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Extended Abstract

Investigating the Relationship between Cyberbullying and Perceived Family Support in Middle-School Students in Relation to Gender, Frequency of Internet Use, and Grade*

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Abstract

Bullying is classified as physical, verbal, and indirect bullying. However, with technology becoming increasingly widespread in human life, the contexts of bullying have recently expanded with the emergence of cyberbullying. Family support, the most important resource of social support for young age groups in particular, is thought to be an important structure in preventing cyberbullying. This study investigates the relationship between perceived family support and cyberbullying, in addition to the levels of cyberbullying and perceived family support according to the demographic characteristics of gender, grade, and frequency of Internet use. The study group is composed of middle school students who are considered at high risk for being involved in cyberbullying. Descriptive and correlational research methods have been adopted in this study, with 223 students from the 5th, 6th, 7th, and 8th grades of three different educational institutions participating in the study. Data have been collected using a personal information form, the Cyberbullying Scale, and the Perceived Social Support Scale. In examining the relationships between variables, the Spearman rank correlation coefficient has been used. In addition, the Kruskal-Wallis and Mann-Whitney U tests have been utilized for comparing average scores. Findings reveal that, regardless of students' gender, as the grade and frequency of Internet use increase, perceived family support decreases and cyberbullying behaviors increase. A moderate and negative correlation has also been determined to exist for students' cyberbullying levels with their perceived levels of family support.

Keywords

Cyberbullying • Perceived social support • Family support • Internet use in children • Middle-school children

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The aggressive attitudes and behaviors (Olweus, 1993, p. 98) that an individual or group intentionally and willingly engages in to harm someone have been defined as bullying in the literature (Smith et al., 2008). However, technological advances and the widespread use of technology in human lives in recent years have brought a new concept of bullying known as cyberbullying (Akbaba & Eroğlu, 2013). Cyberbullying shows itself through youths and adolescents' intense interests, especially in virtual activities such as sharing and messaging (Cho & Yoo, 2016). Aksaray (2011) stated in his literature review that cyberbullying is encountered in studies with frequencies between 9% and 35% and that many countries have reported several problems caused by cyberbullying. Research indicates cyberbullying to have various negative effects on individuals (Hoff & Mitchell, 2009; Ben-Arie, Casas, Frønes, & Korbin, 2014; Patchin & Hinduja, 2006). Individuals who have been exposed to cyberbullying are said to display more psychiatric symptoms (Arıcak, 2009), with cyber victimization pushing individuals into negative life conditions that lead to stress and suicidal tendencies (Hinduja & Patchin, 2008). Therefore, certain measures have been put forward as necessary to take in order to prevent cyberbullying (Beale & Hall, 2007; Olweus, Limber, & Mihalic, 1999). To do this, the possible reasons for this problem must first be identified. This study examines the relationship between cyberbullying and perceived family support, a factor related to cyberbullying as well as an important social-support resource for young age groups (Calvete, Orue, Estévez, Villardón, & Padilla, 2010; Demeray & Malecki, 2003; Park, Na, & Kim, 2014). Studies on cyberbullying and cyber victimization have revealed the importance of family support in eliminating this problem. This study also investigates cyberbullying and perceived family support in detail based on variables such as gender, grade, and frequency of Internet use.

Cyberbullying

Technology is a tool that facilitates human life and provides speed and effectiveness in performing daily tasks. Although technology as a tool can be used for good purposes, negative actions can be said to be performable with technology, and thus social problems can arise (Surry & Farquahr, 1997). One of the social problems caused by technology is cyberbullying. In the literature, cyberbullying is generally defined as the use of technology as a means for individuals or groups to harm others (Belsey, 2007; Calvete et al., 2010; Patchin & Hinduja, 2006; Smith et al., 2008). Individuals whose actions involve cyberbullying are described as cyber perpetrators, while those exposed to such actions are described as cyber victims (Hinduja & Patchin, 2008).

