Cyber Bullying Experiences of Adolescents and Parental Awareness: Turkish Example

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ABSTRACT

Purpose: This study investigates the experiences of adolescents with cyber bullying and the awareness of their parents regarding the problem of cyber bullying.

Design and Methods: The descriptive cross-sectional research was carried out with 1129 secondary and high school adolescents and 776 parents in Turkey. Pearson Chi-Square and Mann Whitney U tests, as well as a Logistic Regression analysis, were used.

Results: A statistically significant difference was noted between cyber bullying and experiences of victimization among adolescents and the time spent on the Internet, frequency of access, access to resources, use of social media, sharing of personal information, educational background of the parents and number of children ($p < 0.05$). Accessing the Internet in Internet cafes, having daily access to the Internet and the sharing of gender on social media increased the likelihood of cyber victimization, whereas male gender, age and having parents with a high level education increased the likelihood of cyber bullying.

Conclusions: Internet use by adolescents and the use of social media were found to be high in the present study, and parents were found to be unaware of the cyber bullying and cyber-victimization experienced by adolescents. Increasing the awareness of adolescents and parents pertaining to the issues of cyber bullying and cyber-victimization, and carrying out initial studies in the field of nursing is recommended.

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Introduction

In recent years, the use of social media, mass media, digital-based social media, e-mail, instant messaging, social network sites, chat rooms, video and photograph sharing applications, and online multiplayer computer games have started to affect our lives more and more (Santrock, 2012). The desire to keep and share the information produced, to access information easily, and to take advantage of the wide-spread use of Internet technologies (Comert-Tarı & Kayıran, 2010) has turned cyber-victimization and cyber bullying on the Internet into a significant health care problem among the adolescents (Ouytsel, Walrave, & Vandebosch, 2015).Cyber bullying can be defined as "aggressive and intentional acts against those who cannot defend themselves via electronic forms of communication by a group or an individual (Smith et al., 2008; Patchin & Hinduja, 2006). Cyber bullying is more dangerous than bullying in real life, in that it can reach a wider audience. According to recent studies conducted in Turkey and worldwide, approximately 25.5–67.5% of adolescents are affected by cyber bullying (Eroglu, Aktepe, Akbaba, Isık, & Ozkorumak, 2015; Patchin & Hinduja, 2017; Safaria, Tentema, & Suyono, 2016).

Adolescents generally lack the critical capacity to question the credibility of the online content and relationships that they build online (UNICEF – The State of the World's Children: Children in a Digital World, 2017). Although cyber-victimization/bullying has been reported to be very common (Eroglu et al., 2015; O'Keeffe & Clarke-Pearson, 2011), only 20% of parents supervise Internet use among their children (Ahern, Kemppainen, & Thacker, 2016). As noted in the recent WHO report, parents need to be actively involved with protecting and supervising their children's use of the Internet. Active engagement between parents and their children enable on safe and productive use of the Internet and reduction of the negative risks (Solecki & Fay-Hiller, 2015; UNICEF, 2017).

The risks that have started to threaten adolescents depending on the use of the internet (Beran, Rinaldi, Bickham, & Rich, 2012; Kestel & Akbıyık, 2016; Kowalski & Limber, 2013; Schneider, O'Donnel, Stueve, & Coulter, 2012) ascribe new tasks and responsibilities to child health nurses as well as families (Caglar & Savaser, 2010).

Methods

Study Aim and Design

This descriptive, cross-sectional study investigated cyber bullying among adolescents aged 12–17 years old and parental awareness of

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the cyber bullying experiences of their children. The criteria for inclusion in the survey were willingness to participate in the survey and having access to the Internet for the adolescents, while for the parents, knowing how to read and write.

