WCES-2010

Psychological consequences of cyber bullying experiences among Turkish secondary school children

Özgür Erdur Baker[a], İbrahim Tanrıkulu[a] *

[a]Department of Educational Sciences, Middle East Technical University, 06531, Ankara, Turkey

Abstract

This study aimed to examine the relations of cyber bullying experiences of Turkish secondary school children (as a victim and bully) to demographic variables (age and gender) and depressive symptoms. The participants were 165 secondary school students (94 females and 71 males) whose ages ranged from 10 to 14. According to the results, there is a significant interaction effect between age and gender on cyber bullying experiences, but they are not related to being a cyber victim. In other words, while school children's age and gender are related to being a cyber bully, school children may have the potential to be a cyber victim regardless of their age and gender. Moreover, the results revealed that the students who reported to being cyber victim indicate higher level of depressive symptoms.

1. Introduction

Internet and mobile phones as new information technologies provide several benefits for youngsters like better communication and deeper self-disclosure (McKenna & Barge, 1999) or establishing social ties (Henderson & Gliding, 2004). On the other hand, youngsters also use internet and mobile phones for negative purposes including spreading rumor, sending shameful messages or threatening someone by hiding behind fake names (Kowalski & Limber, 2007). In fact, it was found that teenagers displayed more aggressive behaviors than real life in cyber space (Ybarra & Mitchell, 2004) and sought revenge in an anonymous environment (King, Walpoe, & Lamon, 2007) because cyber environment may be perceived as a safer place for harmful actions (Kowalski & Limber, 2007). Such online activities are called cyber bullying which is defined as the purposeful, repetitive and harmful use of information technologies. The extant literature indicates that cyber bullying is a prevalent phenomenon for many countries such as Australia (Campbell, 2005), Canada (Li, 2005), Sweden (Slonje & Smith, 2008), Turkey (Topçu, Erdur-Baker, & Aydın, 2008; Arıcak et al., 2008) or United States (Strom & Strom, 2005).

According to the cyber bullying literature, some variations are observed for the prevalence of cyber bullying experiences among secondary school children. The percentages changed between 4.1% and 62% (Kowalski & Limber, 2007; Li, 2006). Despite these variations, all of the studies emphasized that cyber bullying has become a growing phenomenon that should be carefully dealt with. Moreover, the frequent use of information technologies was positively related with cyber bullying experiences (Ybarra & Mitchell, 2004; Topçu et al., 2008), and school

---

* Özgür Erdur Baker. Tel.: 03122104029

E-mail address: ibrahimtanrikulu@gmail.com

children have methods for conducting cyber bullying such as mobile phone messages, instant messaging, chat rooms and e-mail (Kowalski & Limber, 2007).

As demographic variables, gender and age appear to be significant factors for cyber bullying. In terms of gender, a disagreement exists among the researchers. Although some maintained that females employed cyber bullying more than males as cyber bullying involves relational or verbal aggression (Keith & Martin, 2005), others stated that males act more aggressively in cyber space (Li, 2006). However, another group of researchers claimed that gender was not related to cyber bullying as both females and males equally engaged in cyber bullying behaviors (Syts, 2004; Patchin & Hinduja, 2006). In addition to gender, age was also considered as a main variable affecting the cyber bullying actions of individuals. Studies were conducted with middle school (Kowalski & Limber, 2007; Topçu et al., 2008; Li, 2005), high school (Li, 2006) and undergraduate university students (Arıcak, 2009); yet, it was indicated that middle school children displayed more cyber bullying behaviors than the others (Williams & Guerra, 2007).

