Cyberbullying Tendencies of High School Students

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ABSTRACT The rapid developments in technology have affected human life in many ways. While technology makes life easier, it has been producing new concepts, which are just alternative ways of demonstrating violence, conflict and bullying. With individuals or groups starting to use information and communication technologies for the purpose of doing harm, the term cyberbullying has been introduced. One of the most effective ways of coping with cyberbullying is to raise awareness among individuals. Cyberbullying includes crimes such as harassment, humiliation, intimidation of a child or adolescent by another person using the Internet and mobile technologies. The aim of this study is to assess the cyberbullying tendencies of high school students. High school students make up the population of the study. The study sample comprises 300 high school students in the City of Edirne.

INTRODUCTION

Since the beginning of 1990s, in spite of the time varying definitions, anthropologists have been emphasizing on the emergence of new communication technologies, thus inviting scientists to start new research in this field. As integrative approaches are favored in large-scale periods of change, the role of anthropology in researching new technologies is unarguably vital. Moreover, anthropology is definitely suitable for the socio-culturally established online communications research within a constantly and rapidly changing environment.

Modern anthropology has a totally different definition by space and time and forms a new phenomenon of multimedia anthropology, which is called cyber-anthropology or cyber-culture anthropology. It is a branch of social anthropology, which focuses on the relationship between humankind and computer technologies and the cybernetic systems.

Cyber-anthropology, which is a subdivision of social anthropology, focuses on cyber technologies and its formations in society and culture, the way they are applied and its effects. Cyberbullying tendencies, thus, is among the hot topics debated recently. In this regard, the key elements that form the components of research are discussed below.

Right along with the advantages of the Internet, there are also problems arising from Internet use. As with any technological device, Internet use brings out problematic behaviors besides its benefits (Ceyhan 2010). The deprecating relationships between young people sometimes show themselves in the form of cyberbullying, which is often regarded as a form of bullying (Pamuk and Bavli 2013). Cyberbullying behaviors and exposure to cyberbullying have been examined in a number studies (Karakurt 2014; Cicioglu 2014; Wong et al. 2014). Cyberbullying, which anyone can be exposed to anywhere and anytime, can emerge in different forms (Law et al. 2012).

Cyberbullying behaviors can be defined as bullying related to the Internet and telephone use (Vandebosch and Cleemput 2008). It also includes actions such as reading others' e-mails without permission, using others' passwords, sending embarrassing messages and taking photos of the victim and spreading them without his/her consent (Erdur-Baker and Kavsut 2007). Obtaining, using, publishing and sharing personal information on virtual platforms without the consent of the owner by using electronic devices are some of the examples of cyberbullying (Camp-

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bell 2007; Juvonen and Gross 2008; Civilidag and Cooper 2013; Peker 2013). On the other hand, cyberbullying, in the most general sense, can be defined as any action that aims to harm an individual or corporate body by using information and communication technologies (Aricak 2011). The main difference between cyberbullying and bullying in general is the use of information and communication technologies, which allows virtual communication, such as the Internet and cell phones (Aricak 2009). Studies on the growing problem of cyberbullying have revealed that male students are more likely to be cyberbullies compared to female students (Ozbay 2013). Cyberbullying is a relatively new field of study, dating back to the year 2000 only (Dolek 2002; Piskin 2002). The spread of bullying in virtual environments with the developments in technology and the Internet has led to the emergence of cyberbullying as a field of study. Although those kinds of behaviors are often referred to as cyberbullying, there are other terms coined to describe this practice (Hinduja and Patchin 2014). Some of the reasons that students continue to be cyberbullies are to feel good, to have a good time, and to build better social relationships (Yaman and Peker 2012). Adolescents tend to seek attention, affection and sympathy by being cyberbullies (Eksi 2012). The research shows that being popular among friends, being accepted by a group, achieving the success they lack at school in virtual social relationships and having fun are the biggest reasons for being a cyberbully (Eroglu 2011; Ucanok et al. 2011). Consequently, cyberbullying is not only an online security problem but also a threat to social relationships (Aricak et al. 2008). The comparison of psychopathological symptoms in adolescents (Jung et al. 2014), depressive symptoms and drug use (Gamez et al. 2013), social anxiety levels in individuals (Akca et al. 2015) and loneliness levels (Ubertini 2010) are some of the subjects that are probed in many studies, which focuses on the relationship between problematic Internet use and cyberbullying.

