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CORRESPONDENCE

Ramazan Yirci

✉ ryirci@gmail.com

✉ Kahramanmaraş Sutcuimam
University, Faculty of Education,
Department of Educational Sciences,
46050, Kahramanmaraş, Turkey.

AUTHOR DETAILS

Additional information about the
authors is available at the end of the
article.

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RESEARCH ARTICLE

Examining the Influence of Cyberbullying Perpetration and Victimization among High School Adolescents—Associations with Gender and Grade Level

Ramazan Yirci^{ID} · Turgut Karakose^{ID} · Nedim Malkoc^{ID}

ABSTRACT

Background/purpose – The present study examined adolescent students' cyberbullying behavior and being a victim of cyberbullying specifically exploring potential differences by gender and grade level.

Materials/methods – Based on a cross-sectional survey on 311 adolescent students continuing their high school education in secondary education institutions in Turkey, the study reported their findings as with differences between gender and grade level in cyberbullying and cyber victimization. The research data was obtained by using the Likert-type "Cyberbully/Cyber-victim Scale." Together with statistics, t-test, ANOVA and Tukey's b test were applied the analysis of the collected data.

Results – The study's results suggest a significant difference in the level of students displaying cyberbullying behaviors and being exposed to them within virtual platforms with regards to the gender variable. Male students display cyberbullying behaviors and are also exposed to them in virtual platforms more than female students. In addition, the study's results reveal that female students tend to rumor (gossip) more than male students on virtual platforms. There was also a significant difference in the level of participants performing and being exposed to cyberbullying behaviors on virtual platforms with regards to the grade level variable. According to the analyzed data, students from higher grade levels both perform cyberbullying behaviors more and are more frequently exposed to cyberbullying than students from lower grade levels. In other words, in higher grade levels, students' performance of, and exposure levels to, cyberbullying was found to increase.

Conclusion – This study's findings emphasize the importance of developing prevention and intervention strategies must be developed in order to fight cyberbullying in schools when investigating the level of high school adolescents' bullying of their peers, and the level of those exposed to cyberbullying.

Keywords – Cyberbullying, cyber victimization, social media, adolescents, high school students, internet aggression.

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1. INTRODUCTION

In today's information era, the communication modes and learning experiences of individuals of different age groups are influenced greatly by information and communication technologies. For example; technological devices such as computers and mobile phones that have access to the Internet have enabled social networks between individuals to expand rapidly. These electronic media have become the "must have" in social life, especially for today's teenagers (Barbovschi, Macháčková, & Ólafsson, 2015; Gross, 2004; Hinduja & Patchin, 2009; Karakose, 2007; Kowalski & Limber, 2012; Palfrey & Gasser, 2008; Saricam & Sahin, 2015; Shariff, 2009).

Communication opportunities, which are ever-increasing in the virtual world, have also correspondingly increased the environments where cyberbullying has become prevalent. Together with the benefits of information and communication technologies, there are also disadvantages facing individuals as users due to the risks and threats that virtual platforms can present. Some mobile phone and Internet users have turned these electronic media into a means of threatening others. These electronic and information media can be simply applied in the form of a cyber-threat in the hands of malignant users. This is a real and present threat risk with today's virtual platforms, and affects users across all age groups. Together with making life easier for many individuals, information and communication technology usage can result in undesired outcomes due to the bad intentions of those wishing to harm or disturb, threaten, or harass others. These behaviors, which are means of cyberbullying, cause the target person or persons in question to feel insulted or threatened, and as a result disrupted through the abuse of information and communication technologies.

2. LITERATURE REVIEW

Adolescent behavior is shaped by the relations and events taking place in more than one social environment (e.g., at home, school, or in cyberspace), hence the socioecological perspective provides a directive framework in order to increase or decrease the risk of cyberbullying (Hamm et al., 2015). Different from traditional bullying, cyberbullying has taken on new features with the expansion of information and communication technologies in daily life. Cyberbullying, or electronic bullying, has been frequently discussed in scientific studies, with considerable research having been conducted on the issue. It has been stated that cyberbullying is performed mostly through computers and mobile phones, with aggressors sending humiliating, disparaging, or slur-containing messages and emails to their target victim. Similarly, messages and photographic communications of this kind can be sent by aggressors to their victims through mobile phones. When considered from this point of view, cyberbullying includes a level of intentional psychological violence, with the intent to cause harm to their victim (Dehue, Bolman, & Völlink, 2008; Gozler, 2021; Karakose, 2015; Patchin & Hinduja, 2006; Shieh & Demirkol, 2014).

