

Investigation of Relationship Between Peer Bullying and Cyberbullying Among Middle School Students¹

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Abstract

The aim of this study is to investigate the relationship between peer bullying tendency and cyberbullying tendency and peer bullying victimization and cyberbullying victimization among middle school students. The study was carried out with 1080 middle school students (551 girls and 529 boys) in Istanbul. Demographic Information Form, Peer Bullying Tendency Scale, Peer Bullying Victimization Scale, Cyberbullying Tendency Scale and Cyber Victimization Scale were administered to the students. The data obtained were analyzed with Pearson Product Moment Correlation, independent sample t-test and one-way analysis of variance. Results of the study indicated a significant relationship between peer bullying tendency and cyberbullying tendency of students. In addition, another significant relationship was found between the students' exposure to peer bullying and cyberbullying. In addition to these, results of the study revealed a significant relationship between students' tendency to peer bullying and their exposure to cyberbullying and again a significant relationship between students'

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exposure to peer bullying and cyberbullying. The recommendations for future research and for stakeholders-school counselor, teachers, parents and adolescents- are presented.

Keywords: Peer bullying; Peer bullying victimization; Cyberbullying; Cyberbullying victimization.

Ortaokul Öğrencilerinde Akran Zorbalığı ile Siber Zorbalık Arasındaki İlişkinin İncelenmesi

Öz

Bu çalışmanın amacı ortaokul öğrencilerinde akran zorbalığı eğilimi ve mağduriyeti ile siber zorbalık eğilimi ve mağduriyeti arasındaki ilişkilerin incelenmesidir. Araştırmaya İstanbul'da ortaokula devam eden 551 kız öğrenci, 529 erkek öğrenci katılmıştır. Katılımcılara demografik bilgi formu, Akran Zorbalığı Eğilimi Ölçeği, Akran Zorbalığı Mağdurları Belirleme Ölçeği, Siber Zorbalık Eğilimi Ölçeği ve Siber Mağduriyet Ölçeği uygulanmıştır. Araştırmada elde edilen veriler Pearson Momentler Çarpımı Korelasyonu, bağımsız gruplar t testi ve tek yönlü varyans analizi ile incelenmiştir. Araştırma sonucunda, akran zorbalığı eğilimi ile siber zorbalık eğilimi arasında ve akran zorbalığı mağduriyeti ile siber zorbalık mağduriyeti arasında anlamlı ilişkiler bulunmuştur. Ayrıca, akran zorbalığı eğilimi ile siber mağduriyet arasında ve akran zorbalığı mağduriyeti ile siber zorbalık arasında da anlamlı ilişkiler olduğu görülmüştür. Araştırma bulguları tartışılarak bilimsel araştırmalar için öneriler sunulmuştur. Bununla birlikte okul psikolojik danışmanları, öğretmenler, ebeveynler ve öğrenciler için öneriler sunulmuştur.

Anahtar Kelimeler: Akran zorbalığı; Akran zorbalığı mağduriyeti; Siber zorbalık; Siber zorbalık mağduriyeti.

Introduction

Peer bullying is one of the most important problems that are frequently encountered at schools and tend to increase continuously. Peer bullying which is considered as a sub-dimension of aggression in the literature is also explained by concepts such as traditional bullying, traditional peer bullying, or school bullying (Cowie and Jennifer, 2008; Monks and Smith, 2006; Olweus, 1993; Rivers and Smith, 1994). Along with the problem that students engage in violent behaviors towards each other and those around them physically and verbally, there are different dimensions of the problem occurring in different ways within the scope of peer bullying. Peer bullying not only damages the

safe school climate but also brings about many serious problems in school environments. As a matter of fact, it is not possible that students benefit from educational activities efficiently in school buildings, where security need, one of the most basic needs of people, is not provided (Öğülmüş, 2006). In this regard, the students who are exposed to bullying may be adversely affected from academic, social and personal dimensions. Bullying causes students to perceive schools as insecure places (Farrington, 1993).

Peer bullying has been defined from different perspectives and many definitions have been made to identify those who exhibit bullying behaviors and are exposed to these behaviors (Arora, 1996; Besag, 1995; Olweus 1993). The most prominent elements commonly referred to among these definitions are persistent and repetitive peer bullying, imbalance of power between the parties, and deliberate detrimental behavior that occurs verbally, physically and psychologically (Olweus, 1993). Even, peer bullying is divided into various categories as patterns of behavior. The conceptualization of these categories depends on bullying and direct-indirect bullying involving verbal, physical or relational attitudes and behaviors (Besag, 1995; Rigby, 2007).

With the increasing prevalence of peer bullying in schools, the number of studies on this issue has increased rapidly and, various intervention programs have been developed and solutions to the problem have been produced (Dölek, 2002; Merrell, Gueldner, Ross and Isava, 2008; Türktan, 2013). Despite these solution proposals and intervention programs, peer bullying at schools continues with many types such as physical, verbal, emotional, behavioral, disruptive, sexual, racist, hiding and taking something that belongs to someone else (Koç, 2006). As a result of technological developments and that communication and interaction has been brought to a virtual environment, peer bullying behaviors have gained a different composition.

While the supply of digital technologies has increased, the use of these technologies has become an inevitable phenomenon of our time. As a matter of fact, in all areas of life, the use of tools such as computers, mobile phones and tablets in workplaces, hospitals, shopping malls, schools, homes and even on the streets is now perceived as a normal situation. Furthermore, inadequate use of technology can lead to a major shortage of lagging behind life. The importance of being literate in the past has converted to a different form with digital technology today. The current counterpart of the perception of literacy is technology literacy, which begins with computer and internet familiarity.

This is especially important in order to provide the best benefit from the use of digital technologies and to prevent potential hazards (Erdoğan, 2011).