Certain points of similarities and differences exist between traditional bullying and cyberbullying. First of all, the main purpose of both types of bullying is the intent to harm others. These disruptive behaviors are caused by reasons such as jealousy of, hate for, and revenge upon others (Hoff & Mitchell, 2009; Topçu, 2014). In traditional

bullying, physical superiority is the case. In other words, individuals who perform bullying behaviors towards others are generally those with the physical advantage (Aksaray, 2011). However, no need exists for physical superiority in cyberbullying. An individual who intends to commit violent behavior can harm the opposing person with the assistance of the shield of anonymity that technology provides. Thanks to technology, this allows for some harmful behaviors (insults, verbal harassment, sharing of unauthorized personal information) that one cannot perform in normal life. In general, the harmful actions that use technology are writing negative comments about others, sharing personal information about others, and taking control of others' online accounts to misuse them (Arıcak et al., 2008; Bulut & Alcı, 2014; Calvete et al., 2010; Patchin & Hinduja, 2006). When considered in this context, the scope of cyberbullying is seen to be broader than traditional bullying (Çetin, Yaman, & Peker, 2011; Herring, 2004).

Contrary to traditional bullying, the effects of cyberbullying can be different because there is no physical exposure to an action (Watts, Wagner, Velasquez, & Behrens, 2017). Exposure to cyberbullying mostly affects the individuals through social, emotional, and psychological aspects (Şahin, Aydin & Sari, 2012). Schenk and Framouw (2012) found students who were exposed to cyberbullying to have symptoms such as depression, anxiety, and paranoia. In their study conducted with teacher candidates, Akbulut and Çuhadar (2011) reached findings regarding the effects of cyberbullying such as distrust of people, social anxiety, revenge, lack of self-esteem, and attempted suicide. Hoff and Mitchell (2009) stated that cyber victims are exposed to anger, nervousness, and feelings of weakness, fear, and sadness. In addition to social life, the academic achievement of students is also significantly affected by cyber victimization (Koç et al., 2016; Schneider, O'Donnell, Stueve & Coulter, 2012). When looking at the performed research, we noticed cyberbullying to have important psychological and social effects on individuals.

Perceived Family Support and Cyberbullying

Perceived social support is defined as having the perception of being loved, appreciated, and valued within one's social environment (Demaray & Malecki, 2003). Stokes (1985) defined perceived social support as the feeling that a person has an environment where they can seek support when they need help. Social support can be mainly perceived from family, friends, and teachers (Saylor & Leach, 2009). Especially in young age groups, social support is mostly able to be provided by the family. As the individual grows, social support is expected from their social environments. Because this study group is middle school students, the concept of social support has been limited to family support. Perceived family support in this study has been defined as one feeling supported by the family (Heiman, Olenik-Shemesh, & Eden, 2015).

Several researchers have pointed out that cyberbullying may be related to perceived family support (Dilmaç & Aydoğan, 2010; Fanti, Demetriou, & Hawa, 2012; Heiman et al., 2015; Larrañaga, Yubero, Ovejero, & Navarro, 2016; Ybarra & Mitchell, 2004). These researchers generally state the perceived family support levels of individuals who are perpetrators to be low (Martinez-Herves, Kramer, & Hickey, 2014; Park et al., 2014). In a study conducted with primary school students, intra-family communication was found to be significantly associated with cyberbullying (Martinez-Herves et al., 2014). In another study, Heiman et al. (2015) found students who perform cyberbullying behaviors to perceive significantly lower family support. Park et al. (2014) also stated students who spend more time with their parents to be less involved in cyberbullying behaviors. In addition, perceived family support has been considered as an effective factor in helping cyber victims get rid of the negative effects of cyberbullying (Accordino & Accordino, 2011; Navarro, Yubero, & Larranaga, 2016; Wang, Iannotti, & Nansel, 2009). Larrañaga et al. (2016) found in their study that high-level cyber victims have more family communication problems than low-level cyber victims. Accordino and Accordino (2011) stated that students who have close relationship with their parents are less likely to be cyber victims. Another study has determined perceived family support to be a variable with a protective role against cyberbullying for children (Fanti et al., 2012). As can be seen from these studies' findings, perceived family support is an important variable related to cyberbullying and has a preventive effect on both cyberbullying and cyber victimization. In the literature are various studies in which the relationship between cyberbullying has been investigated with variables other than perceived family support. As an example are descriptive studies that have identified the profiles of cyber perpetrators (Arıcak et al., 2008; MacDonald & Roberts-Pittman, 2010), studies examining individuals' perceptions of cyberbullying (Agatston, Kowalski, & Limber, 2007; Mishna, Saini, & Solomon, 2009), and studies related to cyber victimization (Elgar et al., 2014; Tokunaga, 2010). Because the descriptive studies have aimed to determine the profiles of cyber victims and cyber perpetrators, these have been particularly based on examining cyberbullying through demographic variables such as age, gender, Internet usage, and technology ownership.