When we look at the literature, many definitions for cyberbullying have been put forward. For example, cyberbullying is defined as: harassing individuals of the opposite party by sending harmful and threatening messages through information and communication technologies; the intention of taking revenge within the virtual platform or hurting the feelings of others by using ones' technological power; the intentional and harmful use of electronic media by a person or groups against other people; sending harmful and unpleasant messages and photos to other people through the Internet and other media (Inan, Namin, Pogrund, & Jones, 2016; Patchin & Hinduja, 2006; Smith et al., 2008;

Vandebosch & Van Cleemput, 2008; Ybarra & Mitchell, 2004). Moreover, Kowalski, Giumetti, Schroeder, and Lattanner (2014) defined cyberbullying as using electronic communication technologies to bully others. According to these definitions, cyberbullying can be defined as deliberate and aggressive behavior towards an individual or group using digital devices such as mobile phone, computer and tablet. In this context, cyberbullying is conducted intentionally, and includes psychological violence and threat, causing the receiving party to feel victimized due to the hostility and intention of the act.

Cyberbullying causes serious negative mental and psychosocial consequences for children and teenagers, and in such cases, cyberbullying becomes a critical public health problem (Kwan et al., 2020). Because cyberbullying emerges as a public health concern, the scope of cyberbullying is widened to include certain other new behaviors. Also, cyberbullying can be used as a means of scaring and suppressing people in virtual environments (Buelga, Postigo, Martínez-Ferrer, Cava, & Ortega-Barón, 2020). Cyberbullying can negatively affect the motivation of individuals, their relationships with their environment and even their life satisfaction. In addition, victims of cyberbullying can often experience psychological problems. Feelings of sadness, anger, stress, anxiety, fear, shame, as well as temper or rage are the main problems caused. Cyberbullying, which is observed mostly between peer students, is one of the primary issues that needs tackling in today's schools. Studies on this issue suggest that students who are exposed to cyberbullying experience feelings of sadness, hopelessness, and anxiety, and due to these negative emotional impacts students may often feel scared to attend school (Beran & Li, 2005; Dehue et al., 2008; Flaspohler, Elfstrom, Vanderzee, Sink, & Birchmeier, 2009; Karakose, Yirci, Kocabas, 2014; Ortega, Elipe, Mora-Merchán, Calmaestra, & Vega, 2009; Sourander et al., 2010).

Cyberbullying is an issue observed commonly amongst teenagers. One reason for this is due to teenagers easily becoming a part of risk-inherent situations. During this period, teenagers do not think through what kind of potential outcomes a behavior may result in (Bhat, 2008). Cyberbullying can source serious levels of apprehension felt by many adolescents, as well as by their parents, and within the school environment. It is not surprising, therefore, that adolescents can be exposed to cyberbullying and similar peer-related problems due to their ease of access to technological developments such as use of the Internet, smartphones, instant messaging, chat rooms and Internet cafes (Lee, Hong, Yoon, Peguero, & Seok, 2018). There are various factors that are associated with the causes of cyberbullying in schools. However, together with increases in the amount of time that children and teenagers spend using the Internet, the probability of them facing cyberbullying in some form or other also increases (Gardner, 2010). In a study conducted by Celen, Çelik, and Şeferoğlu (2016), it was emphasized that cyberbullying might form a serious threat to children, and that an awareness must be created so that children can use the Internet safely and with conscious awareness of the risks that they may be inadvertently faced with. Another factor that causes students to perform cyberbullying is peer influence. Teenage students tend to regard bullies as being stronger individuals, and may therefore consider them as their role models. For a teenager, being on the "same side" as a bully symbolizes a personal gain in strength and reputation (Salmivalli, 2010). The fact that teenagers want to be like each other, imitate each other, or adopt behaviors with regards to bullying, makes it all the more difficult and challenging for schools to prevent cyberbullying.

From a review of the literature, it is understood that cyberbullying/victimization cases are timely study fields in which cyberbullying is analyzed based on many variables such as gender, school grade, socioeconomic level, and Internet addiction. As a variable, gender has

become a primary focus of many studies because of its relation to cyberbullying. In studies examining the relations between gender and cyberbullying, it is apparent that male children are more involved in the cyberbullying of others when compared to female children (Cicioglu, 2014; Serin, 2012). On the other hand, some studies have reported the opposite, with females cyberbullying others more than males (Keith & Martin, 2005; Semerci, 2015). In addition, various studies have concluded that no meaningful difference was found between male and female children exhibiting cyberbullying behaviors (Ozdemir & Akar, 2011; Peker, Eroğlu, & Çitemel, 2012; Yaman, Karaküllah, & Dilmaç, 2013).