With the widespread use of internet-based communication among children and young people, the way to bring bullying behaviors of students into a virtual environment has been opened. The transition of bullying from physical to virtual environment and continuing in virtual environment raises the problem defined as “cyberbullying” (Arıçak et al., 2008; Belsey, 2006; Patchin and Hinduja, 2006; Willard, 2007; Yaman, Eroğlu and Peker, 2011). Cyberbullying is defined as intentional, repetitive and hostile behavior displayed by an individual or group to harm others by using information and communication technologies. It could be observed in e-mails, mobile phone messages, instant messages, chat rooms, social networks, personal blog pages, survey sites and with other digital technology tools (Arıçak, 2009; Beale and Hall, 2007; Belsey, 2006; Strom and Strom, 2005; Tim and Perez, 2010). It is possible for students who communicate and interact by using internet and mobile phones to reach others easily by hiding their identity in a virtual environment. While providing a safe space for cyberbullies who can perform with anonymous identity, virtual environments do not provide protection for the victims to avoid from these behaviors (Patchin and Hinduja, 2007).

Although cyberbullying is considered as a kind of peer bullying in a virtual environment, it differs from peer bullying in some aspects. These differences could be listed as usage of the internet and other digital technologies and requirement of competence in such technologies, ability to conceal the identity, the rapid spread of negativity encountered in the virtual environment and reaching a large audience, inadequate family supervision, children’s and young people’s concerns about getting help from adults (Ayas and Horzum, 2012; Belsey, 2006; Law, Shapka, Hymel, Olson and Waterhouse, 2011; Shariff, 2005). While cyberbullying has some different characteristics than peer bullying mentioned above, the power imbalance in the behaviors emerging as the result of these two tendencies and the repetitive and damaging aspects of behaviors are similar for both types of bullying. Like peer bullying, cyberbullying has a negative effect on development, social relations and academic success of children and adolescents (Haynie et al., 2001; Juvonen, Graham and Schuster, 2003; Nansel et al., 2001).

When the studies on peer bullying and cyberbullying are examined, it is stated that peer bullying happening verbally negatively affects the self-

perception of both females and males (Anderson, 2007), it is also found that the self-esteem of people exposed to bullying is lower (Keskin, 2010). In addition to this, it is stated that bullying also changes students' perception of school climate. Students perceive the school as a life space and it is stated that the meaning attributed to the school has a relationship with witnessing bullying experiences (Arıman, 2007). In a study examining peer bullying and psychological symptoms of ninth grade students, it was determined that most of the students were in bully / victim group and it is followed by the students in the non-interfering, victim and bully group, respectively. Students who do not engage in peer bullying experience less anxiety, depression and negative self-esteem compared to the victim and bully / victim students (Acar, 2009). Studies on cyberbullying in the 2000s have increased and become widespread as mentioned before. The impact areas of cyberbullying, that students may be exposed to at anytime and anywhere in the digital age, have been examined and evaluated. In line with the findings of many studies in the literature, it has been concluded that male students apply cyberbullying more and are exposed to cyberbullying more than female students (Burnukara, 2009; Campfield, 2006; Çifçi, 2010; Lightburn, 2009; Topçu, 2008). Along with gender differences, cyberbullying experiences are discussed with various variables. In the study of O'Harra (2012) on the roles and responsibilities of school counselors related to students' cyberbullying experiences, school counselors evaluated that students' cyberbullying experiences are more critical than their peer bullying experiences and that they were insufficient in intervention. Ubertini (2010) stated that students exposed to cyberbullying experience high levels of depression and low self-esteem. In addition, students' attempting to cyber bullying decreases when life satisfaction and social support increase. Secondary school students exposed to peer bullying and cyberbullying were found to have higher levels of anxiety and depression than those who display peer bullying and cyberbullying behavior (Chin, 2011; Johnson, 2011). Victims of both types of bullying reported that they have problems that affect their psychological health negatively, such as anxiety and depression. In addition to those, it has been determined that students exposed to cyberbullying tend to move away from school, their academic success decreases, they experience intense loneliness and are excluded from the group of friends (Johnson, 2011). Besides, it may be possible for them to transfer the school violence to out-of-school areas through cyber bullying and reach to wider masses on the internet (Trachtenbroit, 2011).

Significance of the Study

As stated that the peer bullying experiences that students display and experience in social environments continue in the virtual environments, peer bullying and cyber bullying are the continuation of each other, in other words (Hines, 2011). Also, they are separate phenomena, but in terms of the negative social and psychological conditions, they show similar characteristics (Brown, 2011). That students who tend to bully at school continue this tendency in cyber context and the victimization of students who are bullied in the school continue in the cyber environment is thought to take place in a linear way. On the other hand, that those who tend to bully in school are exposed to bullying in cyber space and those who are exposed to bullying at school attempt to bully in the cyber context indicates the cyclicity to be considered. As a matter of fact, the tendency to display bullying behavior and exposure to bullying in this relational context can be intertwined in both face to face communication and cyber communication. This situation brings with it the difficulty of determining the limits of bullying attitudes and behaviors. It is necessary to evaluate the experiences of bullying, that of bullying itself and exposure to it, in a holistic way and from a triple framework-bully, victim and bully-victim. In this study, it is aimed to examine to what extent peer bullying and cyberbullying tendency and victimization are related.

Purpose of the Study

The main purpose of this study was to examine whether students who show tendency to peer bullying involve in bullying behaviors outside the school environment, i.e, in a virtual context, and whether peer bullying victimization continue in the cyber environment within a holistic way of evaluation. Therefore, in this study, the relationship between peer bullying tendency and victimization and cyberbullying tendency and victimization of cyberbullying among middle school students are examined.

