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Widespread internet use can facilitate the fulfillment of daily human work. Nowadays, the internet has become an essential tool for social interactions among adolescents and adults. Although the internet has many other benefits, there are also negative consequences of internet misuse in our lives. One of the most significant negative consequences of internet and communication technology misuse is cyberbullying. Cyberbullying (CB) is a concept that has been more subject to research for two decades. Although it does not have a consensus definition, CB is known as a form of bullying (Kowalski et al., 2014; Smith et al., 2006). Patchin and Hinduja (2006) define CB as "willful and repeated harm inflicted through the use of computers, cell phones, or other electronic devices." CB actions can include insulting text messages or e-mails, intrusive and abusive phone calls, sending and spreading embarrassing images, accessing electronic devices and social accounts without permission (Nocentini et al., 2010).

Social support has been defined by Shumaker and Brownell (1984) as "an exchange of resources between at least two individuals perceived by the provider or the recipient to be intended to enhance the well-being of the recipient." Many studies have shown that social support has a protective effect against negative consequences of CB, and poor social support is associated with cyberbullying and cybervictimization (CV) among adolescents and adults (Hellfeldt et al., 2020; Olenik-Shemesh and Heiman., 2017; Navarro et al., 2015; Tennant et al., 2015; Fanti et al., 2012). For instance, Bowes et al. (2010) have reported that supportive parenting styles have been associated with buffering primary school students from negative consequences of

The Relationship Between Academic Achievement And Perceived Social Support With Cyberbullying And Cybervictimization In University Students

Üniversite Öğrencilerinde Akademik Başarı İle Algılanan Sosyal Desteğin Siberzorbalık Ve Siber Mağduriyet İle İlişkisi

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ABSTRACT

This study aimed to investigate the relationship of academic achievement and perceived social support with cyberbullying (CB) and cybervictimization (CV) in university students. 550 university students completed the Revised Cyberbullying Inventory for University Students (RCBI), Multidimensional Scale for Perceived Social Support (MSPSS), and a sociodemographic form. CB and CV scores were negatively correlated with MSPSS' family and friends subscale scores ($r=-.23$, $r=-.12$, $r=-.23$, and $r=-.34$, respectively). GPA level was negatively correlated with CB and CV scores ($r=-.38$ and $r=-.52$, respectively). Low perceived social support and low academic achievement level may be related to both CB and CV in university students.

Keywords: academic achievement, cyberbullying, cybervictimization, family support, perceived social support

ÖZET

Bu çalışmanın amacı, üniversite öğrencilerinde akademik başarı ve algılanan sosyal desteğin siber zorbalık (SZ) ve siber mağduriyet (SM) ile ilişkisini araştırmaktır. Çalışmanın örneklemini 550 üniversite öğrencisi oluşturdu. Her bir katılımcı Üniversite Öğrencileri için Revize Siber Zorbalık Envanteri, Çok Boyutlu Algılanan Sosyal Destek Ölçeği ve sosyodemografik formunu doldurmuştur. Katılımcıların SZ ve SM puanları ile aile ve arkadaşan algılanan sosyal destek alt ölçek puanları arasında negatif yönde ilişki saptandı (sırasıyla $r=-.23$, $r=-.12$, $r=-.23$ ve $r=-.34$). Katılımcıların genel not ortalamaları ile SZ ve SM puanları arasında negatif yönde korelasyon saptandı (sırasıyla $r=-.38$ ve $r=-.52$). Üniversite öğrencilerinde algılanan düşük sosyal destek ve düşük akademik başarı düzeyi hem SM hem de SZ ile ilişkili olabilir.

Anahtar kelimeler: akademik başarı, siberzorbalık, siber mağduriyet, aile desteği, algılanan sosyal destek



victimization. In a study conducted by Elgar et al. (2014), it has been shown that supportive family communication has a protective effect against CB-related harms in young people. Calvete et al. (2010) have reported that low perceived social support predicts CB in adolescents. According to the results of another study conducted with adolescents, it has been reported that strong family support is a protector both against CB and CV (Fanti et al., 2012). The results of a recent study have shown low perceived social support from family, teachers, or friends is related to CB and CV in young adolescents (Hellfeldt et al., 2020). The results of a current systematic review of meta-analyses have indicated that positive peer interaction is the most substantial protective factor against being a bully/victim (Zych et al., 2019).