Researchers have published various results from their studies on the relation between school grade and bullying behaviors. For instance, Williams and Guerra (2007) concluded that a sound relation was found between grade and cyberbullying, whilst Ayas and Horzum (2012) found that the levels of displaying cyberbullying behaviors varied due to primary school students' grades, and that the level of cyberbullying increased in line with the grade of the students. In contrast, Ozdemir and Akar (2011) revealed no remarkable relation being found between students' grade and instances of cyberbullying.

It is very difficult for students who face cyberbullying to deal with the perpetrators of such behaviors. The reason for this is that, even if student victims remain physically distant from cyberbullies at school, they are unable to prevent violence aimed at them within virtual platforms, and cyber-aggressors can therefore continue to send disturbing or threatening messages through mobile phones or computers to their target victim. In addition, it has been identified that if students witness cyberbullying in their class, they exhibit behaviors such as "trying to stop such actions" or "helping the victim of such actions" (Kalender, Keser, & Tugun, 2019; Kildow, 2008). In addition, individuals who are exposed to cyberbullying can be ostracized by their friends, and may even break off friendships due to feelings of sadness, stress or the anxiety they may be experiencing. As a result of feeling hopeless about their situation, they may refrain from seeking help from their families or from their school. This intense feeling of loneliness that victimized students undergo can cause them to lose their self-confidence and self-respect. As a result, psychological problems and depressive behaviors can be observed in students having been exposed to instances of cyberbullying (Hinduja & Patchin, 2008; Raskauskas & Stoltz, 2007; Schneider, O'Donnell, Stueve, & Coulter, 2012).

As a result, the academic achievement levels of students exposed to cyberbullying decline, and their physical and mental health can become negatively affected. As cyberbullying cannot easily be prevented, the perpetrators of such behaviors can form extensive gangs, linking-up with others who are prone to violence in performing acts of cyberbullying (Aykac & Bilgin, 2019; Görzig & Frumkin, 2013; Hinduja & Patchin, 2008; Kocabas & Karakose, 2009; Yirci, Karakose, Uygün, & Ozdemir, 2016). Thus, in order for the academic and personal development of students to progress, cyberbullying in schools should, in fact must, be prevented. It is therefore important to prepare appropriate psychoeducational programs to prevent instances of cyberbullying, and to develop preventive measures aimed at decreasing such deviant behaviors (Musu-Gillette, Hansen, Chandler, & Snyder, 2015). However, although the majority of teachers and school administrators are aware that traditional bullying causes major problems within today's schools, few seem aware that students are also threatened and harassed through acts of cyberbullying within today's widespread virtual environments (Beran & Li, 2005; Karakose, 2008; Karakose, Yirci, Uygün, & Ozdemir, 2016). Cyberbullying among adolescents affects many students, and presents a serious problem that needs to be urgently dealt with by

school administrations and educators (Hinduja & Patchin, 2009). Studies regarding this issue express that efforts to fight cyberbullying must be made through the cooperative efforts of school administrators, teachers, students, and also the students' parents (Chan & Wong, 2015; Willard, 2007; Karakose, Polat, & Papadakis, 2021). When adolescents exposed to cyberbullying experience feelings of helplessness, they may seek assistance or social support from others. They would primarily expect to receive social support from their friends, families, as well as from their school's administrators and teachers (Inselöz & Uçanok, 2013). For this reason, school administrators and teachers have a significant responsibility and duty to prevent cyberbullying in schools. Teachers and school administrators can play a crucial role in the prevention of cyberbullying, and need to immediately realize the importance of the issue and act more consciously with regards to cyberbullying. If insufficient action is taken, cyberbullying will no longer remain an issue in schools; inevitably, due to its violent nature, cyberbullying also has a secondary negative impact on other students as well as teachers. Therefore, in order to prevent or reduce cyberbullying in schools, the reasons for and outcomes of cyberbullying should be determined and the necessary deterrent precautions adopted.