The research questions that are expected to be answered for these purposes are as follows:

1. What is the level of peer bullying tendency and victimization of students?
2. What is the level of cyberbullying tendency and victimization of cyberbullying of students?
3. Is there a significant relationship between students' tendency to peer bullying and cyberbullying?

- a. Is there a significant relationship between sub-dimensions of peer bullying tendency which are negative reflections, lack of emotional sharing, self-justification, making others upset, use of force to others, remain insensitive and the tendency of cyberbullying?
4. Is there a significant relationship between students' tendency to peer bullying and victimization of cyberbullying?
 - a. Is there a significant relationship between sub-dimensions of peer bullying tendency which are negative reflections, lack of emotional sharing, self-justification, making others upset, use of force to others and remain insensitive and victimization of cyberbullying?
 5. Is there a significant relationship between students' victimization of peer bullying and cyberbullying tendency?
 - a. Is there a significant relationship between cyberbullying tendency and peer bullying sub-dimensions of peer bullying which are scare/intimidation, mockery, open attack, relational attack and harm to personal belongings?
 6. Is there a significant relationship between students' victimization of peer bullying and cyberbullying?
 - a. Is there a significant relationship between victimization of cyberbullying and victimization of peer bullying sub-dimensions which are intimidation, intimidation, mocking, open attack, relational attack and harm to personal belongings?

Method

Research Design

In this study, the relationships between variables -peer bullying tendency and victimization and cyberbullying tendency and victimization of cyberbullying- were examined. Therefore, this study was designed by relational research design which is one kind of quantitative research. In relational studies, it is aimed to determine and observe the quantity and direction of relationships between variables (Fraenkel, Wallen and Hyun, 2010).

Participants

It is important that participants should be selected with equal gender representation among the ones who are between 11 and 15 years and estimated to be peer and cyber-bullied so a total of 1080 students [529 males (49%) and 551 females (51%)] participated in this study. 13.9% (n=150) of the sample

was fifth, 32.8% (n=354) was sixth, 26% (n=281) was seventh, 27.3% (n=295) was eighth graders. In addition, the ages of the participants ranged between 11-15 and mean of age was 12.78 (SD=1.11).

Instruments

Demographic Information Form

Demographic Information Form composed by the researchers was used to obtain demographic data about the participants. In Demographic Information Form, there are questions about students' gender, age, class level, parents' education level, monthly income status of their families, having computers connected to the internet at home, places they connected to the internet, tools connected to the internet, and daily average internet usage periods. The form does not contain any questions that could reveal identity of participants in accordance with Scientific Ethics and in order to get realistic answers from the students.

Peer Bullying Tendency Scale (PBTS)

Validity and reliability studies of Peer Bullying Tendency Scale, which is developed by Dölek (2002) were conducted in a sample of 440 students, 252 of whom were female and 188 of whom were male. The construct validity of the scale was examined by exploratory factor analysis (Varimax Rotation) and it was found that the scale had a six-factor structure. The scale items require replies including four options which are Never Agree-Disagree-Agree-Strongly Agree. For the reliability analysis of the scale, lower and upper quarters, item analysis and test-retest analyses were used. The independent samples t test between the lower and upper quarters showed that the items in the dimensions were significantly differentiated from the total of the scale. Also, test-retest continuity coefficient was calculated. The scale was applied to 24 students at 2-week intervals and the relationships between two applications were calculated with Pearson correlation coefficient for the dimensions of the scale. Coefficients were found respectively; .47 for the total of the scale; .41 for negative reflection sub-dimension; .69 for the self-justification sub-dimension and .55 for remain insensitive sub-dimension.

Peer Bullying Victimization Scale (PBVS)

The items of this scale adopted by Gültekin and Sayıl (2005) confirmed five factors as a result of the Promax Rotation factor analysis conducted in the context of the principal component analysis. These factors were named as "intimidation, open attack, mockery, relational attack, and harm to personal

belongings". For the reliability studies of the scale, Cronbach Alpha internal consistency coefficients were calculated for each factor. The Cronbach Alpha internal consistency coefficient of the whole scale was .86, .73 for the intimidation factor, .72 for the open attack factor, .68 for the mockery factor, .72 for the relational attack factor, and .67 for the harm to personal belongings. Criterion validity was examined to determine whether the scores obtained from the scale differentiate the exposure to peer bullying according to the students' reports. As a conclusion, it is decided that this scale is valid and reliable.

Cyberbullying Tendency Scale (CBTS)

Cyberbullying Tendency Scale developed by the researchers consists of 17 items. The scale was developed on a five-point Likert scale to measure the tendency of cyberbullying including "Never - Rarely - Sometimes - Mostly - Always" response options. Exploratory factor analysis was used to test the construct validity of the scale. Cronbach's Alpha analysis were used to calculate the internal consistency coefficient and Pearson correlation technique was used to find the item-total correlation and test-retest reliability coefficient. The upper and lower 27% means of the scale were compared with t test.

Content validity

During the development of the scale, the related literature was examined in order to determine the cyberbullying attitudes and behaviors that the students encountered and items containing the tendency of cyberbullying were formed in line with the data obtained from the literature. A total of 54 items in the item pool were evaluated by academics and experts from the fields of Educational Sciences, Psychology, Guidance and Psychological Counseling and Turkish Language and Literature. Based on the opinions of academics and experts, items with the same or similar meaning were eliminated; necessary corrections were made to make sure that the expressions were clear and understandable. At the final stage, it was decided that the scale would consist of a total of 17 items. This form was applied to 264 secondary school students.