Participants

The study population, determined from figures sourced from the Ankara Directorate for National Education for the 2015–2016 academic year, was 450,735 students aged between 12 and 17 who were registered at the second stage of secondary school and high school during 2016–2017 education period in 16 central districts affiliated to Ankara in Turkey, and their parents (www.ankara.meb.gov.tr). Based on a sample size calculation method for a known population (Sumbuloglu & Sumbuloglu, 2013), the minimum sample size required was determined to be 1065. In order to ensure an equal representation of the population, economic income was taken as a criterion. According to Turkey Statistics Institute (TSI)'s report, The 16 central districts in Ankara were categorized into three economic income levels, being low, middle and high. One high-income level district, one medium-income level district and one low-income level district were selected randomly (Turkey Statistics Institute, 2016). To reach sampling from these determined districts, randomly chosen two secondary schools and two high schools were selected and the total number of students in the selected secondary schools and high schools was determined. After deducting the inactive and non-delivered surveys total of 353 parents, the study was carried out and completed with a sample of 1129 adolescents and 776 parents.

Data Collection

Data on the adolescents and their parents were collected between 20/12/2016 and 20/03/2017 using a data collection form for the adolescents and parents, and the Revised Cyber Bullying Inventory – RCBI-II.

Adolescent Questionnaire Form

This questionnaire consists of 15 questions about sociodemographic characteristics (age, gender, education) and use of the Internet and social media (access source to internet, access frequency, purpose of access, time spent on internet and social media, social media account use, names of social media, shared personal information, parents control status and frequency). This form and the Revised Cyber Bullying Inventory (RCBI-II) were administered to the adolescents and administered to the adolescents by the researcher through a face-to-face interview. Questionnaire form was completed in the classroom, with each form taking 30 min to complete. The data collection forms were collected from the adolescents, and later, parental data collection forms were sent to parents with sealed envelopes via their children and were then received in a sealed envelope as well.

Parental Questionnaire Form

The data collection form administered to the adolescents and administered to the parents contained a total of 22 questions aimed at garnering information on their socio-demographic status (age, gender, education attainment) their children's use of the Internet/social media (access source to internet, access frequency, purpose of access, time spent on internet and social media, social media account use, names of social media, shared personal information), and the level of control they maintain over their children's use of the Internet/social media. This form and the parent informed consent form were sent to the parents via the adolescent participants. The adolescents were asked to return the forms the next day after they had been completed by their parents. The researcher visited all of the schools the next day to collect the parental data collection forms from the adolescents.

The Revised Cyber Bullying Inventory – RCBI-II

The Cyber Bullying Inventory, whose validity and reliability analyses were carried out by Topçu and Erdur-Baker in Turkey (Topcu & Erdur-Baker, 2010), contains a total of 10 questions aimed at identifying the frequency of exposure of adolescents to bullying, and the bullying of others in a virtual environment over the last six months. The scores obtained from "I was bullied" section of the form measured the level of victimization experienced by the adolescent respondents, whereas the scores obtained from the "I bullied" section measured the level of bullying perpetrated by the adolescent respondents. The questions were answered on a self-rated four-point Likert type scale (1 = never, 2 = once, 3 = twice–three times, 4 = more than three times). The internal consistency coefficient was found to be 0.84 and 0.69 for the cyber victimization section of the scale and for the cyber bullying component, respectively. In the study, the adolescent respondents who marked the option "2 = once" from the section "I was bullied" for at least one of the items in the Revised Cyber Bullying Inventory were classified as "cyber victims", while those who marked option "2 = once" from the section "I bullied" were classified as "cyber bullies". Likewise, the adolescent respondents who marked the option "I was never bullied" from among the situations indicated in the questions were classified as "non-victims", whereas those who marked the option "I never bullied" were classified as "non-bullies" (Topcu & Erdur-Baker, 2018).

The internal consistency coefficient of the Revised Cyber Bullying Inventory II for the present study was 0.755 for the cyber victimization section (I was bullied) and 0.807 for the cyber bullying section (I bullied).

Data Analysis

Data were expressed as mean, standard deviation, median (min, max) for numerical variables, while categorical variables were expressed as number and percentage. Data were analyzed by using Pearson Chi-Square and Mann Whitney U tests. Furthermore, multiple variable logistic regression analysis was conducted using the possible factors affecting cyber victimization, cyber bullying and safe use of the Internet (variables of $p < 0.250$ in single variable analyses). The method providing the highest percentage of correct classification (prospective or retrospective) was used for the variable selection. As a result of the analyses, the odds ratio, 95% confidence interval (95% CI), Wald statistics and p-value were provided. Statistical analysis was performed using SPSS version 21.0 software (IBM Corporation, Armonk, NY, USA). A p value of <0.05 was considered statistically significant.