Traditional bullying (National Center for Educational Statistics, 1995) and cyberbullying (Le, 2007) are common problems in school life. A variety of studies have been carried out to reveal statistical evidence that cyberbullying has become widespread in society (Juvoven & Gross, 2008; Mishna et al., 2010; Vandebosch & Van Cleemput, 2009). In a study conducted at the middle-school level, 50% of students were found to have been cyber perpetrators and 34% of them to have been harmed by cyberbullying behaviors (Mishna et al., 2010). In another study of students aged 12 to 17, 72% of students reported having found themselves in cyberbullying situations (Juvoven & Gross, 2008). In a study conducted with 2,052 students in primary- and middle-school levels,

about 30% of the students reported having been cyberbullied or victimized, while 28% reported having witnessed cyberbullying activities (Vandebosch & Van Cleemput, 2009). Different studies are also found to have stated cyberbullying to be a common problem (Li, 2007; Raskauskas & Stolz, 2007; Tokunaga, 2010). Eliminating this problem is of great importance for individuals to be able to continue their psychological development and education successfully. For this reason, determining the variables that might be related to cyberbullying is an effective way to prevent it (Demir & Seferoğlu, 2016). In this context, perceived family support is a critical factor that plays an important role in dealing with cyberbullying and cyber victimization (Fanti et al., 2012; Park et al., 2016). The attitudes of the parents towards the child (Dilmaç & Aydoğan, 2010) and quality family relationship and communication (Ybarra & Mitchell, 2004) have been stated to be significantly related to both cyberbullying and cyber victimization. For this reason, the current study examines perceived family support and cyberbullying based on certain demographic variables. The hypothesis of the research set in this context is given in Figure 1.

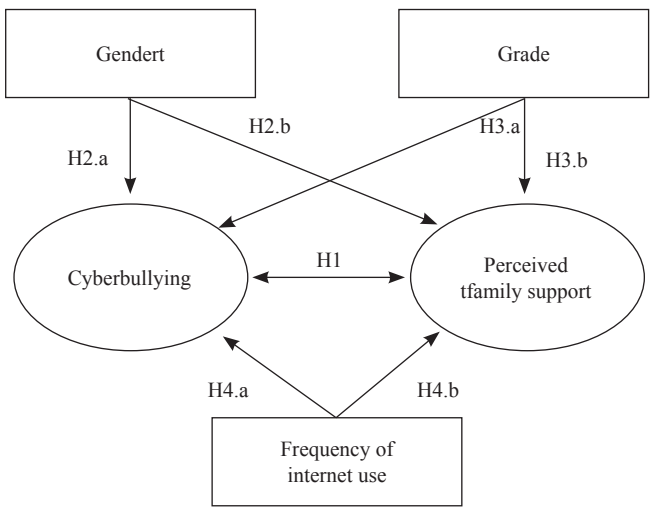

Figure 1. Scheme of the study's hypotheses.

The aim of this research is to examine cyberbullying and the perceived family-support levels of middle-school students. Several studies have revealed that children in primary and middle school expect social support mostly from their families (Furman & Buhrmester, 1992; Morrison et al., 1997). For this reason, social support in this study has been limited only to the dimension of family support. The study investigates the relationship between perceived family support and cyberbullying (H1), in addition to the relationship between gender (H2), grade (H3), and frequency of internet usage (H4). In Figure 1, bidirectional arrows indicate the correlational model and unidirectional arrows indicate the causative model.

Method

Research Model

This study describes the current status of middle-school students regarding perceived family support and cyberbullying and examines the relationships between the determined variables. For this reason, this research has been designed with a basis on causal and correlational studies from among the quantitative research methods (Fraenkel, Wallen, & Hyun, 2012, p. 331).

Study Group

The study group consists of 223 students in the 5th, 6th, 7th, and 8th grades from two public schools and one private school. The data collection process is volunteer-based, ensuring the students can answer the scales without giving their names. The distribution of the study group by gender, grade, and school type is given in Table 1.