When the literature is reviewed, it can be seen that numerous studies have been conducted with high school adolescents on cyberbullying. Likewise, almost all studies conducted in Turkey on this issue have been conducted within general high schools (Anatolian High Schools, Science High Schools, Social Science High Schools, or Vocational High Schools). Therefore, rather than general high schools, the current study was particularly conducted with students attending Sports High Schools in Turkey in order to explore the phenomenon of cyberbullying and the victims of cyberbullying in such schools. Student admission to sports high schools in Turkey differs from that of general high schools, which are conducted through standard multiple-choice or written tests prepared by the Ministry of National Education, with the sole aim to assess the students' knowledge level. However, Sports High Schools in Turkey select their students via performance levels and skills-based testing, which forms a significant difference between sports high schools and general high schools in Turkey. It may be considered that sports high school adolescents should have assimilated the spirit of sportsmanship, developed their critical thinking ability, as well as the ability to balance the emotions involved in both winning and of accepting defeat. As a result, they should be more self-confident and act according to higher ethical codes of conduct (Acat, 2019; Altındas, 2009; Cakici, 2010). Therefore, it is deemed to be of considerable interest to examine the level of cyberbullying and cyber-victimization prevalent within this type of high school. It is assumed that sports helps students to be raised as respectful but free spirited, self-defensive and open-minded individuals, and as such presents an interesting opportunity to analyze the levels of cyberbullying in Turkey's sports high schools.

In the this study, the level of displaying cyberbullying behaviors and being a victim of cyberbullying amongst high school adolescents will be investigated in terms of several variables. Suggestions will also be developed so as to raise awareness in schools about the issue of cyberbullying and to help prevent instances of cyberbullying/victimization in Turkish high schools. The aim of the current study is to examine the level of high school adolescents' bullying of their peers and the level of those exposed to cyberbullying. In line with this purpose, answers to the following research questions were sought:

- RQ1. What are the levels of perpetrating cyberbullying behaviors among high school adolescents within virtual platforms?
- RQ2. Do the levels of perpetrating cyberbullying behaviors among high school adolescents differ by gender and grade level?
- RQ3. What are the cyberbullying exposure levels of high school adolescents within virtual platforms?
- RQ4. Do cyberbullying exposure levels of high school adolescents differ according to gender and grade level?

3. METHODOLOGY

3.1. Participants

The universe of the research consists of 337 students attending sports high schools in Kutahya/Usak in Turkey, and who were studying in their ninth, 10th, 11th, or 12th grades. Simple random sampling technique was used to select students who formed the research population. The representative sample of the population consists of 315 high school adolescents who volunteered to take part in the study. Prior to conducting the study, the consent of the participants was obtained (according to research ethics) after explaining the scope of the study. Then, the students who would participate in the study were determined and requested to complete the questionnaires. Following a preliminary review, four of the participants' submitted questionnaires were excluded from the analysis due to lack of data, and therefore statistical analysis was conducted on a total of 311 completed questionnaires. According to the demographics of the study, 47% of the participants are female ($n = 146$) and 53% are male ($n = 165$). With respect to the students' school grade level, 25% were in Grade 9 ($n = 78$), 24% in Grade 10 ($n = 75$), 25% in Grade 11 ($n = 77$), and 26% in Grade 12 ($n = 81$).

3.2. Instruments and Procedures

This study was designed based on the screening model. The screening model is a study approach that aims to describe a past or previous event exactly the way in which it happened (Karasar, 1999). Accordingly, the high school adolescents' opinions on their state of cyberbullying and cyberbullying victimization were described according to their past and previous states. The study data was collected using the Likert-type "Cyberbully, Cyber-victim Scale," as developed by Ayas and Horzum (2010). The scale consists of two sub-dimensions, "cyberbully" and "cyber-victim," and contains a total of 19 items. Some examples of items of the scale used are: "Taking unauthorized and inappropriate images; conveying sexual messages to others and disturbing them; threatening via internet or phone; spreading negative information about others in a virtual platforms etc". The 5-point, Likert-type scale uses the following anchors; 5 = *always*, 4 = *often*, 3 = *sometimes*, 2 = *rarely*, and 1 = *never*. Also, under the "cyberbully" and "cyber-victim" dimensions are three sub-dimensions, titled "sexual cyberbullying," "prevention and harming," and "rumor," that describe the type of bullying performed in the virtual environment. With a total of 19 items, 2 dimensions and 3 sub-dimensions, the scale was tested separately for each dimension. According to the results of Confirmatory Factor Analysis (CFA) for the cyberbully dimension, the coherence index was determined as being $X^2 = 508.86$ ($SD = 146$, $p = .00$), $X^2 / SD = 3.47$ RMSEA = .074, GFI = .89, AGFI = .86, CFI = .90, NFI = .87, and NNFI = .88. the coherence index resulting from CFA for the cyber-victim dimension was $X^2 = 459.39$ ($SD = 149$, $p = .00$), $X^2 / SD = 3.08$, RMSEA = .068, GFI = .90, AGFI = .88, CFI = .93, NFI = .90, and NNFI = .92. It was not required to make any

corrections in terms of applied CFA modification suggestions. As a result of the CFA for the cyberbully/victim scale, the model was found to be theoretically and statistically appropriate (Ayas & Horzum, 2010). While the Cronbach's alpha coefficient of the cyberbully sub-dimension of the scale for test repetition, test reliability was found to be .75, it was .77 for the cyber-victim sub-dimension, and .82 for the whole scale. These calculated values indicate that the scales used were in the spectrum of acceptable values for psychometric scales.