Construct validity

In order to test the construct validity of the scale, exploratory factor analysis technique was used in the context of principal component analysis. Before the exploratory factor analysis, sampling suitability and Barlett Sphericity tests were run. In order for the data to be suitable for factor analysis, KMO is higher than .60 and Barlett Test should be significant (Büyükoztürk, 2011). KMO sampling coefficient of the scale was .880 and Barlett Sphericity

test χ^2 value was found to be 2164.28 ($p < .00$). When the component matrix of the scale was examined, it was observed that all items were loaded under the first factor. This single factor explained 41.46% of the total variance. At the same time, the breaking point on the scree plot was examined and the scale showed a single-factor structure from the breaking point. Factor loads under a single factor range from .50 to .81.

Reliability

Reliability of the scale was calculated with internal consistency reliability (Cronbach Alpha) and test-retest methods. Cronbach Alpha internal consistency coefficient for the whole scale was found to be .90. The internal consistency reliability coefficient obtained with split-half method was calculated as .91. Besides, in order to determine the reliability coefficient by test-retest method, the scale items were re-applied to the first group after four weeks. The test-retest reliability coefficient of the scale at the end of the second application was found to be .66.

Item analysis

The item-total correlations of the Cyberbullying Tendency Scale were compared with the item scores of the lower 27% and upper 27% groups. For all items in the scale, item-total correlations ranged from .45 to .73 and t-values were significant ($p < .001$). This shows that the scale has a distinctive feature. Based on the validity analysis, it can be concluded that the items of the scale have a high validity and they measure the same attitudes and behaviors.

After all, it was decided that Cyberbullying Tendency Scale could be used as a valid and reliable measurement tool based on results of exploratory factor analysis for the construct validity, psychometric findings obtained from Cronbach's Alpha, split-half method, test-retest reliability and item discrimination analyzes.

Cyber Victimization Scale (CVS)

The construct validity of the scale developed by Arıcak, Tanrıku and Kınay (2012) was examined by exploratory factor analysis and it was observed that the scale had a single-factor structure. The Kaiser-Meyer-Olkin sample suitability value was .882 and the Bartlett Sphericity Test Chi-Square value was 4374.93 ($p < .05$). At the same time, when the breakpoint on the scree plot is examined, it is seen that the scale has a single-factor structure. This single factor explained 30.17% of the total variance. Factor loads of items under a single factor range from .43 to .67. It is accepted that these load values

are acceptable values for one factor. Cronbach's Alpha coefficient for the whole scale was .89 and the test-retest reliability coefficient was .75 ($n=96$). The scale consists of 24 items and is answered on a dual (yes and no) scale. "No" is calculated for one point and "Yes" is calculated for two points. Thus, the lowest score that can be obtained from the scale is 24 and the highest score is 48. High scores indicate the high level of cyber victimization.

Data Analysis and Procedure

Data collection tools were applied to 1080 students (559 females and 521 males) attending middle schools in various districts of Istanbul. Before application of the scales, necessary permissions were obtained from Istanbul Provincial Directorate of National Education. The researchers participated in all the applications in different schools and the students were informed about the research topic and the scale instructions were read.

In this study, SPSS 22 program was used for data analysis. Statistical techniques and tests appropriate to the dataset and research questions were used in the analysis of the data obtained from the scales. In addition to descriptive statistical analysis, Pearson Product-Moment Correlation Analysis, independent sample t-test and one-way ANOVA were used. In order to test the significant difference between the groups after ANOVA, Bonferroni multiple comparison test which is one of the Post Hoc Analysis was performed. In order to evaluate the results of the analyzes, $p=.05$ level was accepted as critical value.

Findings

First, participants' demographic variables were described and then differences of peer bullying, cyberbullying and both victimization types were addressed according to gender and grade level. Furthermore, based on research questions the relationships between peer bullying, cyberbullying and both type of victimizations were analyzed.

Demographic Results

In this study, 51% of the participants were female and 49% of them were male. Considered by grade level, 13.9% of participants attended 5th grade, 32.8% of them attended 6th grade, 26% of them attended 7th grade and 27.3% of them attended 8th grade. In addition to these, 71.3% of participants had computers connected to the Internet while the rest did not have. Besides 71.9% of participants connected to the Internet at home, 4.3% of them at school, 7.7% of them at cafés. The tool used mostly to connect to the Internet

was a personal computer (PC). Participants also connected to the Internet by laptop (29.3%), mobile phone (13.2%) and tablets (6.5%). The participants reported that the duration of daily activities on the Internet 0-2 hours a day. The demographic information of the participants was presented in Table 1.

Table 1. Demographic Information of Participants

		n	%	Cumulative %
Participants	Female	551	51	51
	Male	529	49	100
Grade level	5 th	150	13.9	13.9
	6 th	354	32.8	46.7
	7 th	281	26	72.7
	8 th	295	27.3	100
Having computers connected to Internet	Yes	770	71.3	71.3
	No	310	28.7	100
Places where connected to Internet	At home	777	71.9	71.9
	At school	46	4.3	76.2
	At cafe	83	7.7	83.9
	Other places	174	16.1	100
Tools which connected to Internet	PC	551	51.0	51.0
	Laptop	316	29.3	80.3
	Mobile phone	43	13.2	93.5
	Tablet	70	6.5	100
Duration of daily activities on Internet	None	63	5.8	5.8
	0-2 hour	684	63.4	69.2
	2-4 hour	222	20.6	89.7
	4 + hour	111	10.3	100

Students' Peer Bullying Tendency and Peer Bullying Victimization

The mean score of peer bullying tendency of the students participating in the study was 46.31 (SD=12.07) and the mean score of peer bullying exposure was 10.20 (SD=10.98). Peer bullying tendency and peer bullying exposure percentages were determined based on the lowest cut-off point that can be obtained from the scales in which peer bullying tendency and victimization of peer bullying were examined. According to this, 30.8% (n=333) of the students have the tendency to peer bullying, while 80.1% (n=865) were exposed to peer bullying.