Children go through a number of negative psychological outcomes if they are subject to cyber bullying. It was noted that as well as frustration and sadness (Mishna, Mclukie, & Saini, 2009), depression, confusion, guilt, shame, self harm, distress, withdrawal from friends were the feelings children experience as a result of being exposed to cyber bullying (Hinduja & Patchin, 2007; Ybarra, 2004). Among these consequences, depression seems to be the one arousing the most attention among researchers (Finkelhor, Mitchell, & Wolak, 2000; Ybarra, 2004). In fact, Ybarra (2004) reported that the victims of cyber harassment demonstrated depressive-like symptomatology three times more than the non-victims. However, the empirical studies substantiating the negative psychological impacts of the experiences of cyber bullying is still in its infancy. In brief, the existing literature indicates an increasing worry about the cyber bullying experiences of children (Strom & Strom, 2004; Ybarra, Mitchell, Wolak & Finkelhor, 2007). Though there are several studies about nature and consequences of cyber bullying, their quantity is still not adequate. Thus, in the light of the existing literature, this study intends to seek answers about how cyber bullying experiences of Turkish secondary school children (as a victim and bully) relate to demographic variables (age and gender) and depressive symptoms.

2. Method

2.1. Procedure, participanst and measures

The participants of the study were gathered from a secondary school, and convenient sampling was used in the sampling process. After acquiring the necessary permissions and consent for data collection, a research assistant collected the data from the volunteer participants. The participants were 165 secondary school students (94 females and 71 males) whose ages ranged from 10 to 14 (*M*=12.19, *SD*=1.42). Of the participants, 25 (15.8%) were 10 years old, 32 (19.9 %) were 11 years old, 33 (19.3 %) were 12 years old, 33 (19.3%) were 13 years old, 42 (25.7%) were 14 years old.

The Cyber Bullying Scale was developed by Erdur-Baker and Kavşut (2007) to measure the nature and severity of cyber bullying experiences of Turkish adolescents. The two similar forms of the scale evaluated cyber victimization and cyber bullying. A single factor structure was determined after the factor analysis of the two forms, and the internal consistency coefficient was .92 for bullying and .80 for victimization forms. Topçu (2008) later revised the scale by adding a few more items and confirmed the single factor structure. There are 26 items for cyber victim and cyber bully forms in the final version of the scale. Sample items from the cyber bully form can be illustrated as "I have insulted people in the chat room" and from the cyber victim form "I have been slandered by fake photos of me on the Internet." Participants reported their experiences on a4-point Likert type rating scale providing scores for being a bully and victim for the past semester as follows: 1 = It has never happened to me; 2 = It happened once ; 3 = It happened twice-three times; and, 4 = It happened more than three times. The analysis of the present data yielded an internal consistency of the cyber bully form of .89 and the cyber victim form of .90.

The Children's Depression Inventory (CDI) was built up by Kovacs (1981) and was translated into Turkish by Öy (1990). It is a 27-item self-rated depressive symptom scale which examines cognitive, affective, and behavioral symptoms of child depression. It is a modification of the Beck Depression Inventory to use for children. Children are supposed to choose one sentence among three statements that best explains their feelings over the past two weeks. The test-retest reliability of the Turkish Form of the scale was .80 based on its application to 380 students, and the correlation of the scale with Childhood Depression Rating Scale was found as .61 (Savaşır & Şahin, 1997). The alpha coefficient for the sample of the current study was .85.

3. Results

3.1. The relations of gender and age to being a cyber bully

A 5x2 one-way analysis of variance (ANOVA) was utilized to check the effects of age and gender on being a cyber bully. Gender had two levels (female and male); age had 5 levels which included 10, 11, 12, 13 and 14 ages. The results of the ANOVA revealed significant interaction effect of gender and age categories (F (4, 164) = 3.63, p=.007, partial $\eta2$ = .08). Due to the fact that the interaction effect is found to be significant, the analyses of simple main effects were executed as follow-up tests. In order to control Type I error, Bonferroni adjustment for multiple comparisons of simple main effects was utilized. The nature of the interactions can be seen in Figure 1.While no age differences among male students was observed, 14 years old female students scored significantly higher than 11, 12, and 13 years old female students. Furthermore, 14 years old female students reported significantly higher scores on being a cyber bully than 14 years old male students.
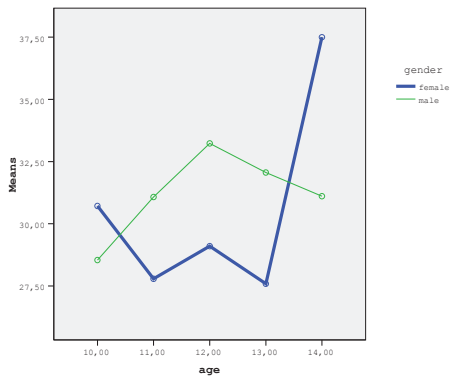