3.3. Data analysis

Personal information was utilized in analyzing the collected data, with descriptive statistics used in determining participant opinions, *t*-test was conducted in paired comparison of the participants' opinions, and ANOVA test and Tukey's *b* test were conducted for comparisons of three or more elements. The study's data analysis was conducted using IBM's SPSS software, and with a significance level accepted of .05.

4. RESULTS

The analysis results of the study were evaluated separately for the cyberbully and cyber-victim sub-dimensions of the applied scale. Whether or not any significant differences exist between the students' opinions regarding the two dimensions with relation to their gender or grade level variables were then determined.

4.1. Results for the cyberbully dimension

Results of the *t*-test conducted on the *cyberbully* dimension for the variable of gender are presented in Table 1.

Table 1. Level of displaying cyberbullying behaviors according to gender

<i>Factor</i>	<i>Gender</i>	<i>n</i>	\bar{X}	<i>SD</i>	<i>t</i>	<i>p</i>
Sexual cyberbullying	Female	146	3.11	.486	-3.059	.002*
	Male	165	4.03	.695		
Prevention & harming	Female	146	3.59	.610	.575	.531
	Male	165	3.62	.627		
Rumor	Female	146	4.31	.659	-2.531	.006*
	Male	165	3.74	.666		
Cyberbullying Behavior (Total)	Female	146	3.22	.573	-2.598	.004*
	Male	165	3.88	.514		

* $p \leq .05$ significant

When Table 1 is examined, a significant difference can be seen between the levels of performing cyberbullying behaviors ($t = -2.598$, $p \leq .05$) with regards to "sexual cyberbullying" ($t = -3.059$, $p \leq .05$) and "rumor" ($t = -2.531$, $p \leq .05$) factors in virtual platforms; but there was no significant difference found with regards to "prevention and harming" behaviors ($t = .575$, $p > .05$). According to these results, male students ($\bar{X} = 4.03$) perform "sexual cyberbullying" behaviors within virtual platforms more than female students ($\bar{X} = 3.11$). In addition, it can be seen that female students ($\bar{X} = 4.31$) were observed to perform "rumor" behaviors within virtual platforms more than male students ($\bar{X} = 3.74$). Where cyberbullying behaviors as a total of the scale items are considered, it can be seen that male students ($\bar{X} = 3.88$) perform cyberbullying behaviors more than female students ($\bar{X} = 3.22$).

Table 2. Level of displaying cyberbullying behaviors according to grade

<i>Factor</i>	<i>Grade</i>	<i>n</i>	\bar{X}	<i>SD</i>	<i>F</i>	<i>p</i>
Sexual cyberbullying	9	78	3.51	.695	13.976	.001*
	10	75	3.94	.533		
	11	77	3.71	.612		
	12	81	3.75	.799		
Prevention & harming	9	78	3.75	.506	14.006	.002*
	10	75	3.34	.907		
	11	77	3.78	.758		
	12	81	4.06	.719		
Rumor	9	78	3.78	.429	3.701	.142
	10	75	3.95	.302		
	11	77	3.80	.297		
	12	81	3.42	.421		
Cyberbullying Behavior (Total)	9	78	3.29	.503	2.712	.246
	10	75	3.13	.542		
	11	77	3.15	.521		
	12	81	3.10	.564		

* $p \leq .05$ significant

The levels of displaying cyberbullying behaviors of high school adolescents were compared through an ANOVA test, with the results presented in Table 2. The study's results suggest that the existence of a significant difference between "sexual cyberbullying" in virtual platforms ($F = 13.976$, $p \leq .05$) and "prevention and harming" ($F = 14.006$, $p \leq .05$), according to the grade level of the students ($F = 13.976$, $p \leq .05$). Tukey's b test was used in order to determine by which grade level this difference was caused. According to the analysis results, Grade 10 students ($\bar{X} = 3.94$) perform "sexual cyberbullying" behaviors in virtual platforms more than Grade 9 students ($\bar{X} = 3.51$), and Grade 12 students ($\bar{X} = 4.06$) perform more "prevention and harming" behaviors than Grade 10 students ($\bar{X} = 3.34$). There were no statistically significant differences found between "rumor" ($F = 3.701$, $p > .05$) and performing cyberbullying behaviors ($F = 2.717$, $p > .05$) with regards to grade as the variable.