Table 1
Characteristics of the Study Group

Variable	Category	Frequency (*f*)	Percent (%)	Has a Computer		Internet Connection	
				Yes (*f*)	No (*f*)	Yes (*f*)	No (*f*)
Gender	Female	131	58.7	72	59	83	48
	Male	92	41.3	73	19	63	29
Grade	5th	41	18.4	25	16	26	15
	6th	43	19.3	28	15	31	12
	7th	35	15.7	31	4	30	5
	8th	104	46.6	61	43	59	45
School Type	Public	90	40.4	79	11	82	8
	Private	133	59.6	66	67	64	69
	Total	223	100	145	78	146	77

As seen in Table 1, most participants are female students (*f* = 131, 59.7%). In addition, overall participation among students is highest for 8th grade (*f* = 104; 46.6%) and 7th grade (*f* = 35, 15.7%). Around 60% of the participants attend private schools, with the others attending public schools. Most of the participants are shown having a personal computer (65%) and internet connection (65%). Only 55% of the female students have computers, while 63.4% have an active internet connection. When examining the frequencies of having a computer and internet connection, the fact that the results are high in favor of students studying in public schools is noteworthy.

Data Collection Tools

In this study, the Perceived Social Support Scale, Cyberbullying Scale, and a personal information form have been used to determine students' levels of perceived family support and cyberbullying. The personal information form, which has questions about gender, grade, and the frequency of internet use, was created by the researchers.

Perceived Social Support Scale. The Perceived Social Support Scale, developed by Yıldırım (2004), has been used as a measurement tool for determining perceived family-support levels in the study. During the development stage of the scale, Yıldırım (2004) applied it to middle-school, high-school, and university students and decided the scale can be applied to all individuals above the age of 10. The scale consists of 50 items and three factors. The factors are family support (20 items), friend support (13 items), and teacher support (17 items). The scale is 3-point Likert-type scale and consists of options such as "not suitable for me," "partially suitable," and "suitable for me." Accordingly, higher scores on the scale indicate higher perceptions of social support. Cronbach's alpha reliability coefficient for the overall scale is .93 and has been calculated as .94, .91, and .93 for the family-, friend-, and teacher-support subscales, respectively. A Cronbach alpha value greater than .70 is accepted as evidence of the measurement tool's reliability (Nunnully & Bernstein, 1994). Accordingly, the measurements made with this scale can be said to be reliable. This study only uses the family support subscale.

Cyberbullying Scale. The study also uses the Cyberbullying Scale, developed by Arıcak et al., (2012) for determining students' cyberbullying levels. The scale was developed to determine the cyberbullying behaviors of students between the ages of 11 and 18 and consists of 24 items and one factor. The options in the 4-point Likert scale have been determined as "never," "sometimes," "most of the time," and "always." Higher scores obtained from the scale are interpreted as higher cyberbullying levels. Accordingly, students with high cyberbullying scores can be said to tend to show more bullying behaviors in virtual environments. The psychometric evaluation of the scale was made by the researchers who developed the scale, and it has been identified as a valid and reliable measurement tool. The Cronbach alpha reliability coefficient of the scale has been found as .95. Accordingly, the measurement results obtained from this scale can be said to be reliable.

Data Analysis

Analysis of this study, it was aimed to use a structural equation model with dependent variables as cyberbullying and perceived family support. However, since the normality assumption in dependent variables is violated, data-model inconsistency was observed in the structural equation models. Therefore non-parametric methods were applied in the data analysis. As a result of the Shapiro-Wilk and Kolmogorov-Smirnov tests, it was determined that the data about the cyberbullying and perceived family support did not distribute normally ($p < .05$). The normality test results of both variables are given in Table 2.

Table 2
Normality Test Results

				Statistics	
Variables	*N*	*M*	*SD*	*S-W*	*K-S*
Cyberbullying	233	26.73	5.77	.519	.318
Perceived Family Support	233	53.65	7.39	.764	.227

Various data transformation techniques have been performed to ensure the normal distribution of data. Table 3 shows the results of the Shapiro-Wilk and Kolmogorov-Smirnov normality test after the square root transformation. However, the data did not distribute normally ($p < .05$).