Figure 1. The relations of gender and age to being a cyber bully

Table 1. *Means and Standard Deviations of Being a Cyber Bully*				
Age	Gender	N	M	SD
10	Female	14	30.71	7.45
	Male	11	28.54	2.24
	Total	25	29.75	5.78
11	Female	19	27.78	1.92
	Male	13	31.07	9.41
	Total	32	29.12	6.25
12	Female	20	29.10	6.40
	Male	13	33.22	10.57
	Total	33	30.72	8.39
13	Female	17	27.58	2.39
	Male	16	32.05	6.06
	Total	33	29.75	5.02
14	Female	24	37.49	12.31
	Male	18	31.10	6.16
	Total	42	34.76	10.54
Total	Female	94	30.94	8.44
	Male	71	31.30	7.36
	Total	165	31.10	7.97

3.2. The relations of gender and age to being a cyber victim

A 5x2 one-way analysis of variance (ANOVA) was utilized to check the relationship of age and gender on being a cyber victim. Gender had two levels which were female and male; age had 5 levels which included 10, 11, 12, 13 and 14 ages. The results of the ANOVA indicated no significant main effect for gender (F (1, 164) = .03, p=.08); and age categories (F (4, 164) = .55, p=.69). Furthermore, it revealed no significant interaction effect between gender and age categories (F (4, 164) = 2, p=.09). Table 2 demonstrates the descriptive results, and Figure 2 shows the relations of gender and age to being a cyber victim.
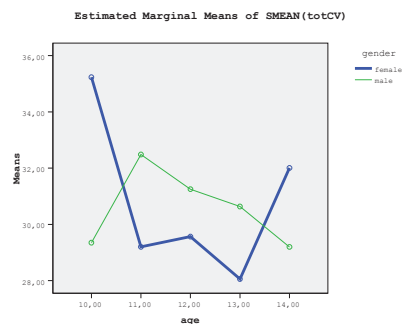

Figure 2. The relations of gender and age to being a cyber victim

Table 2. *Means and Standard Deviations of Being a Cyber Victim*

Age	Gender	N	M	SD
10	Female	14	35.23	17.63
	Male	11	29.35	3.78
	Total	25	32.64	13.53
11	Female	19	29.20	5.61
	Male	13	32.48	10.11
	Total	32	30.53	7.78
12	Female	20	29.56	3.35
	Male	13	31.25	7.00
	Total	33	30.22	5.07
13	Female	17	28.05	3.09
	Male	16	30.63	5.48
	Total	33	29.30	4.53
14	Female	24	32.00	5.84
	Male	18	29.19	5.95
	Total	42	30.80	5.99
Total	Female	94	30.68	8.21
	Male	71	30.52	6.67
	Total	165	30.61	7.57

3.3. The relations of age, gender and cyber victimization to depressive symptoms

A bivariate correlation analysis which was used to check whether a correlation existed between the variables indicated that being a cyber bully was significantly correlated with being a cyber victim ($r = .48, p < .05$) ; and age ($r = .23, p < .05$). Furthermore, cyber victimization was only significantly correlated with depression ($r = .28, p < .05$). Cyber bullying was not added to the multiple regression model as it was not positively correlated with depression. In the multiple regression model, depression was the dependent variable. As can be seen from Table 3, demographic variables of age and gender were entered in the first block, and cyber victimization was added in the second block. The regression equation with age and gender was not significant ($R^2 = .01$, adjusted $R^2 = -.00$, $F(2, 164) = .82$, $p = .43$). The unique contributions of age ($\beta = -.07$; $p = .34$) and gender ($\beta = -.06$; $p = .39$) were not significant either. In the second block, cyber victimization significantly predicted depressive symptoms ($R^2 = .10$, adjusted $R^2 = .08$, $F(3, 164) = 6.05$, $p = .00$) over and above the variables of age and gender. Based on these results, cyber victimization was the only significant predictor ($\beta = .30$; $p = .00$) of depression.