Ethical Consideration

Prior to the study, the necessary permissions were obtained from the author who developed the Revised Cyber Bullying Inventory-RBCI-II, and the Ankara Yildirim Beyazit University Social Sciences and Humanities Ethics Committee and Ankara National Education Directorate ethics committee both approved the study.

Results

Half (50.2%) of 1129 adolescent respondents were male with a mean age of 14.5 years, while 50.1% were continuing secondary education and 49.9% were continuing their high school education. The parents of 68.9% of the adolescents were within the scope of the study (n = 776), and of the contacted parents, 67.5% were the mothers of the adolescents (n = 524). Of these parents, 39.6% (n = 308) were primary/secondary school graduate, 36.2% (n = 282) were high school graduates and 24.1% (n = 188) were university graduates (Table 1). The parents had 1.085 ± 2.48 children on average. The respondent adolescents used the Internet for an average of 3.2 ± 2.8 h a day, while the parents reported that their children spent an average of 3.0 ± 2.6 h a day on the Internet. A correlation coefficient was used to determine the statistical difference between the number of social media accounts admitted to by the

Table 1

Socio-demographic characteristics of the adolescents and parents, their children engage cyberbullying/victimization behavior and training on the safe use of the internet.

	n	%
Socio-demographic characteristics of adolescents		
Gender		
Male	567	50.2
Female	562	49.8
Age		
12	173	15.3
13	177	15.7
14	186	16.5
15	259	22.9
16	155	13.7
17	179	15.9
School		
Secondary school	566	50.1
High School	563	49.9
Socio-demographic characteristics of parents		
Mother	524	67.5
Father	252	32.5
Marital status		
Married	731	94.2
Single	45	5.8
Educational status (n = 770)		
Literate	31	4.0
Primary school	277	35.6
High school	282	36.2
University	172	22.1
Master/doctorate	16	2.1
Profession		
Housewife	369	47.6
Worker	223	28.7
Officer	175	22.5
Retired/unemployed	9	1.2
Number of children		
1	102	13.1
2	356	45.9
3	216	27.9
4 and over	102	13.1
Your child engage cyberbullying		
Yes	5	1.2
No	403	98.8
Your child engage cyber victimization		
Yes	21	5.1
No	387	94.9
Training on the safe use of the internet		
Yes	401	51.7
No	374	48.3

Table 2

Responses of adolescents and parents related to the Internet, social media use, the sharing of personal information and control of use.

Features	Adolescent (n = 1129)		Parent (n = 776)	
Sources of access to the internet[a]	n	%	n	%
Smart phone	1019	90.3	708	91.1
Computer	749	66.3	532	68.5
Tablet	437	38.7	263	33.8
Internet café	89	7.9	46	5.9
Purpose of internet use[a]				
To do homework	860	76.2	656	84.9
Listen to music	765	67.8	497	64.1
To chat	751	66.5	484	62.4
Research	684	60.6	516	66.5
Watching movie	652	57.8	429	55.3
To play a game	620	54.9	453	58.4
Sharing in social forums	589	52.2	425	54.8
Shopping	229	20.3	95	12.2
Send/receive e-mail	141	12.5	84	10.8
Social media account use				
Yes	1005	89.0	617	79.5
No	124	11.0	159	18.5
Social media accounts used[a]				
Facebook	780	77.6	459	74.5
Instagram	725	72.1	275	44.6
WhatsApp	502	50.0	127	20.6
Snapchat	372	37.0	52	8.4
Twitter	328	32.6	34	5.5
YouTube	209	20.8	19	3.1
Messenger	54	5.4	–	–
Tumblr	38	3.8	–	–
Steam	19	1.9	–	–
Scorp	18	1.8	–	–
Swarm	17	1.7	–	–
Shared personal information[a]				
Real name	828	73.4	491	79.7
Gender	622	55.1	394	64.0
Age	462	41.0	309	50.2
Address/phone	40	3.5	20	3.2
Do not share any information	279	24.7	117	19.0
Control of usage				
Yes	464	41.1	425	54.8
No	665	58.9	351	45.2
Usage control frequency				
Sometimes	241	51.9	240	56.5
Everyday	117	25.2	96	22.5
As long as you share	106	22.9	89	21.0

[a] The question has been answered more than once. Percentages are calculated over the numbers of n.

adolescent respondents, and the number of social media accounts the parents said their children were using (Icc; 0.178, p < 0.001).