4.2. Results for the cyber-victim dimension

Results of the *t*-test conducted on the *cyber-victim* dimension for the gender variable are presented in Table 3.

Table 3. Level of being exposed to cyberbullying behaviors according to gender

<i>Factor</i>	<i>Gender</i>	<i>n</i>	\bar{X}	<i>SD</i>	<i>t</i>	<i>p</i>
Sexual cyberbullying	Female	146	3.98	.501	.690	.622
	Male	165	4.01	.492		
Prevention & harming	Female	146	3.31	.618	-2.510	.001*
	Male	165	3.78	.540		
Rumor	Female	146	4.11	.498	-2.412	.003*
	Male	165	3.78	.529		
Cyberbullying Behavior (Total)	Female	146	3.41	.399	.701	.650
	Male	165	3.53	.456		

* $p \leq .05$ significant

According to Table 3, there are statistically significant differences between “prevention and harming” ($t = -2.510$, $p \leq .05$) and “rumor” ($t = -2.412$, $p \leq .05$) with regards to the gender variable. Male students ($\bar{x} = 3.78$) are exposed to more “prevention and harming” within virtual platforms than female students ($\bar{x} = 3.31$). In addition, female students ($\bar{x} = 4.11$) perform “rumor” behaviors within virtual platforms more than male students ($\bar{x} = 3.78$). There were no statistically significant differences found between being exposed to “sexual cyberbullying” in virtual platforms ($t = .690$, $p > .05$) and being exposed to cyberbullying behaviors ($t = .701$, $p > .05$) with regards to gender as the variable.

The states of high school adolescents being exposed to cyberbullying behaviors according to their grade level variable were compared by way of an ANOVA test, and the results are shown in Table 4.

Table 4. Levels of being exposed to cyberbullying behaviors according to grade

<i>Factors</i>	<i>Grade</i>	<i>n</i>	\bar{x}	<i>SD</i>	<i>F</i>	<i>p</i>
Sexual cyberbullying	9	78	3.95	.595	4.841	.511
	10	75	3.98	.591		
	11	77	3.84	.656		
	12	81	3.76	.688		
Prevention & harming	9	78	3.66	.902	14.100	.001*
	10	75	3.88	.877		
	11	77	3.79	.881		
	12	81	4.21	.709		
Rumor	9	78	4.05	.735	3.850	.240
	10	75	4.29	.523		
	11	77	3.57	.620		
	12	81	4.09	.711		
Cyberbullying Behavior (Total)	9	78	3.57	.713	13.880	.001*
	10	75	3.68	.751		
	11	77	3.91	.713		
	12	81	4.08	.693		

* $p \leq .05$ significant

There were statistically significant differences found between the “prevention and harming” behaviors within virtual platforms ($F = 14.100$, $p \leq .05$) and being exposed to cyberbullying behaviors ($F = 13.880$, $p \leq .05$), with regards to the grade level of the high school adolescents. Tukey’s b test was used in order to determine by which grade level this difference was caused. According to the analysis, Grade 12 students are exposed to more “prevention and harming” behaviors ($\bar{x} = 4.21$) than Grade 9 students ($\bar{x} = 3.66$) within virtual platforms. According to the ANOVA test results, which was conducted according to the grade level variable, Grade 12 students ($\bar{x} = 4.08$) are exposed to cyberbullying behaviors within virtual platforms more than Grade 9 students ($\bar{x} = 3.57$). In addition, there were no statistically significant differences found between being exposed to “sexual cyberbullying” behaviors in virtual platforms ($F = 4.841$, $p > .05$) and “rumor” behaviors ($F = 3.850$, $p > .05$), with regards to the grade levels of the participant students.