Table 3
Normality Test Result Regarding the Transformed Data

				Statistics	
Variables	*N*	*M*	*SD*	*S-W*	*K-S*
Cyberbullying	233	5.14	.48	.568	.304
Perceived Family Support	233	7.30	.55	.731	.235

The linear transformations (*Z*, *T*, etc. transformations) and non-linear transformations (log, exponential, square root, etc.) also yielded non-normal data. Because the normality assumption is not met, the Spearman rank correlation coefficient has been used to examine the relationships between the variables (for testing the relational relationships in Figure 1). In addition, the Kruskal-Wallis H and Mann-Whitney U tests have been used to examine if cyberbullying and perceived family support differ according to demographic variables (causal relationships in Figure 1). For nonparametric tests, the *epsilon squared* coefficient has been used to estimate effect size. The formula for calculating epsilon squared (Tomczak & Tomczak, 2014) is given below.

$$E_R^2 = \frac{\mathrm{H}}{(n^2 - 1)/(n - 1)}$$

The *H* value in the formula is obtained from the Kruskal-Wallis H test statistic; *n* is used to express the total number of observations. The ε_R^2 value is the epsilon-square coefficient. The convergence of the coefficient to 1 indicates perfect effect, while its convergence to 0 indicates no effect. Rea and Parker (1992) reported that this coefficient with a value between .20 and .40 refers to medium effect size, while less than .20 refers to small effect size.

Findings

Investigating the Relationship between Perceived Family Support and Cyberbullying

This study first examines the relationship between the variables of cyber bullying and perceived family support (H1). Because the data are not normally distributed,

the correlation has been examined using the Spearman rank correlation coefficient. The results of statistical analysis showing the relation between the variables of cyber bullying and perceived family support are given in Table 4.

Table 4
Analysis of the Relationship Between Cyberbullying and Perceived Family Support

Variable	*N*	*r*
Cyberbullying X Perceived Family Support	223	-.401

When examining Table 4, a significant and negative correlation is found between students' levels of cyber bullying and perceived family support at moderate level (r = -.401; $p < .00$). This result can be interpreted as a decrease in the level of cyberbullying as the level of perceived family support increases, and vice versa.

Analysis of Cyberbullying Based on Gender

The Mann-Whitney U test was used to analyze nonparametric data to determine the gender differences in students' cyberbullying levels (H2.a). The results of the analysis are given in Table 5.

Table 5
Mann-Whitney U Test Results on Gender and Cyberbullying

Group	*M*	*SD*	Mean Rank	*Z*
Female	26.24	4.17	110.13	-.558
Male	27.42	7.46	114.66	

When examining the results in Table 5, no significant difference is seen to exist between cyberbullying levels of male and female students (Z = -.558; $p > .05$). According to these results, the cyberbullying levels of students can be said to not differ according to gender. As the effect of gender on cyberbullying is a causal model, the epsilon square effect size has also been found as .001 in the analysis. Therefore, this finding can be interpreted as no significant effect being found on cyberbullying in terms of gender.

Analysis of Perceived Family Support Based on Gender

The gender-based analysis of perceived family support (H2.b) has been examined. The Mann-Whitney U test results are given in Table 6.

Table 6
Mann-Whitney U Test Results on Gender and Perceived Family Support

Group	*M*	*SD*	Mean Rank	*Z*
Female	53.26	7.48	107.82	-1.162
Male	54.21	7.29	117.96	

The results in Table 6 show no significant difference to exist between female and male students according to perceived family support levels (Z = -1.162; $p > .05$).

Perceived family support levels of students can be said to not differ according to gender. The effect size of gender on perceived family support has been calculated using the epsilon square and has been found to be .006. This finding can be interpreted as the absence of gender influence on perceived family support.

Analysis of Cyberbullying Based on Students' Grade

Another research hypothesis examined in the research is whether the level of cyberbullying differs according to the students' grade level (H3.a). The Kruskal-Wallis test was used to find the answer to this hypothesis. Findings are given in Table 7.

Table 7
Kruskal-Wallis Test Results for Cyberbullying and Student' Grade

Variable	Grades	*N*	*M*	*SD*	Mean Rank	χ^2	Difference	Effect Size
Grade	5th[a]	41	25.76	6.94	86.06	18.89	d > a d > b	.09
	6th[b]	43	25.58	3.22	98.00			
	7th[c]	35	26.00	3.39	108.57			
	8th[d]	104	27.83	6.54	129.17			

When examining the results in Table 7, students' cyberbullying levels are understood to differ according to grade ($\chi^2 = 18.89$; $p < .05$). The Mann-Whitney U test was applied between each pair of categories to find out which grades differ according to cyberbullying level. According to these results, 8th graders are found to have significant differences in cyberbullying levels compared to 5th and 6th graders. This difference is in favor of 8th graders. Accordingly, 8th graders have significantly higher levels of bullying than students in lower grades.