The adolescent respondents and their parents stated that they mostly used the Internet for homework, and mainly via smart phones. Among the adolescents, 89.0% (n = 1005) had social media accounts, with Facebook and Instagram being the most popular. Of the adolescents with social media accounts, 73.4% (n = 828) used their real names and 55.1% (n = 622) of them shared their gender on the Internet/through their social media accounts. According to the adolescent respondents, 51.9% (n = 241) of their parents had some control over their use of the Internet. Among the parents, 79.5% (n = 617) were aware that their children had social media accounts, and that their children used Facebook and Instagram the most. Among the parents, 79.9% (n = 491) indicated that their children used their real names on the Internet, and 64.0% (n = 394) indicated that their children shared their gender through these accounts. Furthermore, 54.8% (n = 425) of the parents controlled their children's use of the Internet, while 56.5% (n = 240) said they "sometimes" controlled their children's activity on the Internet (Table 2).

Of the adolescents 739 (65.5%) were cyber victims, while 639 (56.6%) were cyber bullies, based on the Revised Cyber Bullying Inventory – RCBI-II. Of the 739 students, 76.9% (n = 568) were identified as

both cyber victims and cyber bullies (Table 3). The mean age of the adolescents who were cyber victims was 14.63 ± 1.635, whereas the mean age of the adolescents who were cyber bullies was 14.74 ± 1.611. Among the parents, 98.8% (n = 403) said that their children did not engage in cyber bullying, and 94.9% (n = 387) said that their children had not been victims of cyber bullying (Table 1). The likelihood of the adolescents becoming cyber bullies (58.1%) was higher in the

Table 3

Comparison of cyber victimization, cyber bullying and the Revised Cyber Bullying Inventory II results.

Revised Cyber Bullying Inventory II – (RCBI-II)								
Cyber victimization	Cyber bullying				Total		Analysis[*],[a]	
	Non-cyberbully		Cyber bully					
	N	%	n	%	N	%	χ^2	P
Non-cyber victim	318	81.7	71	18.3	389	34.5	356.47	<0.001
Cyber victim	171	23.1	568	76.9	739	65.5		
Total	489	43.4	639	56.6	1128	100.0		

[*] Statistical significance p < 0,05.
[a] Pearson Chi-square test. Row percentages are given.

high income-level districts, whereas the likelihood of adolescents becoming cyber victims (66.4%) was higher in low-income level districts. However, no statistically significant relationship was identified between cyber victimization and cyber bullying in terms of area or district (p > 0.05) (Table 4).

There was no statistically significant difference between gender and cyber victimization or bullying figures (p > 0.05), but a statistically significant difference was noted between the ages of the adolescents. Furthermore, a statistically significant difference was identified between cyber victimization and cyber bullying in terms of frequency of access to the internet, access from smart phones and internet cafes, the use of any kind of social media account, the types of social media accounts used and the sharing of personal information (p < 0.05) (Table 4).

Based on the multiple variable analysis carried out on the factors presumed to affect the cyber victimization experiences of adolescents, the use of Internet cafes to access the Internet, the use of Snapchat

and Tumblr social media accounts, the frequency of access to the Internet, and the sharing of one's gender on the Internet/social media had a significant impact on the level of cyber victimization experienced (p < 0.05, Table 4). Accordingly, when the other factors in the model were kept constant, students who accessed the Internet through Internet cafes were 1.81 times more likely to be victims of cyber bullying than those who did not, while students who accessed the Internet every day were 1.55 times more likely to be victims of cyber bullying than those who accessed the Internet once a month. Adolescents who shared their gender on the Internet/social media were 2.04 times more likely to be victims of cyber bullying than those who did not (Table 5).