5. DISCUSSION AND CONCLUSION

The main of the present study was to investigate the levels of displaying cyberbullying behaviors and cyber-victimization of high school adolescents within virtual platforms. According to the analyses of data from the “cyberbully” dimension, there was a significant difference found to exist between the levels of high school adolescents performing cyberbullying behaviors with regards to the gender variable. Male students were found to perform cyberbullying behaviors in virtual platforms more than female students; a result compatible with other studies on this topic. For example, other studies have suggested that male students practice cyberbullying behaviors more than female students (Aricak et al., 2008; Ayas & Horzum, 2012; Brack & Caltabiano, 2014; Li, 2006). Furthermore, Pamuk and Bavlı (2013), in their study, revealed that male adolescents cyberbully more than female adolescents. Kowalski and Limber (2007) stated that females perform cyberbullying behaviors more than males. Some researchers have emphasized that gender-based cyberbullying represents a threat, especially for female teenagers (Mitchell, Wolak, & Finkelhor, 2008). Kristensen and Smith (2003) stated that female students who are exposed to cyberbullying react to this by crying. Salmivalli, Karhunen, and Lagerspetz (1996) emphasized that female teenagers who encounter cyberbullying behaviors feel hopeless in tackling this problem and have difficulty in finding a solution. Some researchers state that people with no or lacking self-confidence, or those experiencing problems in their personal lives perform cyberbullying behaviors more (Hoff & Mitchell, 2009; Smith et al., 2008). Also, according to the results of the current study, a significant difference was found to exist between performing “sexual cyberbullying” and “rumor” behaviors in virtual platforms with regards to gender. This shows that male students perform sexual cyberbullying behaviors in virtual platforms more than female students. Also, there were no significant differences found in the current study in terms of performing “prevention and harming” behaviors with regards to the gender variable.

Levels of performing cyberbullying were examined according to the high school adolescents’ grade levels. A significant difference was found to exist between students performing “sexual cyberbullying” behaviors in virtual platforms and “prevention and harming” behaviors. According to this result, Grade 10 students perform “sexual cyberbullying” behaviors in virtual platforms more than Grade 9 students. Grade 12 students also perform more “prevention and harming” behaviors more than Grade 10 students in virtual platforms. Campbell (2005) stated that as teenagers grow older, they become more informed about computers and that this triggers their cyberbullying experiences. However, in the study carried out by Erişti and Akbulut (2017), it was revealed that the level of being a victim of cyberbullying is at a critical level among high school adolescents when compared to university students. Hoff and Mitchell’s (2009) study on this subject showed that teenagers do not inform school officials (e.g., their teachers) about the bullying they encounter. Perren et al. (2012) stated that seeking help from parents or school officials is resorted to in tackling with cyberbullying in schools. In addition, there were no significant differences found to exist in the current study between “rumor” and performing cyberbullying behaviors in virtual platforms with regards to the grade level variable.

According to the analyses performed for the “cyber-victim” dimension, there were no significant differences found to exist between “prevention and harming” behaviors in virtual platforms and “rumor” behaviors with regards to the gender variable. According to the data, male students are exposed to “prevention and harming” more than female students.

However, in their study, Williams and Guerra (2007) found no differences in the participation in cyberbullying behaviors between females and males. In a study conducted by Hamm et al. (2015), the results indicated the most common cause of cyberbullying to be relationship problems, and that female children suffered from bullying more than male children. In addition, Li (2007) and Mesch (2009) both stated that the majority of cyberbullying victims were found to be female teenagers. Some studies put forward that victimized female students tend to interiorize the situation and to seek social help, while male students tend to externalize the situation (Causey & Dubow, 1992; Karakose & Kocabas, 2009; Kristensen & Smith, 2003; Sekerci & Canpolat, 2014). Another study suggested that when students are exposed to cyberbullying behaviors, they tend to avoid the problem or seek help from their friends (Mora-Merchán, 2006). According to results of the current study, female students tend to perform “rumor” behaviors in virtual platforms more than male students. Agatston, Kowalski, and Limber’s (2007) study resulted in similar findings and suggested, with females performing cyberbullying more than males. Another study emphasized that females perform cyberbullying behaviors in order to seek revenge (Smith et al., 2008), whilst some claim that teenagers tackle cyberbullying by “blocking” bullies and steering clear of Internet chat rooms (Juvonen & Gross, 2008). In this study, there are no significant differences between female high school adolescents exposed to cyberbullying behaviors and performing them with regards to gender. However, some studies have demonstrated that male students become more annoyed by cyberbullying behaviors than do female students (Hoff & Mitchell, 2010). In a study by Huitsing and Veenstra (2012), it was found that not only the victims, but also the cyberbullies themselves seek and find support in the class. Some studies pointed out that both female and male victims do not know who performed the cyberbullying behaviors against them (Dehue et al., 2008; Li, 2008; Slonje & Smith, 2008).