Analysis of Perceived Family Support Based on Students' Grade

This analysis was conducted using the Kruskal-Wallis test for the purpose of examining whether a difference exists in the perceptions of family support based on students' grade (H3.b). The results of the analysis are given in Table 8.

Table 8
Kruskal-Wallis Test Results for Perceived Family Support and Student Grade

Variable	Grades	*N*	*M*	*SD*	Mean Rank	χ^2	Difference	Effect Size
Grade	5th[a]	41	41	55.00	7.78	9.75	a > b a > c a > d	.04
	6th[b]	43	43	54.84	5.67			
	7th[c]	35	35	54.14	5.29			
	8th[d]	104	104	52.46	8.33			

When examining the results in Table 8, students' perceived family support levels are seen to differ according to grade ($\chi^2 = 9.75$; $p < .05$). The Mann-Whitney U test was applied between each pair of categories to find out which grades differ according to perceived family support level. Fifth graders are found to show significant differences in perceived family support levels compared to 6th, 7th, and 8th graders.

Analysis of Cyberbullying Based on Frequency of Internet Use

In the study, students' cyberbullying levels have been analyzed according to frequency of weekly Internet usage (H4.a). The results obtained using the Kruskal-Wallis test are given in Table 9.

Table 9.
Kruskal-Wallis Test Results for Cyberbullying and Frequency of Internet Use

Variable	Categories (Hour)	*N*	*M*	*SD*	Mean Rank	χ^2	Difference	Effect Size
Frequency of Internet Use	0[a]	36	25.14	4.58	79.10	42.19	g > d, c, b, a f > b, a e > b, a d > b, a c > a b > a	.20
	<1[b]	54	25.07	2.02	92.76			
	1-5[c]	64	26.30	5.76	111.14			
	6-10[d]	28	26.79	3.95	130.09			
	11-15[e]	12	27.42	3.27	145.08			
	16-20[f]	12	29.83	6.55	146.75			
	>20[g]	12	34.18	11.28	168.35			

When examining the mean scores of the categories, cyberbullying scores are seen to increase as the frequency of Internet usage increases. According to the results of the Kruskal-Wallis test, a significant difference has been determined to exist between cyberbullying levels according to Internet usage frequency ($\chi^2 = 42.19$; $p < .05$). The Mann-Whitney U test has been used to find out which categories differ. According to these results, students who use the Internet more than 20 hours per week have significantly higher cyberbullying levels than students who use the Internet up to 10 hours a week. Students who do not use the Internet at all have significantly lower cyberbullying levels than other students, which is expected.

Analysis of Perceived Family Support Based on Frequency of Internet Use

Finally, the study examines how the perceived family support levels of students differ according to frequency of Internet usage (H4.b). The Kruskall-Wallis test results are shown in Table 10.

Table 10
Kruskal-Wallis Test Results for Cyberbullying and Frequency of Internet Use

Variable	Categories (Hour)	*N*	*M*	*SD*	Mean Rank	χ^2	Difference	Effect Size
Frequency of Internet Use	0[a]	36	53.67	7.89	116.14	14.67	a > g b > g c > g d > g e > g	.07
	<1[b]	54	55.00	5.15	116.83			
	1-5[c]	64	54.89	6.05	121.16			
	6-10[d]	28	54.21	6.58	115.84			
	11-15[e]	12	53.50	7.76	113.96			
	16-20[f]	12	51.83	7.76	94.00			
	>20[g]	12	45.12	11.94	58.41			

The perceived level of family support is seen to differ according to frequency of Internet use ($\chi^2 = 14.67$; $p < .05$). The Mann-Whitney U test was conducted to find out which categories differ. According to these results, the perceived family support levels of students

who use the Internet more than 20 hours a week are significantly lower than students who use the Internet less than 15 hours per week. Students who spend excessive amounts of time using the Internet are understood to perceive lower levels of family support.

The patterns between the variables and effect sizes are given in Figure 2. Effect sizes have been calculated using non-parametric analysis methods (Tomczak & Tomczak, 2014).