Table 3.
The Relations of Age, Gender, and Cyber Victimization to Depressive Symptoms

Predictors	Outcome: Depressive symptoms [1]		
	ΔR^2	β	p
Step 1	-.002		
Gender		-.07	.34
Age		-.06	.39
Step 2	.08		
Gender		-.07	.34
Age		-.04	.54
Cyber Victimization		.30	.00

Note 1. Adj. R^2 for final model for depressive symptoms $= .08$, $F(3,164) = 6.05$, $p = .001$

4. Discussion

This study examined whether gender and age as demographic variables were related to being a cyber bully and a cyber victim, and whether cyber victimization were linked to depressive symptoms. The role of age and gender were examined by independent studies. While some claim gender was not significantly related with cyber bullying (Syts, 2004; Patchin & Hinduja, 2006), others argued that it was (e.g., Li, 2006). In addition, though some researchers stated that age was important in cyber bullying behavior (Ybarra & Mitchell, 2004), other researchers said it was not (Smith et al., 2005). Yet, the results of this study demonstrated that gender together with age was related to being a cyber bully. This means that gender and age of the participants should not be taken separately on affecting cyber bullying behavior. According to the results, 14 years old females not only had higher scores than their female peers but their scores of cyber bullying were also higher than the 14 years old males. However, there is no encountered

study explaining why 14 year old females had this difference. Thus, future studies, advisably qualitative ones, may focus on the reasons why 14-years old females show this difference.

On the other hand, it is surprising that both age and gender were not significantly related to cyber victimization. This point was maintained by some previous studies as well. For example, in her study involving 264 high school students, Li (2006) found that 25% of both females and males were cyber bullied without any age differences. This suggests that cyber bullying is a critical issue of concern because regardless of their age and gender, all school children may have the potential to be a target of a cyber bully.

Lastly, this study validated the results of the previous studies that being a victim of cyber bullying may pose a threat for the development of psychological problems (Kowalski, Limber, & Agatson, 2008; Ybarra, 2004; Arıcak, 2009). This finding demonstrated the need of developing counseling programs for school children to help them lessen the psychological consequences of cyber victimization. Nonetheless, this present study has some limitations such as non-generalizability of the results because of the convenient sampling procedure, and the need for cross validation with students from various backgrounds. This study also has the limitations of any study which utilizes self-report measures.

References

Arıcak, O. T., Siyahhan, S., Uzunhasanoğlu, A., Sarıbeyoğlu, S., Çıplak, S., Yılmaz, N., & Memmedov, C. (2008). Cyber bullying among Turkish adolescents. *Cyberpsychology & Behavior*, *11*, 253-261.

Arıcak, O. T. (2009). Psychiatric symptomatology as a predictor of cyberbullying among university students. *Eurasian Journal of Educationa Research*, *34*, 167-184.

Campbell, M. A. (2005). Cyber bullying: An old problem in a new guise? *Australian Journal of Guidance and Counselling, 15*, 68-76.

Erdur-Baker, Ö., & Kavşut, F. (2007). A new face of peer bullying: Cyberbullying. *Journal of Eurasian Educational Research*, *27*, 31-42.

Finkelhor, D., Mitchell, K. J., & Wolak, J. (2000). Online victimization: A report on the nation's youth (No. 6-00-020). Alexandria, VA: National Center for Missing & Exploited Children.

Henderson, S., & Gliding, M. (2004). I've never clicked this much with anyone in my life: Trust and hyper personal communication in online friendships. *New Media and Society*, *6*, 487-506.

Hinduja, S., & Patchin, J. W. (2007). Offline consequences of online victimization. *School Violence and Delinquency*, *6*, 89-112.

Keith, S., & Martin, M. E. (2005). Cyber bullying: Creating a culture of respect in a cyber world. *Reclaiming Children and Youth, 13*, 224-228.

King, J., Walpole, C., & Lamon, K. (2007). Surf and turf wars online-growing implications of internet gang violence. *Journal of Adolescent Health, 41*, 66-68.

Kovacs, M. (1981). The Children's depression inventory. *Psychopharmalogical Bulletin*, *l*, 995-998.