Research also indicates that one of the reasons for being a cyberbully is friendships breaking up. It is especially the case that young people who have emotional affairs tend to cyberbully to take revenge after the separation. On the other hand, some young people can be said to cyberbully due to jealousy, while others do it because of prejudices they have against differ-

ent sub-identities (Ozdemir and Akar 2011). College students' cyberbullying experience on social network sites (Gahagan et al. 2016) and the perception of cyberbullying phenomena are also examined (Francisco et al. 2015).

Aim of the Study and the Research Model

The aim of this study is to examine the cyberbullying levels of high school students in relation to distinctive variables. The prevalence of cyberbullying among students and its relation to certain variables are discussed. In line with this purpose, the researchers tried to determine whether or not the cyber bullying tendencies of adolescents differ in terms of certain demographic variables. In addition, some suggestions for the prevention and intervention with regard to cyberbullying behavior problems are discussed, based on the findings of the study.

For the purpose of the study, a relational screening model was utilized. Relational screening models aim to determine the existence of change and/or the level of change between two or more variables. While relational screening models do not give a cause and effect relationship, they make the prediction of one variable if the other variable is known (Karasar 2006). Within the scope of this model, the relationship between the students' opinions of cyberbullying was examined.

METHODOLOGY

Sample and Assessment Instruments

High school students in Edirne Province, Kesan District, make up the population of the study. The study sample includes a total of 300 students. The number of the individuals in the study group in terms of sample size was at least five times the number of items recommended for the use of factor analysis (Child 2006; Tavsancil 2014). The research data was collected in 2015.

The "Cyberbullying Scale", which was developed by Aricak et al. (2012) was used for the study. The construct validity of the scale was examined using factor analysis. Exploratory factor analysis aims to explore the nature of factors that are measured with the measurement instrument instead of testing a certain hypothesis when the researcher does not know the number of the factors that the instrument measures (Tavsancil 2014).

The scale has a total of 24 Likert type items. The scale includes positive and negative statements that are answered as "Never", "Sometimes", "Often" and "Always". The maximum score that can be obtained is 89, while the minimum score is 24.

Data Analysis

A Likert type scale, developed by Rennis Likert, requires respondents to indicate the degree to which they agree or disagree with the statements presented (Altunisik et al. 2004). The data analysis was done using SPSS 20 software. Frequency distribution was done for the demographic information collected from the 300 students who participated in the study. Then, factor analysis was done for the scale data. The factor weight was assumed to be 0.40 and none of the questions were excluded from the scale. The factor analysis results revealed four sub-dimensions. Then, reliability analysis was done for the sub-dimensions that were identified. A Cronbach's Alpha value was found to be 0.922, which was considered to be almost perfect.

FINDINGS

Descriptive statistics for the total scores of the items are presented in Table 1. These values show that the data to be analyzed fits the normal distribution. The structural validity of "Understanding the Cyberbullying Tendencies of High School Students" was checked with exploratory factor analysis and total item correlations. Principal components analysis was used for the data

Table 1: Normal distribution of the data analysis results

Statistics		
N	Valid	300
	Missing	0
Mean		35.7700
Std. Error of Mean		.58758
Median		32.0000
Mode		30.00
Std. Deviation		10.17721
Variance		103.576
Skewness		2.206
Std. Error of Skewness		.141
Kurtosis		5.305
Std. Error of Kurtosis		.281
Range		65.00
Minimum		24.00
Maximum		89.00

analysis. The total score for each student ranges from 24 to 89. According to the results, the range is 65. The calculations show that the mean of the scale was 35.7700, the median was 32 and the standard deviation was 10.17721. The analyses show that the skewness was 2.206 and the kurtosis was 5.305. The results of the data gathered show that the distribution is normal. All of the results are shown in detail in Table 1. Thus, while interpreting the scale, it can be said that higher scores seem to indicate that students have more positive attitudes.