As a result of the multiple variable analysis carried out based on the factors considered to have an effect on the cyber bullying experiences of adolescents, the effects of gender, age, access to the internet using computers, use of social media (such as Instagram, Snapchat and Steam), and sharing one's gender on the Internet/social media were identified as significant (p < 0.05, Table 5). The risk of cyber bullying increased 1.11 times as the age increased by one unit, and cyber bullying was 1.43 times more common in males than in females (Table 5). Cyber victimization was found to be 1.60 times more frequent among children whose mothers were primary school graduates than children whose mothers were high school graduates. It was also determined that cyber bullying was 1.89 times more frequent among children whose mothers were university graduates than those whose mothers were high school graduates (Table 6).

The educational background of the fathers and the number of children in the family affected the cyber bullying experiences of adolescents. The children of fathers with a high school education experienced cyber bullying 2.10 times more than those whose fathers had only a primary school education. It was found that the children of fathers who had two children experienced cyber bullying 2.58 times more often than those of fathers with the same educational background who had a single child (Table 6). Over a third (35.6%) of the parents indicated that they trained their children regarding the safe use of the

Table 4
Comparison of age, gender, internet, social media usage, economic income levels and the Revised Cyber Bullying Inventory results.

Features	Revised Cyber Bullying Inventory – RCBI-II							
	Cyber victimization (n = 739)		Analysis[*]		Cyber bullying (n = 639)		Analysis[**]	
	n	%	χ^2	p[*]	n	%	χ^2	p[*]
Gender								
Male	383	67.5	2.088	0.148	337	59.4	3.605	0.058
Female	356	63.5			302	53.8		
Age								
12–14	329	44.5	14.016	0.016	266	41.6	30.029	<0.001
15–17	410	55.5			373	58.4		
Sources of access to the internet[a]								
Smart phone	679	66.7	6.491	0.011	587	57.7	4.363	0.037
Computer	504	67.4	3.420	0.064	447	59.8	8.747	0.003
Tablet	294	67.3	0.981	0.322	252	57.7	0.300	0.584
Internet café	69	77.5	6.173	0.013	62	69.7	6.664	0.010
Access frequency								
Everyday	593	70.0	30.878	<0.001	511	60.3	18.766	<0.001
Two days per week	55	54.5			46	45.5		
Monthly/need	91	50.6			82	45.6		
Social media account availability								
Yes	697	69.4	61.742	<0.001	598	59.69	31.554	<0.001
No	42	33.9			41	33.1		
Social media accounts used[a]								
Facebook	546	70.1	0.730	0.393	458	76.6	0.852	0.356
WhatsApp	359	71.7	2.352	0.125	319	63.7	7.016	0.008
Instagram	524	72.4	10.667	0.001	464	64.1	22.086	<0.001
Snapchat	284	76.5	14.083	<0.001	257	69.3	23.037	<0.001
Twitter	250	76.5	11.291	0.001	212	64.8	5.592	0.018
YouTube	152	73.1	1.651	0.199	129	62.0	0.658	0.417
Messenger	29	53.7	6.642	0.010	26	48.1	3.087	0.079
Tumblr	33	86.8	5.646	0.017	29	76.3	4.603	0.032
Steam	16	84.2	1.995	0.158	17	89.5	7.194	0.007
Scorp	15	83.3	1.671	0.196	15	83.3	4.300	0.038
Swarm	14	82.4	1.362	0.243	13	76.5	2.053	0.152
Information shared on the internet/social media[a]								
Real name	590	71.3	47.178	<0.001	509	61.5	29.748	<0.001
Age	352	76.2	39.711	<0.001	308	66.7	31.684	<0.001
Gender	470	75.7	63.676	<0.001	413	66.5	54.177	<0.001
Address/Phone	33	82.5	5.313	0.021	20	70.0	2.988	0.084
Economic income levels district[**]								
High-income	351	65.7	0.244	0.885	310	58.1	0.879	0.644
Medium-income	222	64.5			189	54.9		
Low-income	166	66.4			140	56.0		

[a] The question has been answered more than once. Percentages are calculated over the numbers of n.
[*] Statistical significance p < 0,05.
[**] Pearson Chi-square test. Row percentages are given.

Table 5
Attributes affecting cyber bullying/victimization experiences.