Kowalski, R.M., & Limber, S.P. (2007). Electronic bullying among middle school students. *Journal of Adolescent Health, 41*, 22-30.

Kowalski, R. M., Limber, S. P., & Agatson, P. W. (2008). *Cyber bullying- Bullying in the digital age*. Malden, Massachusetts: Blackwell, 2007.

Li, Q. (2005). New bottle but old wine: A research of cyberbullying in schools. *Computers in Human Behavior*, *23*, 1177-1791.

Li, Q. (2006). Cyberbullying in schools: A research of gender differences. *School Psychology International, 27*, 157-170.

McKenna, K.Y.A., & Bargh, J.A. (1999). Causes and consequences of social interaction on the Internet: A conceptual framework. *Media Psychology*, *1*, 249–270.

Mishna, F., Mclukie, A., & Saini, M. (2009). Real-World Dangers in an Online Reality: A Qualitative Study Examining Online Relationships and Cyber Abuse. *Social Work Research*, *33*, 107-118.

Öy, B. (1990). Çocuklar için depresyon ölçeği (Chidren's depression inventory)," in *Bilişsel Terapilerde Değerlendirme: Sık Kullanılan Ölçekler (Assessment in Cognitive Therapies: Commonly Used Scales),* I. Savaşır and N.H. Şahin, Ankara: Türk Psikologlar Derneği Yayınları (Turkish Association of Psychologists Publications), 1997, 136-143.

Patchin, J. W., & Hinduja, S. (2006). Bullies move beyond the schoolyard: A preliminary look at cyberbullying. *Youth Violence and Juvenile Justice, 4,* 148-169.

Savaşır, I., & Şahin, N.H. (1997). "*Bilişsel davranışçı terapilerde değerlendirme: Sık kullanılan ölçekler,*" *(Assessment in Cognitive Therapies: Commonly Used Scales)* Türk Psikologlar Derneği Yayınları., (Turkish Association of Psychologists Publications), Ankara.

Slonje, R., & Smith, P. K. (2008). Cyberbullying: Another main type of bullying? *Scandinavian Journal of Psychology, 49*, 147-154.

Smith, P., Mandavi, J., Carvalho, M., & Tippett, N. (2005). An investigation into cyberbullying, its forms, awareness and impact, and the relationship between age and gender in cyberbullying (A Report to the Anti-Bullying Alliance). University of London, Goldsmiths College, Unit for School and Family Studies, p.6. Retrieved January 24, 2007 from http://www.anti-bullyingalliance.org.uk/downloads/pdf/cyberbullyingreport_final230106_000.pdf.

Strom, P. S., & Strom, R. S. (2005). Cyberbullying by adolescents: A preliminary assessment. *The Educational Forum*, *70*, 21-32.

Syts, Y. (2004). *Beyond the schoolyard: Examining electronic bullying among Canadian youth.* Unpublished master's thesis, Carleton University,Ottawa, Ontario.

Topcu, Ç. (2008). "*The relationship of cyber bullying to empathy, traditional bullying, the frequency use of information and communication tools, and adult monitoring of the internet use,*" Master's thesis, Middle East Technical University, Ankara, 2008.

Topçu, Ç., Erdur-Baker, Ö. & Çapa-Aydın, Y. (2008). Examination of cyberbullying experiences among Turkish students from different school types. *Cyber Psychology and Behavior*, *11*, 643–648.

Williams, K. R. & Guerra, N. G. (2007). Prevalence and predictors of Internet bullying. *Journal of Adolescent Health, 41*, 14-21.

Ybarra, M. L. & Mitchell, K. J. (2004). Online aggressor/targets, aggressors, and targets: A comparison of associated youth characteristics. *Journal of Child Psychology and Psychiatry*, *45*, 1308-1316.

Ybarra, M. L. (2004). Linkages between depressive symptomatology and internet harassment among young regular internet users. *Cyber Psychology and Behavior*, *7*, 247-257.

Ybarra, M. L., Mitchell, K. L., Wolak, J., & Finkelhor, D. (2007). Internet prevention messages: Targeting the right online behaviors. *Archives Pediatric Adolescence*, *161*, 138-145.