Students' Cyberbullying Tendency and Cyberbullying Victimization

The mean score of cyberbullying tendency of students was 20.33 (SD=7.15) and the mean score of cyberbullying was 26.74 (SD=4.25). Cyberbullying tendency and exposure to cyberbullying percentages of students were determined based on the lowest score that can be obtained from the scales in which cyberbullying tendency and cyberbullying were examined.

Accordingly, 47.5% of students (n=513) have the tendency to cyberbullying, while 54.8% (n=592) were exposed to cyberbullying.

The Difference Between Females and Males According to Peer Bullying Tendency and Peer Bullying Victimization

The results of peer bullying and its victimization differences according to gender has shown in Table 2. There was a significantly differences between female and male students considering peer bullying tendency. Females' peer bullying tendency level was lower than male students ($t_{(1078)}=-7.83, p=.00$). Similarly, females' victimization level of peer bullying was significantly lower than male students' victimization level ($t_{(1078)}=-2.41, p=.02$).

Table 2. Results of Independent Samples *t* Test for Peer Bullying and Victimization according to Gender Differences

		n	\bar{X}	SD	SEM	<i>t</i>	df	<i>p</i>
Peer Bullying	Female	551	43.57	11.63	.50	-7.83	1078	.00
	Male	529	49.17	11.87	.52			
Victimization of Peer Bullying	Female	551	9.41	9.70	.41	-2.41	1078	.02
	Male	529	11.02	12.14	.53			

The Difference Between Females and Males According to Cyberbullying Tendency and Cyberbullying Victimization

There were also significant differences between female and male students' cyberbullying tendency. The results were presented in Table 3.

Table 3. Results of Independent Sample *t* Tests for Cyberbullying and Victimization according to Gender Differences

		n	\bar{X}	SD	SEM	<i>t</i>	df	<i>p</i>
Cyberbullying	Female	551	19.22	4.65	.20	-5.26	1078	.00
	Male	529	21.48	8.90	.39			
Victimization of Cyberbullying	Female	551	26.68	4.07	.17	-.48	1078	.63
	Male	529	26.80	4.44	.19			

Accordingly, male students' cyberbullying level was significantly higher than females. On the other hand, there was not any significant differences between females and males with regard to victimization of cyberbullying.

The Difference Between Students' Grade Levels According to Peer Bullying Tendency and Peer Bullying Victimization

As presented in Table 4, there was a significant difference between the tendency of peer bullying and victimization of peer bullying according to the grade level of the participants [respectively, $F_{(3,1076)}=3.28, p=.02$;

$F_{(3,1076)}=4.16, p=.00$]. Bonferroni multiple comparison test was performed to test the significant difference in terms of the participants' grade levels. As can be seen in Table 4, while fifth-grade students tended to have significantly less peer bullying than sixth and eighth-grade students, sixth grade students were exposed to more peer bullying significantly than the other graders.

Table 4. Results of One-Way ANOVA for Peer Bullying and Victimization According To Students' Grade Level Differences

		n	\bar{X}	SD	SEM	F	df	p
Peer Bullying	5 th	150	43.71	12.55	1.02	3.28	1079	.02
	6 th	384	46.86	12.51	.67			
	7 th	281	45.99	11.44	.68			
	8 th	295	47.28	11.72	.68			
	Total	1080	46.31	12.07	.37			
Victimization of Peer Bullying	5 th	150	9.03	11.08	.91	4.16	1079	.00
	6 th	384	11.87	12.33	.66			
	7 th	281	9.52	10.47	.62			
	8 th	295	9.43	9.41	.55			
	Total	1080	10.20	10.98	.33			

The Difference Between Students' Grade Level according to Cyberbullying Tendency and Cyberbullying Victimization

Table 5. Results of One-Way ANOVA for Cyberbullying and Victimization According to Students' Grade Level Differences

		n	\bar{X}	SD	SEM	F	df	p
Cyberbullying	5 th	150	19.29	5.30	.43	3.86	1079	.00
	6 th	384	20.64	7.41	.39			
	7 th	281	19.56	4.47	.27			
	8 th	295	21.20	9.29	.54			
	Total	1080	20.33	7.15	.22			
Victimization of Cyberbullying	5 th	150	25.67	3.68	.30	4.83	1079	.00
	6 th	384	26.71	3.96	.21			
	7 th	281	26.77	4.17	.25			
	8 th	295	27.28	4.82	.28			
	Total	1080	26.74	4.25	.13			

As presented in Table 5, both cyberbullying tendency and cyberbullying victimization significantly differed according to the grade level of the students [respectively, $F_{(3,1076)}=3.86, p=.009$; $F_{(3,1076)}=4.83, p=.002$]. As a result of the one-way ANOVA, Bonferroni multiple comparison test was used because of the significant difference in cyberbullying tendency and cyberbullying victimization between grade levels and the results were given in Table 5. According to this, it was found that the eighth-grade students had tendency to cyberbullying significantly more than the fifth and seventh grade students.

Also, it was found that the students who were in the fifth grade were exposed to cyberbullying significantly less than the students who were in the sixth, seventh and eighth grade.

Relationships Between Peer Bullying Tendency, Cyberbullying Tendency, Victimization of Peer Bullying and Victimization of Cyberbullying

In this part, peer bullying tendency and cyberbullying tendency, victimization of peer bullying, victimization of cyberbullying, and relationships between the sub-dimensions of the tendency of peer bullying, sub-dimensions of peer bullying victimization, tendency of cyberbullying and its victimization were examined. The findings obtained were presented below.