Features	Odds Ratio	95% CI for EXP (B)		Wald Test Statistics[a]	p
		Lower	Upper		
Features that affect cyber victim experiences					
Sources of access to the internet					
Internet café	1.811	1.019	3.218	4.093	0.043
Access frequency				4.828	0.089
Every day/month	1.556	1.046	2.314	4.752	0.029
Every two days/once a month	1.342	0.745	2.418	0.959	0.328
Social media accounts used[a]					
Snapchat	1.388	1.023	1.884	4.426	0.035
Tumblr	2.143	0.805	5.703	2.330	0.127
Information shared on the internet/social media[a]					
Gender	2.045	1.543	2.710	24.832	<0.001
Constant	0.876			0.434	0.510
Features that affect the cyber bullying experiences					
Gender (Male/Female)	1.431	1.093	1.871	6.877	0.009
Age	1.113	1.023	1.211	6.168	0.013
Access sources					
Computer	1.283	0.960	1.696	2.818	0.093
Social media accounts used[a]					
Instagram	1.453	1.059	1.991	5.377	0.020
Snapchat	1.495	1.104	2.026	6.746	0.009
Steam	5.500	1.211	24.983	4.874	0.027
Information shared on the internet/social media[a]					
Gender	1.763	1.341	2.317	16.531	<0.001
Constant	0.102	–	–	13.251	<0.001

[a] Logistic regression analysis.

Table 6
Parental characteristics affecting cyber bullying/victimization experiences of adolescents.

Parent	Features	Odds ratio	95% CI for EXP(B)		Wald Test Statistics[a]	p
			Lower	Upper		
Mother	Features that affect the cyber victims' experiences					
	Education status				5.793	0.055
	Undergraduate/Graduate	1.413	0.851	2.346	1.790	0.181
	Primary/Secondary	1.946	1.067	3.549	4.721	0.030
	Constant	1.606			19.620	<0.001
	Features that affect the cyber bullying experiences					
	Education status				8.221	0.016
	Undergraduate/Graduate	1.890	1.155	3.092	6.414	0.011
	Primary/Secondary	1.605	0.938	2.747	2.976	0.085
	Constant	1.022			0.043	0.835
Father	Features that affect the cyber victims' experiences					
	Number of children				10.539	0.014
	1 child/4 and more children	1.769	0.712	4.396	1.510	0.219
	2 children/4 children	3.168	1.525	6.582	9.557	0.002
	3 children/4 children	1.582	0.734	3.412	1.368	0.242
	Constant	0.913			0.091	0.763
	Features that affect cyber bullying experiences					
	Number of children				7.085	0.069
	2 children/1 child	2.584	1.162	5.747	5.421	0.020
	3 children/1 child	3.102	1.293	7.440	6.430	0.011
	4 and over child/1 child	2.199	0.846	5.721	2.611	0.106
	Education status				5.540	0.063
	High School/Primary	2.105	1.102	4.021	5.078	0.024
	Undergraduate-Graduate/Primary	1.880	0.959	3.685	3.380	0.066
	Constant	0.334			6.063	0.014

[a] Logistic regression.

Internet, and 51.7% (n = 401) said that they informed their children regarding the risky behaviors that could be encountered on the Internet (Table 1). Multiple variable analysis revealed that only the number of children had statistically significant effect on training regarding the safe use of the Internet. In this respect, parents with only one child were 2.30 times more likely to educate their children on the safe use of the Internet than those with four or more children.

Discussion

This research was carried out to investigate the exposure of adolescents to cyberbullying and their parents' use of the Internet to monitor their children's awareness of bullying/victimization. In our study, both adolescents and their parents listed similar reasons for the Internet use. Doing homework, listening to music, chatting and research were listed as the most common uses of the Internet (Table 2). Although the rates show little variation, parents are aware of the resources used by their children for accessing the Internet and the purpose of using the Internet. Of the respondent adolescents in the study, 65.5% were cyber victims and 56.6% were cyber bullies. In a similar study carried out by Kowalski and Fedina (2011), parents were found to be usually unaware of their children's cyber victimization (94.6%) and cyber bullying (98.8%) experiences.