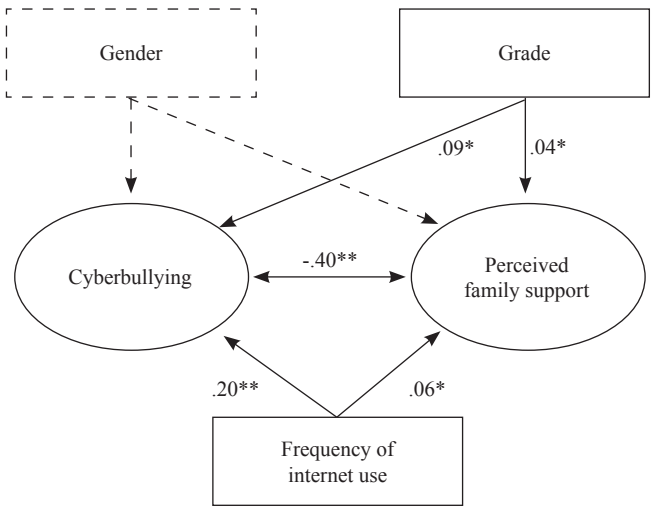

Figure 2. Results of hypothesis tests and effect sizes.

Figure 2 is a summary of the hypothesis tests presented so far. Double asterisks (**) on the coefficients indicates a $p \leq .01$ level of significance, while a single asterisk (*) indicates a $p \leq .05$ level. A negative correlation exists between cyberbullying and perceived family support at moderate level (r = -.401; p < .00). Considering the calculated effect sizes, frequency of Internet use is the most influential factor on cyberbullying and perceived family support. Hypothesis tests on gender have not been supported with this study. For this reason, the effect size for this variable has not been calculated.

Discussion and Recommendations

This study has examined the relationship between middle-school students' cyberbullying and their perceived family support. In addition, it has investigated whether the levels of cyberbullying and perceived family support differ according to gender, grade, and frequency of Internet use. In this context, some suggestions have been made to overcome the problem of cyberbullying.

The main finding of the study indicates a significant negative correlation to exist between perceived family support and cyberbullying among middle-school students. Therefore, a decrease in cyberbullying level can be inferred as the level of support the

students perceive from their parents increases. This finding is in parallel with findings from various studies in the literature (Fanti et al., 2012; Heiman et al., 2015; Park et al., 2014). On the other hand, contrary to this study, Bingöl and Tanrıkulu (2014) concluded no meaningful relationship to exist for social support perceived from the family with cyberbullying. Fanti et al. (2012) noted that perceived family support is associated not only with cyberbullying but also negatively with cyber victimization. Similarly, Ybarra and Mitchell (2004) stated parental communication and family bonding with children to be directly related to both cyberbullying and cyber victimization. Therefore, the perceived family support for individuals in the young age group is understood to be important for preventing cyberbullying and helping cyber victims.

This study has found students' cyberbullying and perceived family support levels to not differ according to gender. Various studies in the literature are seen to support this finding (Chechen, 2008; Demeray & Malecki, 2002; Demir & Seferoglu, 2016; Hinduja & Patchin, 2008). Studies on traditional bullying show men to be more likely to perform bullying behaviors than women (Kaltiala-Heino, Rimpelä, Rantanen, & Rimpelä, 2000; Seals & Young, 2003). However, cyberbullying is considered as a type of bullying that is performed more indirectly and in private compared with traditional bullying. In addition, various studies have pointed out that, when girls decide to exhibit bullying behaviors, they prefer indirect ways such as psychological and emotional harm (rather than physical violence) (Baldry & Farrington, 1999; Crick, 1995). When considered in this context, the finding that female students are involved in cyberbullying as much as male students is reasonable. Additionally, studies are found where boys have been found to have higher levels of cyberbullying than girls (Ayas & Horzum, 2009, Bingöl & Tanrıkulu, 2014; Dalmaç Polat, & Bayraktar, 2016). Demeray and Malecki (2002) found no significant difference to exist between perceived family support levels of boys and girls in middle school. Similar studies have also found gender to have no significant effect on perceived family support (Malecki & Demeray, 2003; Rueger, Malecki, & Demeray, 2010). Accordingly, one can say that families provide the same level of support to their children without regard to gender.