Table 6. The Relationship Between Participants' Peer Bullying Tendency, Cyberbullying Tendency, Victimization of Peer Bullying and Victimization of Cyberbullying

		Peer Bullying Tendency	Victimization of Peer Bullying
Cyberbullying Tendency	r	.45	.23
	p	.00	.00
Victimization of Cyberbullying	r	.28	.32
	p	.00	.00
	N	1080	1080

There was a moderate significant positive correlation between students' peer bullying tendency and cyberbullying tendency ($r=.45, p=.00$). Accordingly, as the tendency of peer bullying increases, so does the tendency of cyberbullying (Table 6). Findings of relationships between peer bullying victimization and cyberbullying victimization of students were presented in Table 6. There was a moderate positive correlation between students' victimization of peer bullying and cyberbullying ($r=.32, p=.00$). As peer bullying victimization increases, so does cyberbullying victimization. There was a low positive significant correlation between students' exposure to peer bullying and cyberbullying tendency ($r=.23, p=.00$). Based on this finding, students who are exposed to peer bullying may tend to cyberbullying. Also, correlations between peer bullying tendency and cyberbullying victimization were examined. There was a low positive correlation between students' tendency to peer bullying and their exposure to cyberbullying ($r=.28, p=.00$). As students' tendency to peer bullying increases, their exposure to cyberbullying increases.

Table 7. The Relationship Between Participants' Cyberbullying Tendency, Victimization of Cyberbullying and Sub-Dimensions Peer Bullying Tendency

		NR	LES	SJ	UO	FO	RI
Cyberbullying Tendency	r	.32	.15	.20	.43	.42	.09
	p	.00	.00	.00	.00	.00	.00
Victimization of Cyberbullying	r	.21	.08	.17	.25	.25	.03
	p	.00	.00	.00	.00	.00	.27
	N	1080	1080	1080	1080	1080	1080

Note. NR: Negative reflection, LES: lack of emotional sharing, SJ: self-justification, UO: to upset others, FO: to force to others, RI: remain insensitive.

Relationships between sub-dimensions of peer bullying tendency and cyberbullying tendency and victimization of cyberbullying were examined (Table 7). There were significant correlations between students' cyberbullying tendency and sub-dimensions of peer bullying, negative reflection ($r=.32$, $p=.00$), lack of emotional sharing ($r=.15$, $p=.00$), self-justification ($r=.20$, $p=.00$), to upset others ($r=.43$, $p=.00$), to force to others ($r=.42$, $p=.00$), remain insensitive ($r=.09$, $p=.00$). There were significant correlations between students' exposure to cyberbullying and sub-dimensions of peer bullying exposure, negative reflection ($r=.21$, $p=.00$), lack of emotional sharing ($r=.08$, $p=.00$), self-justification ($r=.17$, $p=.00$), to upset others ($r=.25$, $p=.00$), to force to others ($r=.25$, $p=.00$). There was no significant relationship between remain insensitive sub-dimension of peer bullying tendency and being exposed to cyberbullying ($r=.03$, $p=.27$).

Table 8. The Relationship Between Participants' Cyberbullying Tendency, Victimization of Cyberbullying and Sub-Dimensions of Peer Bullying Victimization

		IN	MO	OA	RA	DPB
Cyberbullying Tendency	r	.27	.16	.15	.19	.18
	p	.00	.00	.00	.00	.00
Victimization of Cyberbullying	r	.28	.24	.21	.30	.28
	p	.00	.00	.00	.00	.00
	N	1080	1080	1080	1080	1080

Note. IN: intimidation, MO: mock, OA: open attack, RA: relational attack, DPB: damage to personal belongings.

Relationship between sub-dimensions of peer bullying victimization and cyberbullying victimization were also examined. There were positive significant relationships between exposure to cyberbullying and sub-dimensions of exposure to peer bullying, intimidation ($r=.28$, $p=.00$), mock ($r=.24$, $p=.00$), open attack ($r=.21$, $p=.00$), relational attack ($r=.30$, $p=.00$) and

damage to personal belongings ($r=.28, p=.00$). Analyzes on the relationships between the sub-dimensions of exposure to peer bullying and cyberbullying tendency showed that there was a positive correlation between cyberbullying tendency and sub-dimensions of exposure to peer bullying, intimidation, mocking, open attack, relational attack and damage to personal belongings (respectively, $r=.27, p=.00$; $r=.16, p=.00$; $r=.15, p=.00$; $r=.19, p=.00$; $r=.18, p=.00$).

Discussion

This section discusses and interprets findings on peer bullying tendency and peer bullying victimization and cyberbullying tendency and cyberbullying victimization. The relationships between these variables are examined and discussed one by one and their reflections are compared with the findings of the other studies. It is also important to note that peer bullying attitudes and behaviors is defined as “tendency” by integrating students’ intentional, continuous and damaging attitudes and behaviors. Likewise, cyberbullying attitudes and behaviors are also expressed as “tendency”.

Peer bullying has been an important and widespread problem that students have experienced in schools since the 1970s (Olweus, 1993). In recent years, with the increase in the use of digital technology, bullying experiences have been transferred to the virtual environment and has become a problem conceptualized as cyberbullying by researchers (Belsey, 2006). While frequency of peer bullying behaviors among students varies between 10% and 40%, frequency of exposure to peer bullying varies between 5% and 45% (Giovazolias, Kourkoutas, Mitsopoulou and Georgiadi, 2010; Rech, Halpren, Tedesco and Santos, 2013; Spriggs, Iannotti, Nansel and Haynie, 2007). In studies which explore prevalence of cyberbullying, it is seen that while prevalence of cyberbullying behaviors ranged between 3% and 30%, exposure to cyberbullying ranged between 10% and 35% (Arıcak et al., 2008; Englander, 2012; Li, 2006; Serin, 2012; Williams and Guerra, 2007). On the other hand, according to the findings obtained from this study, 30.8% of the students had tendency to peer bullying and 80.1% reported that they were exposed to peer bullying. However, 47.5% of the students stated that they tend to cyberbullying and 54.8% stated that they were exposed to cyberbullying. These findings indicate that bullying in both types and situations (tendency and exposure) is quite common among middle school students whether it is recorded or observed by teachers or school administrators. As other studies also exhibit that

bullying is happening with an increasing trend, it is crucial to take precautions. When that presenting bullying attitudes and behaviors and exposure to these situations can affect the whole school is taken into consideration, students who are not involved in bullying experiences witness this problem and may be affected by the environmental conditions.