Before the factor analysis, the Kaiser-Meyer-Olkin (KMO) and Bartlett's test for sphericity results should be obtained. A certain amount of correlation between the variables is also required for the purposes of factor analysis (Sencan 2005). Bartlett's test of sphericity shows whether or not the relationship between the variables is adequate. If the p-value of the Barlett test is under the 0.05 significance level, it means that the relationship between the variables is sufficient for factor analysis.

Factor and Reliability Analysis

Factor analysis was applied to the data of the scale used in the study after determining whether or not the data set was fit for factor analysis using KMO and Barlett's test. The Kaiser-Meyer-Olkin (KMO) test result was 0.937, which shows that factor analysis was applicable to the data set. As the p-value for Barlett's test was $p<0.05$, the relationship between the variables was sufficient to undertake factor analysis.

It is safe to say that the scale would have four dimensions, which is four factors, by looking at Table 2. The first one is "abuse of technology" with eight items, the second is "unethical behavior of technology" with seven items, the third one is "disturbing behavior of technology" with five items, and the fourth one is the "spoofing of technology" with four items. The four factors presented in the table explain (54.582%) of the variance.

As seen in Table 3, the sub-dimensions of the scale show the normal distribution as $p<0.05$. Thus, the application of parametric tests was appropriate.

Testing the Differences in the Cyberbullying Scale Sub-dimensions by Gender

The t-test was used in order to identify the differences by gender of the participants. The

Table 2: Factor results for the cyberbullying scale

Factors	Item	Factor weight	Factor explanation rate	Cronbach's alpha
Factor 1	Item-14	.575	18.728	.888
	Item-15	.747		
	Item-16	.733		
	Item-18	.599		
	Item-19	.491		
	Item-20	.699		
	Item-22	.623		
	Item-23	.738		
Factor 2	Item-5	.409	13.743	.799
	Item-6	.483		
	Item-7	.780		
	Item-8	.714		
	Item-9	.617		
	Item-17	.488		
	Item-24	.516		
Factor 3	Item-10	.533	13.285	.781
	Item-11	.645		
	Item-12	.636		
	Item-13	.643		
	Item-21	.705		
Factor 4	Item-1	.406	8.826	.602
	Item-2	.719		
	Item-3	.716		
	Item-4	.584		

Levene test was utilized to measure the equalization of the group variances.

Table 4: t-test results by gender

	Levene's Test Sig.	t-test Sig.	Mean difference	Std. error difference
Factor-1	.904	.296	-.06973	.06660
Factor-2	.345	.571	-.03487	.06141
Factor-3	.019	.047	-.09585	.04798
Factor-4	.254	.119	-.06883	.04402

As seen in Table 4, according to the t-test results, there is a meaningful difference between the judgments related to the factor 3 sub-dimensions.

Testing the Differences in Sub-dimensions of the Scale using Other Demographic Information

An Anova difference test was utilized to determine whether or not the sub-dimensions of the scale differ in terms of the demographic information obtained from the participants. The factors that gives $p < 0.05$ in the Test of Homogeneity of Variances do not fulfill the precondition of the Anova test. The Welch test was applied to those factors. The factors to which the Welch and the Anova tests were applied revealed meaningful differences if $p < 0.05$. All of the difference tests are presented in the Table 5.