The respondent adolescents use the Internet for an average of 3.2 ± 2.8 h a day, while their parents claim that their children spend an average 3.0 ± 2.6 h on the Internet every day. The hours of Internet used stated in the present study are higher than in previous studies (Cassidy-Bushrow, Johnson, Peters, Burmeister, & Joseph, 2015; Yoo, Cho, & Cha, 2014), and parents are aware of the time that their children spend on the Internet. The frequency of access to the Internet by adolescents is a statistically significant predictor of cyber victimization and cyber bullying. Access to the Internet by adolescents on a daily basis can be an important factor in turning them into cyber bullies and cyber victims (Table 4). Those who used the Internet on a daily basis are 1.5 times more likely to become cyber victims than those who use it once a month (Table 5). Increasing the frequency of access to the Internet increases the bullying experience.

Similarly, in a study by Sakellariou and Carroll (2012), smart phones have been reported to be one of the major sources used by adolescents to access the Internet. Parents reported a level of Internet access by using smart phones at a slightly higher level than the one reported by the children themselves (Table 2). Access to the Internet via smart phones influences the cyber victimization and cyber bullying experiences of adolescents (Table 4). The fact that young people are gaining easy access to the Internet via smart phones at a much younger age may affect the cyber victimization and cyber bullying experiences of adolescents. Through cell phones, cyber bullies can easily contact their victim, hiding their identity while sharing derogatory, mocking, offensive, inflammatory and insulting messages through the digital media (Civilidag, 2013).

In the present study, the use of internet cafes for accessing the internet was found to be higher than reported in the study of Makri-Botsari and Karagianni (2014) (Table 2). While Sengupta and Chaudhuri (2011) reported that access to the Internet without the supervision of the family only increases cyber victimization (Sengupta & Chaudhuri, 2011), the present study indicated that access to the Internet from Internet cafes affects the cyber victimization and cyber bullying experiences of adolescents (Table 4), and almost doubles the likelihood of cyber victimization (Table 5). The present study found that providing access to the Internet outside family control affects the cyber bullying and victimization experiences of children.

There have been similar studies showing that a low socio-economic level increases the likelihood of cyber victimization (Hasebrink, Livingstone, Haddon, & Ólafsson, 2009) and cyber bullying (Ozer & Cemaloglu, 2016). Even though socio-economic level has no significant influence in the present study (p > 0.05), the cyber victimization experiences of adolescents are found to be higher in the less-developed regions, and that the cyber bullying experiences of adolescents are higher in the regions with a higher development income (Table 4).

Both gender and age can affect cyber bullying and cyber victimization experiences (Kowalski & Limber, 2007; Ybarra & Mitchell, 2004). In the present study, it was observed that cyber bullying increases with age (Table 5). The results of different studies are similar to our results. (Ciminli & Kagan, 2016; Semerci, 2017; Ybarra & Mitchell, 2004). In the literature, there is a number of studies indicating that males are more likely to be cyber bullies than females (Bauman, 2013; Karabacaka et al.,

2015; Yaman & Sonmez, 2015), while females are more likely to be cyber victims (Bauman, 2013; Korkmaz, 2016; Ouytsel et al., 2015; Williams & Guerra, 2007). In the present study, based on the result of the Pearson Chi-square analysis, no statistically significant relationship was identified between gender and cyber victimization or bullying ($p > 0.05$) (Table 4). That said, male adolescents are more likely to engage in cyber bullying than female adolescents. Cyber bullying is 2.04 times more common among men, and increases 1.11 times more as age increases by one unit (Table 5). It has been reported that in Turkish society, boys are more often left to their own devices than girls in terms of Internet usage (Unver & Koc, 2017), which can be attributed to the fact that boys in our country are given more freedom when growing up than girls, resulting in a higher exposure to cyberbullying.

Among the respondent adolescents, 89.0% had at least one social media account, and while they use Facebook (77.6%) and Instagram (72.1%) the most, they also have other social media accounts (Table 1). Those who use social media are more likely to become cyber victims and cyber bullies, and a statistically significant difference was noted between the use of social media accounts and cyber bullying and victimization ($p < 0.05$) (Table 4). Social media was shown to affect the cyber victimization experiences of adolescents aged between 12 and 17, during which the rates of becoming a cyber victim and a cyber bully increase (Cao & Lin, 2015; Kowalski & Limber, 2007). Kowalski and Fedina (2011) reported that 60% of adolescents who use social media are cyber victims (Kowalski & Fedina, 2011). In the present study, those who use Tumblr and Snapchat were found to become victims more frequently than those who did not use them. The cyber bullying rates of adolescents who use Snapchat and Instagram were found to be higher as well (Table 5).