When discussing the findings obtained in the study, another issue to be considered is whether gender is in a distinctive position about peer bullying or cyberbullying tendency and the cases of victimization related to them. When peer bullying tendency and peer bullying exposure are evaluated in terms of gender, male students show more peer bullying attitudes and behaviors than female students. It is also observed that male students are more often exposed to peer bullying than female students. (Espelage, Green and Polanin, 2011; Karaman, Kepenekçi and Çinkır, 2006; Liang, Flisher and Lombard, 2007). Similar to the findings in the literature, the findings of this study show that male students tend to attempt and are exposed to peer bullying more than female students, which is consistent with the findings of the studies (Besag, 1995; Burnukara, 2009; Olweus, 1996) focusing on gender variable. When students' cyberbullying tendency and cyberbullying exposure were analyzed in terms of gender, it is seen that male students have more cyberbullying tendency and attempt to cyberbullying behaviors more than female students. Various studies on cyberbullying have reached the conclusion that males display more cyberbullying behaviors than females and are exposed to those behaviors (Arıcak et al., 2008; Erdur-Baker, 2010; Griezel et al., 2012; Li, 2006; Wade and Beran, 2011; Wang, Iannotti and Nansel, 2010; Yılmaz, 2011). The findings of this study reveal that male students are tend to cyberbullying and to be cyberbullied more than female students. However, in some studies, it is observed that exposure to cyberbullying does not differ according to gender (Hinduja and Patchin, 2008; Law et al., 2011). Besides, in some studies, it was concluded that cyberbullying attitudes and behaviors and exposure to cyberbullying do not differ by gender (Hemphill et al., 2011).

When the types of peer bullying are examined in different phenomena such as physical, verbal, relational, direct and indirect ways, it is observed that some students interact with negative and damaging behaviors considered as bullying (Rigby, 2007; Wang, Iannotti and Nansel, 2010). From this damaging and sustained interaction, it is understood that peer bullying is not happening only in the school building; it is happening in the school garden, where

students are all together, on the school way, at streets, at parks and in various areas (Harris and Petrie, 2003). From this point of view, peer bullying is considered only as a school bullying, which leads to a lack of conceptualization of the problem. When virtual environments are perceived as new social interaction zones and learning areas and the relationship between peer bullying and cyberbullying found in this study, it could be inferred that cyber bullying is transformed form of peer bullying. Also, that there is a relationship between peer bullying tendency and cyberbullying tendency supports the idea that certain number of participants who exhibit peer bullying tendency also exhibit cyberbullying tendency. The products of the innovation movements in digital technology are too fast to follow and they are placed in daily lives at a critical level. The use of information and communication tools has become widespread over time, and even preschool children have begun to use these tools to some extent. All these developments in information and communication technology have become an important part of the lives of children and adolescents as well as adults and negative forms of communication and interaction of students in social and physical environments have been digitized. Peer bullying attitudes and behaviors, which have an important place among the negative forms of communication and interaction of school age children, have also found their place in cyber world (Erdur-Baker and Kavşut, 2007; Kowalski, Morgan and Limber, 2012), which is consistent to findings of this study.

Based on the fact that bullying tendency is carried to virtual context by using digital technology products, it is thought that significant relationships of tendency to peer bullying revealed in this study with cyberbullying tendency supports all these conclusions and interpretations. It is mentioned in the literature that cyberbullying is the formation of peer bullying in a virtual environment, a dimension carried from a social environment to a virtual context and continuation of it outside the school (Boulton, Hardcastle, Down, Fowles and Simmonds 2013; Erdur-Baker and Kavşut, 2007; Kowalski, Limber and Agatston, 2008; Mark and Ratliffe, 2011; Menesini, Calussi and Nocentini, 2012; Patchin and Hinduja, 2006; Tettegah, Betout and Taylor, 2006). As a result of this study, it is observed that peer bullying behaviors have potential to continue in cyber world. In this context, correlational findings obtained in the study can be interpreted as students' tendency to present cyberbullying attitudes and behaviors increases, peer bullying tendency increases.

In addition to peer bullying attitudes in general, negative reflection, to

upset others and to force others are considered as indicators of peer bullying tendency and associated with verbal and relational bullying style of peer bullying, which are sub-dimensions of the scale. The persistent negative effects of bullying students' communication with each other over the internet and mobile phones harms verbal and relational interaction (Boulton et al., 2013; Rivers, Duncan and Besag, 2007). Especially, negative reflection of peer bullying tendencies, attempts to upset others for various reasons and desire to force others compose the basis for emergence of cyberbullying behaviors.

Another finding of the study indicates that students exposed to peer bullying in the school environment are at risk of being bullied in the virtual environment. In other words, students who cannot or do not react bullies at school, react them in the virtual environment. Considering characteristics of the students who are exposed to bullying, being physically weak, being insufficient at the point of self-defense, and internalizing bullying with repetitive behaviors as an acceptable situation, it is thought to have potential to cause the victimization that started in the school to continue outside the school. There are studies (Bostic and Brunt, 2011; Dempsey and Storch, 2009; McQuade, Colt and Meyer, 2009; Willard, 2007) which support that finding and point out that peer bullying and peer bullying victimization do not finish at home. In addition to being exposed to cyberbullying and being exposed to bullying not only in the school, its spreading rapidly and lack of a safe place to shelter pose greater risks for the victims (Cappadocia, 2008; Kowalski and Limber, 2007).