Table 3: Kolmogorov-Smirnov normal distribution test results (test of normality)

	Factor 1	Factor 2	Factor 3	Factor 4
Kolmogorov-Smirnov Z	.211	.181	.265	.261
Asymp. Sig. (2-tailed)	.000	.000	.000	.000

Table 5: Anova and Welch difference test results

		F	Levene Sig.	Sig.
Testing the Differences by Age	Factor-1	7.151	.105	.001
	Factor-2	5.555	.001	.004
	Factor-3	8.932	.066	.000
	Factor-4	2.348	.000	.097
Testing the Differences by Grade	Factor-1	18.121	.000	.000
	Factor-2	15.828	.000	.000
	Factor-3	16.068	.000	.000
	Factor-4	5.632	.000	.008
Testing the Differences by the Number of Years the Participants Have Been Using the Internet	Factor-1	3.271	.608	.022
	Factor-2	.904	.077	.440
	Factor-3	.995	.492	.395
	Factor-4	.652	.022	.764
Testing the Differences by the Daily Internet Use of the Participants	Factor-1	3.241	.000	.003
	Factor-2	2.722	.002	.031
	Factor-3	2.664	.005	.013
	Factor-4	1.500	.044	.211
Testing the Differences by the Place Where the Participants Connect to the Internet	Factor-1	.965	.600	.409
	Factor-2	.580	.783	.629
	Factor-3	2.640	.356	.050
	Factor-4	3.548	.078	.015

Testing the Differences in Cyberbullying Scale Sub-dimensions by Age

An Anova test was used in order to identify differences by age. As the result, for factor 2 and factor 4 were p<0.05 in the Test of Homogeneity of Variances, the requirement for Anova was not met. The Welch test was applied for factors 2 and 4. When looking at Table 5, as p<0.05, there is a significant difference for factors 1, 2 and 3.

Testing the Differences in Cyberbullying Scale Sub-dimensions by Grade

An Anova test was used in order to identify the differences by grade. According to the Levene test results, all of the factors were found suitable for the Welch test. When looking at Table 5, as p<0.05, there is a significant difference for all factors.

Testing the Differences in Cyberbullying Scale Sub-dimensions by the Number of the Years the Participants Have Been Using the Internet

An Anova test was used in order to identify the differences by the number of the years the participants have been using the Internet. As the result, for factor 4 was p<0.05 in the Test of Homogeneity of Variances, the requirement for Anova was not met. The Welch test was applied for factor 4. When looking at Table 5, as p<0.05, there is a significant difference for factor 1.

Testing the Differences in Cyberbullying Scale Sub-dimensions by the Daily Internet Use of the Participants

According to the Levene test results, all of the factors were found suitable for the Welch test. When looking at Table 5, as p<0.05, there is a significant difference for factors 1, 2 and 3.

Testing the Differences in Cyberbullying Scale Sub-dimensions by the Place Where the Participants Access the Internet

An Anova test was used in order to identify the differences by the place where the participants connect to the Internet. When looking at Table 5, as p<0.05, there is a significant difference for factors 3 and 4.

DISCUSSION

According to Ubertini (2010), the students who have been subjected to cyberbullying tend to have higher levels of depression and lower levels of self-respect while there were no significant differences found in terms of social anxiety and loneliness. On the other hand, the students who reported higher levels of life satisfaction and social support were observed to have lower levels of exposure to cyberbullying.

In his study, which included 4,531 adolescents whose ages ranged between 11 and 14 years in Korea, Jung et al. (2014) found that 9.7 percent of them showed cyberbullying behaviors, 3.3 percent were only victims, 3.4 percent were only agents while three percent were both victims and agents. A relationship was found between cyberbullying and problematic Internet use, and psychopathological symptoms.

In a study conducted by Gamez et al. (2013), the adolescents who are victims of cyberbullying were found to have higher risk levels of depression. The same participants were also found to carry higher risks for problematic Internet use.

In their study on scientific data and statistics for cyberbullying, Ybarra and Mitchell (2004) determined that twenty-five percent of the participants have been doing cyberbullying at least once a month, ten percent of which do it online while seven percentuse phone calls and eight percent prefer short messages.