Cyberbullying in this study has also been examined in the context of grade. Analysis results show the level of cyberbullying to differ according to grade. Cyberbullying scores have been observed to increase significantly with an increase in grade. Similar to these results, Manap (2012) stated middle-school students' cyberbullying levels to differ according to grade. However, some studies have concluded cyberbullying to not differ according to grade or age (Eroğlu & Güler, 2015; Özdemir & Akar, 2011). For example, a study conducted with primary-school students found cyberbullying to not differ according to age (Çalışgan, 2013). Perceived family support was also investigated by considering grade. As a result of the analysis, the family support perceived by the 5th-grade students

was higher than for the 6th, 7th, and 8th graders. From this point, the perceived family support decreases as the variable of grade increases. Cheng and Chan (2004) found similar findings in their study, stating older students to perceive lower levels of family support compared to younger students. In another study, 4th-grade students were found to have higher levels of perceived family support than 6th and 8th graders (Nickerson & Nagle, 2005). Their study also stated that, during the transition from childhood to adolescence, students expect social support more from their friends than their families. In this context, this study can be said to have reached conclusions similar to the literature.

The frequency of Internet use is one of the associated factors discussed in the context of cyberbullying and perceived family support. As a result of analysis, cyberbullying levels were determined to differ according to frequency of Internet use. This and similar studies show that as the amount of time spent on the Internet increases, the likelihood of individuals showing cyberbullying behaviors increases (Burnukara, 2009; Manap 2012; Serin, 2012). Manap (2012) and Tanrıkulu (2013) found the frequency of Internet use to be a significant influence on cyberbullying. Çalışgan (2013), unlike these findings, concluded that the cyberbullying level did not change with the frequency of Internet use. Similarly, perceived family support was found to be factor that differs with frequency of Internet use. The increase in the time spent using the Internet can be asserted to cause a decrease in the time students spend with their families. In a study conducted with middle-school students, Lee and Chae (2007) found the Internet usage frequency to be negatively related to the time spent among family members. In a similar study carried out at the middle-school level, an increase in the amount of time spent on the Internet causes a decrease in the time spent on intra-family communication, leading to a low level of perception of family unity (Mesch, 2006).

One of the main findings in the study is the increase in the level of perceived family support to negatively relate to cyberbullying levels. Therefore, because the perception of family support is an important factor in reducing students' cyberbullying behaviors, family members should be aware of certain duties and responsibilities on this point. For example, Social Support Training Programs have been suggest as able to be organized under the guidance of psychological advisors in schools so that parents can act more supportively towards their children (Yıldırım, 2000). The ability of children to control their self-esteem and self-expression in social life has also been stated to prevent aggression and bullying (Akbaba & Eroğlu, 2013). For this reason, organizing educational programs where parents are taught to help their children gain these skills is important in preventing cyberbullying. In addition and as seen in this study, the frequency of Internet use has been determined as the factor with the strongest effect on cyberbullying. Erdur-Baker (2010) stated risky Internet usage behaviors such as sharing personal information with others and communicating with people they do not know to be the most important variables related to cyberbullying. Therefore, parents are recommended to control their children's Internet use and intervene

when necessary. Ang (2015) stated parents to usually have two types of mediation for their child's Internet use: restrictive and active mediations. Restrictive mediation is the restriction of access to the Internet and to certain sites. On the other hand, active mediation requires parents to inform their children about harmful and useful content and safe Internet use. On this point, Liu, Ang, and Lwin (2013) found in a study that active mediation is more effective and appropriate mediation for preventing cyberbullying. For this reason, parents are suggested to have active mediation strategies, which include giving information to their children on safe Internet use. Aksaray (2011) stated both the school and the family to have an effective role in preventive interventions for stopping cyberbullying. Therefore, organizing informative activities for both students and parents about the ethical and moral information related to the problems that may arise if information/communication technologies are used for wrong purposes is important (Erdur-Baker & Kavşut, 2007; Horzum & Tuncay; Park et al., 2014). In addition, creating time and opportunities for students to spend more meaningful and quality time with their parents will both reduce the time students spend on the Internet, as well as have a positive impact on their perceptions of family support. Therefore, the role of the family in removing or reducing students' cyberbullying behaviors is suggested for being taken into consideration both in the research to be done in this field and also in practical interventions.

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