However, it is possible for students who tend to peer bullying to be exposed to cyber-bullying. While students tend to exhibit bullying attitudes and behaviors in their interaction and communication with their peers in the school environment, they can be exposed to these behaviors on the internet. In other words, students who are exposed to bullying at school can respond to those who present bullying behaviors in cyber environment through mobile phone and internet without any harm (Feldman, 2011; Holfeld and Grabe, 2012; Li, 2007). This situation, which is evaluated within the bully-victim cycle, has attracted attention because it is the result or continuation of each other. In this study, it is thought that the relationship between students' tendency to bullying in school environment and bullying in virtual environment explains this situation.

Lastly, exposure of students to peer bullying may bring about danger

that they tend to exhibit cyberbullying situations and behaviors. The students who are exposed to peer bullying in the school can respond to their interlocutors on the internet and choose the way of protecting themselves in order to show their strength to others (Aoyama, Utsumi and Hasegawa 2010; Holfeld and Grabe, 2012; Li, 2007; Menesini, Calussi and Nocentini, 2012). The relationship here explains the situation that students who tend to peer bullying may be exposed cyber-bullying.

Conclusion

Conclusively, in this study, there are four significant relationships found: Peer bullying tendency and cyberbullying tendency, peer bullying tendency and cyberbullying victimization, cyberbullying tendency and peer bullying victimization, peer bullying victimization and cyberbullying victimization. Considering the relationships that this study revealed about peer bullying and cyberbullying, it is obvious that these phenomena cannot be explained with a simple causality. The relationship between these two phenomena is shaped by the change in the roles of bully and victim according to the context. The hypothesis of changeability of these roles suggests that the risk of being bully or victimized is likely for all students. Therefore, students who exhibit both victim, bully and bully-victim tendencies are trained for alternative positive interactions and ways of communication to relieve from these negative experiences.

Limitations

This study was conducted with only middle school students, so generalizability of the results is limited to middle school students. In other words, findings and implications could vary at different age groups and education levels. In addition, to observe causes and outcomes of bullying, longitudinal and state-across studies should be designed however this study focuses on certain aspects of bullying (relations between them and cyclicity among them).

Recommendations

Based on the results of the study, suggestions for further scientific research, teachers, psychological counselors, families and students are as follows:

Considering that peer bullying does not only occur in schools, but also in places outside the school, especially on the internet, harmful attitudes and behaviors are spreading rapidly and leaving permanent effects, large-scale or nation-wide studies should be carried out.

The prevalence and application / exposure patterns of the cyberbullying experiences of the students should be investigated in more detail and the results of these experiences should be determined through individual interviews and qualitative studies. Intervention programs should be developed in a manner specific to the negative behavioral diversity after identifying the consecutive negative situations that may arise.

Teachers play an important role in detecting students' bullying experiences as incidents of physical bullying in the school draw more attention. Although teachers' interventions to physical bullying are sufficient, teachers may fail to recognize verbal and relational bullying. In order to prevent bullying, it is recommended that teachers form classroom and school rules together with students, that those who are exposed to bullying can share these experiences with them easily, and that school units where bullying incidents occur most frequently are under control.

It is considered that intervention programs in schools related to peer bullying and cyberbullying are not sufficient. In addition to the seminars on cyberbullying, necessary attempts should be made for that school guidance and psychological counseling services should be considered as a solution. The negative dimensions of cyberbullying and victimization experiences should be conveyed to the students through small and large group activities.

Preventive studies should be carried out in order to prevent from negative experiences related to bullying thanks to- school guidance programs. Intervention efforts should be included in these school guidance programs on understanding, confronting, experiencing, and how to deal with cyberbullying.

Psychological counselors can witness peer bullying experiences of students in person in schools. Considering that peer bullying tends to continue outside the school, they should approach this very carefully by taking into consideration that students can exhibit and be exposed to cyberbullying behaviors. To do this, psychological counselors should organize and follow up individual counseling and group counseling, consultation with parents and teachers, peer peacemaking, psycho-training and intervention studies.

Psychological counselors may conduct interviews with students who present and are exposed to cyberbullying through some counseling approaches. At this point, cognitive approaches (Reality Therapy and Rational-

Emotional Behavioral Intervention Approaches) and short-term counseling approaches can be effective for both victims and bullying behaviors.

Children and young people need to be aware of situations that could pose a threat to the online environment in which cyberbullying occurs. To do this, students should have information about the applications that will enable secure internet use. Students should be advised not to share personal information related to any social networking sites, e-mail accounts, gaming website profiles, and e-school application passwords on the Internet.

Considering that information can be spread rapidly on the internet and may be in the hands of any person, users should be careful while sharing private information, pictures, texts and images. In such cases, families should monitor their children's online experiences and intervene constructively when it is necessary.

Any content on the Internet is never lost. A content that a person shares on the Internet can go out of control of that person and anyone can have the control within seconds. This should be explained to both parents and students as much as necessary and help should be sought at the point of implementation. Parents should use software on their home computers developed for safe internet use and to prevent harmful sites. In addition, computers in the home should be in a location which is seen and is used by everyone to monitor the child.

It should be taken into consideration that students who exhibit cyberbullying behaviors and who are exposed to these behaviors are afraid to share their experiences with their families and teachers. Students who hesitate to be restricted from the use of the Internet try to deal with this situation on their own. Teachers and especially parents should monitor children at this point. It is important that families take a reassuring and protective attitude towards getting information from their children.

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