The levels of high school adolescents being exposed to cyberbullying were examined in the current study according to their school grade level, and a significant difference was found to exist between the “prevention and harming” behaviors in virtual platforms and being exposed to cyberbullying. According to the results, Grade 12 students are exposed to “prevention and harming” behaviors more in virtual platforms, and are also exposed to cyberbullying behaviors more than Grade 9 students. However, some researchers have emphasized that young teenagers are more vulnerable to cyberbullying, being less experienced with the Internet, can thereby surrender to threats more easily, and are therefore more exposed to cyberbullying (Akbulut, Sahin, & Eristi, 2010; Dehue et al., 2008; Williams & Guerra, 2007). Some studies have stated that teenagers tend to share the cyberbullying experience with their friends rather than with their parents (Dehue et al., 2008; Juvonen & Gross, 2008; Patchin & Hinduja, 2006). In another study conducted by Kalender et al. (2019), it was stated that students exposed to cyberbullying mention it to their parents, friends, and to their teachers. Kristensen and Smith (2003) pointed out that teenagers prefer seeking social help against and withdrawing from cyberbullying behaviors; but that as their age advances, they tend to develop more effective solutions in tackling cyberbullying. Another study suggested that a solution that teenagers often adopt in tackling cyberbullying is blocking the bully and keeping away from chat rooms (Juvonen & Gross, 2008; Salmivalli et al., 1996). In addition, the current study found no significant differences existed between students exposure to “sexual cyberbullying” behaviors in virtual platforms and performing “rumor” behaviors. Some studies on this issue put forth that as females grow older, they tend to be less involved in cyberbullying behaviors (Agatston et al., 2007). It

is evident that misusing information and communication technologies, in other words, using them for bad intentions can result in cyberbullying.

It is pointed out that effective preventive and intervention programs must be developed in order to fight cyberbullying in schools (Guo, 2016). With cyberbullying causing harmful effects to children and teenagers in schools, the reasons for and outcomes of cyberbullying should be precisely identified and appropriate precautionary deterrent measures adopted. For this purpose, school administrators and other school officials such as teaching staff should receive the required training in order to increase their awareness of cyberbullying and the most appropriate actions that can be taken in this situation.

Victimized students often feel themselves to be lonely and helpless in their struggle with the problem of cyberbullying. Thus, in order to provide the necessary and appropriate social and psychological support to victimized students, “cyberbullying prevention units” should be established that are directly subordinate to the school’s administration. In all cases of cyberbullying, students should be able to share their concerns direct with the cyberbullying prevention unit at their school without hesitation, and thereby receive the necessary support in helping them to resolve the problem.

Cyberbullying negatively affects the reputation of not only the students involved and their families, but also the reputation of the school itself. In schools where cyberbullying is present, there will always be a chance that students will become involved. Teaching and training activities in schools are carried out within the school-family-environment triangle, meaning that it is crucial to foster school-family-environment collaboration in order to effectively tackle cyberbullying. The primary role of the family here is to enhance their competencies in information and communication technologies and to always openly communicate with their children.

5.1. Limitation and Future Research Guidelines

The current study was limited to the views of students studying at sports high schools in Kutahya/Usak in Turkey. Generalizing the results of the study for all adolescents might not be the right approach; however, this research is thought to contribute to the literature as one of a rare number of studies in this field. In future studies, cyberbullying might be examined according to various sample groups in order to discover the role of friends and classroom norms in virtual environments in the case of cyberbullying.

DECLARATIONS

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Conflicts of Interest The authors declare no conflict of interest.

Ethical Approval The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the Institutional Review Board of Provincial Directorate of National Education, the Republic of Turkey Kutahya Governorship. The participants provided their written informed consent to participate in this study.

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ABOUT THE CONTRIBUTORS

Ramazan Yirci is an Associate Professor at KSU Faculty of Education. Before this position, he worked as a teacher at public and private schools for five years. He received his PhD. degree on educational management. His research interests include teacher training, school management and mentoring in education.

E-mail: ryirci@gmail.com

ORCID ID: <https://orcid.org/0000-0003-4696-7420>

Turgut Karakose, PhD, is Professor of Educational Administration in the Kutahya Dumlupinar University. He is also Editor-in-Chief of Educational Process International Journal. His main research interests include educational leadership and administration, reputation management, school administration, psychology, and human behavior. He has published extensively in leading international journals and also authored books and chapters on education/management.

E-mail: turgut.karakose@dpu.edu.tr

ORCID ID: <https://orcid.org/0000-0003-0346-8154>

Nedim Malkoc is an Associate Professor at the Department of Exercise and Sport Sciences, University of Health Sciences, Istanbul, Turkey.

E-mail: nedimmalkoc82@gmail.com

ORCID ID: <https://orcid.org/0000-0003-4599-3547>

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