Trachtenbroit (2011) concluded that cyberbullying could lead to school violence and commitment of suicide in his research. It is highlighted that especially the students in elementary schools who have been exposed to cyberbullying tended to commit suicide more as a consequence. Considering the overflow of school violence into the daily life reaching higher a number of people, teachers and caregivers are advised to take immediate action. It is also reported that the students who are constantly exposed to cyberbullying carry higher risks of committing suicide.

In a research conducted by Akca et al. (2015), it was found that out of the participants, 9.5 percent were only victims, seven percent were only agents while 7.5 percent were both victims and agents with a total of twenty-four percent showing cyberbullying or victimization somehow. In addition, most of the students were found to have access to the Internet at home and were

visiting social networks at least once everyday with Facebook being the most visited one. The study emphasizes the need for work to be done to prevent cyberbullying in elementary schools.

According to the results of a study conducted by Cicioglu (2014), there was a statistically meaningful difference found between the gender of the students and problematic Internet use and cyberbullying levels, as male students tend to have higher levels of cyberbullying attitudes and problematic Internet use compared to the female students while there was no significant difference found by age.

According to the results of a study conducted by Turkoglu (2013), there was a statistically meaningful difference found between cyberbullying attitudes of the students and their gender. There were also significant differences found in terms of approval, joy, anxiety, spoof and gender. Cyberbullying and problematic Internet use were found to be related to the time spent on the Internet.

According to Kinay (2012), perception of danger and exposure to crime seem to affect sensitivity to cyberbullying. Male students were found to show more risky behavior in computer and Internet use but more protective while being exposed to crime more and having higher levels of danger perceptions compared to the female students while female students seemed to be more sensitive to cyberbullying compared to the male students. On the other hand, it seems that as the students grow older, they exhibit risky behaviors more frequently.

Cetinkaya (2010) found significant differences in the amount of exposure to cyberbullying behaviors and having cyberbullying behaviors between female and male students. The results of this study as a whole indicate that male students seem to exhibit cyberbullying behaviors more while being exposed to cyberbullying more at the same time compared to the female students.

Gahagan et al. (2016) found that some participating students (19%) have been exposed to cyberbullying while nearly half of them (46%) have witnessed cyberbullying on social networks. Sixty-one percent of the students who have witnessed cyberbullying on social network sites reported that they did nothing to intervene. The college students were also asked what responsibilities they have to take when they encounter cyberbullying on social networks. There emerged two distinct perspectives as a consequence, that is, some students told that the responsibility of intervention depends on the circumstances, while others believed there is a constant clear level of responsibility for college student cyberbullying bystanders.

The findings of Wong et al. (2014) also suggest that males are more likely to exhibit cyberbullying behaviors or be exposed to cyberbullying compared to females. Cyberbullying and victimization seem to have a negative correlation with the physical health of an adolescent and the sense of belonging to school. There is a positive correlation between cyber and traditional bullying. Multivariate analyses show that being male, low sense of belonging to school and experience in traditional cyberbullying and cyber-victimization seem to increase the tendency towards being a cyberbully.

Francisco et al. (2015) found out that students do not care whether they have been involved in cyberbullying and that involving in cyberbullying is a hidden trait among college students. The schools where this study was conducted were closely interested in Internet security. The results of the study indicated that most of the participating students reported that they did not play an active role in cyberbullying. Thus, it becomes a must to inform students about the security strategies systematically to prevent cyberbullying.

Balakrishnan (2015) examined the scope of the cyberbullying experiences of the adolescents regarding the cyberbullies and cyber-victims using an online questionnaire. Prevalence rate shows that cyberbullying still exists even after school years. Even if there are no significant gender-specific differences observed, the number of women as cyberbullies or cyber-victims is found to be larger than the number of men involved in cyberbullying. Finally, as there is tendency for cyber-victims towards turning into cyberbullies (or vice versa), it is safe to say that there is a significant and positive correlation between cyberbullies and cyber-victims.