The parents reported that their children use social media accounts, particularly Facebook and Instagram, at a higher rate (97.5%) than their children indicated, although the rates of social media usage among adolescents stated by the parents tended to be lower than the rates reported by the adolescents themselves (Icc: 0.178, $p < 0.001$). Parents may be unaware that their child is using social media accounts, such as Messenger, Tumblr, Stream, Scorp and Swarm (Table 2). The use of Steam social media accounts, which few parents are aware of, increases cyber bullying rates among adolescents 5.5 times (Table 5). It is thought that children have been able to increase their cyber victimization experiences as their parents are unaware of all the social media accounts held by their children.

Adolescents share personal information, including their real name, gender and age, on the Internet/social media accounts, and their parents are aware of this (Table 2), although a significant relationship exists between the sharing of personal information and cyber victimization/bullying ($p < 0.05$) (Table 4). Sharing one's gender is an important factor in increasing cyber bullying experiences (Table 5). Sengupta and Chaudhuri (2011) have reported that sharing personal information such as school, telephone number and instant message ID increases exposure to cyber bullying (Sengupta & Chaudhuri, 2011). The fact that parents know that their children share their personal information on social media, as a platform that is open to everyone, has been found to be significant. Parents may be unaware of the possible personal security threats, and so potential for the cyber victimization and bullying of their children increases.

It is reported that 59.9% of parents educate their children about the safe use of the Internet (Kasıkcı, Cagıltay, Karakus, Kursun, & Ogan, 2014), and that parental supervision of Internet use reduces the online risks that their children may encounter (Cenkseven-Onder & Sarı, 2012; Lee & Chae, 2012). In the present study, 51.7% of the parents educated their children on the potential risks of the Internet, with a lower number of children affecting likelihood of such training being given. Parents with only one child are 2.30 times more likely to educate their child on the safe use of the Internet than those with four children or more.

The educational level of parents and the number of children affect the cyber victimization and cyber bullying experiences of adolescents.

That said, according to the results of the present study, the higher the level of education of the parents, the more likely the adolescent is to engage in cyber bullying (Table 6). Contrary to our results, the lower the level of education of the parents, the more likely the child is to engage in cyber bullying behaviors (Akbaba & Eroğlu, 2013; Låftman, Modin, & Östberg, 2013).

The number of children in a family is also influential in the level of cyber bullying and cyber victimization experienced by children. The lower the number of children increases the likelihood of cyber victimization, while the higher the number of children increases the likelihood of cyber bullying among adolescents (Table 6). The children in a family with two children are 3.16 times more likely to be victims of cyber bullying than those of in a family with four or more children. The children in a family with two children are 2.58 times more likely to be cyber bullies than those in a family with one child.

Conclusions

The usage rate of the Internet and social media among adolescents is high, while the level of education given by the parents on the safe use of the Internet is low, and parents are highly unlikely to be aware of the cyber victimization and cyber bullying experiences of their children. The means of access to the Internet, the use of social media, the open sharing of personal information and the educational background of the parents all affect the level of cyber victimization and cyber bullying experienced by adolescents. Adolescents should be educated about the safe use of the Internet, and parents should be made aware of the risks associated with cyberbullying. Pediatric nurses play a role in protecting children's health, and so it is important that they remain aware of the nature of this new virtual environment. However, the studies that nurses have done in our country are limited. Accordingly, different studies should be carried out to determine the nature of the risks associated with the Internet. It is hoped that this study will draw attention to the importance of providing health services in schools, as such implementations in our country are currently limited. Cyberbullying incidences can be reduced by increasing the number of studies on this issue, improving the provision of health services in schools in Turkey, and promoting the participation of nurses in this issue.

Disclosures

The authors declare no conflicts of interest.

CRediT authorship contribution statement

Dilek Uludasdemir: Conceptualization, Methodology, Software, Data curation, Writing - original draft, Visualization, Investigation, Writing - review & editing. **Sibel Kucuk:** Supervision, Conceptualization, Methodology, Writing - review & editing.

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