). It was reported that computer based communication provides the foundation for online aggressive behaviors (Douglas & McGarthy, 2001; Karaca, 2007). As a result of problematic internet use, tendency for crime increased and social value were negatively affected due to internet (Karaca, 2007). Cyber bullying behaviors were found to be associated with problematic internet use (Erdur-Baker & Kavşut, 2007; Jung et. al., 2014; Li, 2005; Türkoğlu, 2013). Ekşi and Ümmet's (2013) studies showed that increases in internet addiction generated cyber bullying behaviors defined as behaviors that harm the others in digital environments. Study also pointed that cyber bullying and internet addition among the youth has become common.

Becoming involved in risky internet behaviors was an expected outcome of cyber bullying and cyber victimization. Meeting with strangers in any of the social networking sites, sharing private information and photos with them, sharing user passwords utilized to access various virtual environments will result in their become the target of cyber bullying. Risky internet behaviors experienced by students consist of obtaining membership in groups that glorify violence and visiting websites that encourage violence. Visiting violence based web sites and obtaining membership from such web sites will increase the tendency for cyber bullying (Eroğlu, 2011).

According to the results of this study, research on adolescent students and the findings of the current study found that time spent online and problematic internet use predicted cyber bullying behaviors. It can be argued that excessive internet use by students will increase their problematic internet usage and therefore direct them to cyber bullying behaviors. It is believed that studying cyber bullying, time spent online and problematic internet use with other variables will contribute to literature.

General review of the study shows that male vocational school students who were adolescents displayed higher levels of problematic internet use and displayed tendencies for cyber bullying and students between the age of 14 and 18 also expressed these views. It was found that students who spent more than 6 hours online displayed more problem behaviors. Therefore, parents should control the time period teens spend online bad the web sites they visit. Suggestions below can be developed in line with these results:

- Vocational school students, educators and parents should be informed of problematic internet use and cyber bullying.
- Studies directed to identify students with problematic internet use levels and higher cyber bullying attitudes can be undertaken
- Group counseling, individual talks and seminars on problematic internet use and cyber bullying can be prepared for vocational school students.
- The finding that problematic internet use increased cyber bullying can be used by educators that provide vocational training. Awareness raising activities can be undertaken to have individuals understand about their levels of problematic internet use and cyber bullying.
- Parents may start to pay attention to their children's correct and effective internet use at earlier ages and can prepare a specific program for their children to manage their internet use

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