According to the findings of Kowalski et al. (2016), students with disabilities who have been exposed to traditional bullying are also at great risk of being cyberbullied. Characteristics of victimization include traditional bullying victimization, Internet use and the remarkability of a disability. It is quite common to see individu-als with disabilities pronouncing the consequences of cyberbullying victimization, such as low self-esteem and higher depression levels.

Festl (2016) indicated that technological resources seem to increase the number of crimes being witnessed or mediated through the higher levels of perceptive behavior control. It is acknowledged that there is a group of cyberbullies who use this kind of behavior as a strategy to achieve their social goals.

Based on the results of research, addiction seems to have become a serious problem among adolescents. Thus, young people are more likely to turn into cyberbullies or become victims. An attractive and exciting environment can be created for young people as a solution to addiction problems. An individual who cannot socialize in real life tends to meet his/her needs on social networks. Events such as group activities, sports activities, theater and movies, where the students can make more friends, can be held in order to make students socialize in real life.

However, precautions on the part of parents should be taken first. Parents should start caring about their children's Internet use at an earlier time and take the necessary precautions for ensuring effective and proper use. In this context, children should be provided with the use of the Internet for a limited time through a program under parent supervision. At schools, teams including school managers, psychological counselors and IT teachers should be formed to prevent Internet addiction and its by-product of cyberbullying. Rules and policies should be determined and teachers and families should be informed about them. The application of those rules and policies should be controlled at intervals.

CONCLUSION

The main reason for being a cyberbully is not getting social and emotional support within the immediate environment. The biggest responsibility falls on school managers, teachers and families. They should be knowledgeable about cyberbullying in order to be able to inform the students. They should adopt an open, democratic and supportive way of communication in addition to the activities and environments in which the students and the teachers can form close friendships. Also, activities that emphasize the importance and value of close friendships to prevent cyberbullying are some of the examples.

The conclusions below can be drawn based on the findings of the study.

The female students' levels of cyberbullying seem to be lower than that of male students.

The cyberbullying levels of 13 or 14-year-old students appear to be higher. The cyberbullying levels of ninth graders tend to be higher compared to that of tenth and eleventh graders, while the tenth graders are more likely to show higher levels of cyberbullying compared to the eleventh graders based on the factors considered. So, it can be said that the students tend to show higher levels of cyberbullying as they grow older. Also, the students who have started using the Internet recently seem to display higher levels of cyberbullying. The cyberbullying levels of the students can change depending on the time spent on the Internet. There are also meaningful differences found on some factors between the place where the participants connect to the Internet and their cyberbullying levels.

REFERENCES

Akca BE, Sayimer I, Ergul S 2015. Middle school students' social media use and their cyberbullying experience: A case study from Ankara. *Global Media Journal TR Edition*, 5: 71-85.

Altunisik R, Coskun R, Yildirim E, Bayraktaroglu S 2004. *Sosyal Bilimlerde Arastirma Yontemleri SPSS Uygulamalari.* 3rd Edition. Turkey: Sakarya Kitabevi.

Aricak OT 2009. Psychiatric symptomatology as a predictor of cyberbullying among university students. *Egit Arast*, 34: 167-184.

Aricak OT 2011. Siber zorbalýk: Genclerimizi bekleyen yeni tehlike. *Kariyer Penceresi*, 2: 10-12.

Aricak OT, Kinay H, Tanrikulu T 2012. Siber zorbalik olcegi'nin ilk psikometrik bulgulari. *Journal of the Hasan Ali Yucel Faculty of Education*, 9: 101-114.

Aricak T, Siyahhan S, Uzunhasanoglu A, Saribeyoglu S, Ciplak S, Yilmaz N, Memmedov C 2008. Cyberbullying among Turkish adolescents. *Cyberpsychol Behav*, 11: 253-261.

Balakrishnan V 2015. Cyberbullying among young adults in Malaysia: The roles of gender, age and internet frequency. *Comput Hum Behav*, 46: 149-157. http://dx.doi.org/10.1016/j.chb.2015.01.021.

Campbell MA 2007. Cyberbullying and young people: Treatment principles not simplistic advice. *QUT Digital Repository*, 1-15.

Cetinkaya B 2010. *The Prevalence of the Cyberbullying on Secondary School Students*. MSc Thesis. Institute of Educational Sciences. Konya, Turkey: Selcuk University.

Ceyhan E 2010. Predictiveness of identity status, main internet use purposes and gender on university students' the problematic internet use. *Educational Sciences: Theory and Practice*, 10: 1323-1355.

Child D 2006. *The Essentials of Factor Analysis.* 3rd Edition. London: Continuum.

Cicioglu M 2014. *Students' Opinions About Problematic Internet Use and Cyber Bullying Behaviors.* MSc Thesis. Institute of Educational Sciences. Bolu, Turkey: Abant Izzet Baysal University.

Civilidag A, Cooper TH 2013. An investigation on adolescents' cyber bullying and anger: A case study in Nigde

province in Turkey. *The Journal of Academic Social Science Studies*, 6: 497-511.

Dolek N 2002. *Researching Bullying Behavior of Student and a Model for a Prevention Program*. PhD Thesis. Institute of Educational Sciences. Istanbul, Turkey: Marmara University.

Eksi F 2012. Examination of narcissistic personality traits' predicting level of internet addiction and cyber bullying through path analysis. *Educational Sciences: Theory and Practice*, 12: 1683-1706.

Erdur-Baker O, Kavsut F 2007. Cyberbullying: A new face of peer bullying. *Egit Arast*, 27: 31-42.

Eroglu Y 2011. *The Investigation Relationships among Contingencies of Self-worth, Risky Internet Behaviors, and Cyberbullying/Cybervictimization*. MSc Thesis. Institute of Educational Sciences. Sakarya, Turkey: Sakarya University.

Festl R 2016. Perpetrators on the internet: Analyzing individual and structural explanation factors of cyberbullying in school context. *Comput Hum Behav*, 59: 237-248. http://dx.doi.org/10.1016/j.chb.2016.02.017.

Francisco SM, Simão AMV, Ferreira PC, Martins MJD 2015. Cyberbullying: The hidden side of college students. *Comput Hum Behav*, 43: 167-182. http://dx.doi.org/10.1016/j.chb.2014.10.045.

Gahagan K, Vaterlaus JM, Frost LR 2016. College student cyberbullying on social networking sites: Conceptualization, prevalence, and perceived bystander responsibility. *Comput Hum Behav*, 55: 1097-1105. http://dx.doi.org/10.1016/j.chb. 2015.11.019.

Gamez GM, Orue I, Smith PK, Calvete E 2013. Longitudinal and reciprocal relations of cyberbull-ying with depression, substance use and problematic internet use among adolescents. *J Adolescent Health*, 53: 446-452.

Hinduja S, Patchin JW 2014. *Bullying Beyond the Schoolyard: Preventing and Responding to Cyberbullying*. Thousand Oaks, CA: Corwin Press.

Jung YE, Leventhal B, Kim YS, Park TW, Lee SH, Lee M, Park SH, Yang JC, Chung YC, Chung SK, Park JI 2014. Cyberbullying, problematic internet use, and psychopathologic symptoms among Korean youth. *Yonsei Med J*, 55: 826-830.

Juvonen J, Gross EF 2008. Extending the school grounds? Bullying experiences in cyberspace. *J School Health*, 78: 496-505.

Karakurt N 2014. *The Degree of Exposure to Cyber Bullying of Teacher Candidates and the Degree Application of These Behaviors*. MSc Thesis. Institute of Educational Sciences. Kahramanmaras, Turkey: Kahramanmaras Sutcu Imam University.

Karasar N 2006. *Bilimsel Arastirma Yontemi: Kavramlar, Ilkeler, Teknikler*. Ankara: Nobel Yayin Dagitim.

Kinay H 2012. *An Analysis of the Relation between Cyberbullying Sensibility and Risk Behaviour, Conservative Behaviour, Exposure to Offence and Risk Perception and in Relation to Various Variables of Lycee Students*. MSc Thesis. Institute of Educational Sciences. Sakarya, Turkey: Sakarya University.

Kowalski RM, Morgan CA, Lavelle KD, Allison B 2016. Cyberbullying among college students with disabilities. *Comput Hum Behav*, 57: 416-427. http://dx.doi.org/10.1016/j.chb.2015.12.044.

Law DM, Shapka JD, Hymel S, Olson BF, Waterhouse T 2012. The changing face of bullying: An empirical comparison between traditional and internet bullying and victimization. *Comput Hum Behav*, 28: 226-232.

Ozbay A 2013. *Relationship between Cyberbullying, Cyber Victimization, Alexithymia and Forms of Anger Expression Among Adolescents*. MSc Thesis. Institute of Social Sciences. Istanbul, Turkey: Fatih University.

Ozdemir M, Akar F 2011. Examination of high school students' opinions on cyberbullying in terms of various variables. *Educational Administration: Theory and Practice*, 17: 605-626.

Pamuk M, Bavli B 2013. An investigation of adolescents' cyberbullying according to some variables. *Ondokuz Mayis University Journal of Faculty of Education*, 32: 321-338.

Peker A 2013. *Investigation of Effect of Human Values-oriented Psycho-Training Programme on Problematic Internet Use and Cyber Bullying*. PhD Thesis. Institute of Educational Sciences. Sakarya, Turkey: Sakarya University.

Piskin M 2002. School bullying: Definition, types, related factors and strategies to prevent bullying problems. *Educational Sciences: Theory and Practice,* 2: 531-562.

Sencan H 2005. *Sosyal ve Davranissal Olcumlerde Guvenilirlik ve Gecerlilik*. Ankara: Seckin Yayincilik.

Tavsancil E 2014. *Tutumlarin Olculmesi Ve SPSS Ile Veri Analizi*. Ankara: Nobel Yayin Dagitim.

Trachtenbroit ML 2011. *Cyberbullying, School Violence and Youth Suicide*. PhD Thesis. U.S.A: University of Southern Mississippi.

Turkoglu S 2013. *To Examine the Relationship Between the Adolescents' Problematic Internet Use and Their Tendencies to Cyber Bullying*. MSc Thesis. Institute of Educational Sciences. Istanbul, Turkey: Marmara University.

Ubertini M 2010. *Cyberbullying May Reduce Adolescent's Well-Being: Can Life Satisfaction and Social Support Protect Them*. ProQuest LLC. New York: Hofstra University.

Ucanok Z, Karasoy D, Durmus E 2011. Yeni Bir Akran Zorbaligi Turu Olarak Sanal Zorbalik: Ergenlerde Yaygýnligi Ve Onemi. *TUBITAK Project Report,* Project No: 108K424.

Vandebosch H, Van Cleemput C 2008. Defining cyberbullying: A qualitative research into the perceptions of youngsters. *Cyberpsychol and Behav,* 11: 499-503.

Wong DSW, Chan HC, Cheng CHK 2014. Cyberbullying perpetration and victimization among adolescents in Hong Kong. *Children and Youth Services Review,* 36: 133-140. http://dx.doi.org/10.1016/j.child-youth.2013.11.006.

Yaman E, Peker A 2012. The perceptions of adolescents about cyberbullying and cyber victimization. *University of Gaziantep Journal of Social Sciences*, 11: 819-833.

Ybarra ML, Mitchell KJ 2004. Online aggressor/targets, aggressors, and targets: A comparison of associated youth characteristics. *J Child Psychol Psychiatry*, 45: 1308-1316.