Many researchers have emphasized the association of CB and CV on academic achievement in university students (Peled, 2019; Gardella et al., 2017; Alwagait et al., 2015; Kowalski and Limber, 2013). According to the results of a recent meta-analysis, both CB and CV are associated with higher school attendance and academic achievement problems (Gardella et al., 2017). Kowalski and Limber (2013) have reported a negative relationship between CB and CV and poor academic achievement in adolescents. The results of a meta-analytic review of 33 studies have shown a significant negative correlation between peer victimization and academic achievement in students (Nakamoto and Schwartz, 2010).

Due to the results of the studies mentioned above, it can be said that poor social support and low academic achievement are related to CB and CV among adolescents and younger adults. It was anticipated that CB and CV-related consequences could be critical social issues for adolescents and young adults. The relationship between perceived social support and CB and CV has been frequently investigated in children and early adolescents in the Middle East population, but has not been adequately studied in university students. Therefore, the primary aim of the present study was to evaluate the relationship of perceived social support and academic achievement with CB and CV among university students.

METHOD

Participants and Procedures

The study was both cross-sectional and correlational in design. The data of the study were collected from university students who continued their education at Haliç University between November 2019 and February 2020. A web-based sample size calculator program was utilized for determining power (http://www.raosoft.com/sample_size.html). Accordingly, the study's sample size was calculated based on an error margin of 1% and a 99% confidence level in the population. A total of 550 volunteer university students (275 male and 275 female) formed the study sample. The participants were recruited to the study by using the sex-matching method. Each participant completed the Revised Cyber Bullying Inventory for University Students (RCBI), Multidimensional Scale for Perceived Social Support (MSPSS), and a sociodemographic form. All participants were informed about the study and signed the consent form in a face-to-face interview. All stages of the study (hypothesis, design and data collection, ethical standards) are approved by the Ethics Committee of Haliç University.

Materials

Sociodemographic form: The form includes the sociodemographic features of the participants, such as age, education level, and internet usage features.

Revised Cyber Bullying Inventory (RCBI) for University Students: The inventory is a newer revision of the Revised Cyber Bullying Inventory (Topcu & Erdur-Baker, 2010). The inventory measures cyberbullying (CB) and cybervictimization (CV) in two independent but parallel sections with 12 shared items. While the first section investigates cyberbullying perpetration, the second section examines cybervictimization. The items related to CB contain the meaning of "I did it," and other items related to CV contain the meaning of "It happened to me." The inventory is a Likert-type scale rated between 1 and 4 (1=never, 2= it happened once, 3= it happened two or three times, 4= more than three times). The internal consistency coefficients of CB and CV sections have been calculated as .86 and .77, respectively, with the exploratory factor analysis of the current study. Whereas the internal consistency coefficient is .80 for the cyberbullying perpetration section, it is .73 for the cyberbullying victimization section for the Turkish form of the scale (Tanrikulu and Erdur-Baker, 2019).

Multidimensional Scale for Perceived Social Support (MSPSS): It was developed by Zimet et al. (1988), and Turkish validity and reliability study was carried out by Eker et al. (2001). A Likert scale includes 12 items and three subscales, including support from families, friends, and significant others. Higher scores of the subscales indicate higher levels of perceived social support. The internal consistency coefficients of the Turkish form' subscales are .85 for family, .88 for friends, and .92 for significant others. The internal

consistency coefficients of support from family, friends, and significant others sections have been calculated as .79, .86, and .84, respectively, with the exploratory factor analysis of the current study.

2.2.4. Grade Point Average (GPA): GPA is a rating system used to determine the students' academic achievement. GPA represents the average value of the accumulated final grades achieved in courses over time. Turkish universities use the form of GPA based on a 0 to 4 scale for their student's academic achievement. It is used for students' academic progress, admission to advanced studies, and accreditation and quality assurance. Their official transcripts have confirmed the current GPA of the participants.

Statistical Analysis

All statistical analyses were conducted in the IBM SPSS 25.0. Descriptive data were presented as number, percentage, mean, and standard deviation. Normality distribution of variables was assessed according to skewness and kurtosis values. Due to the skewness and kurtosis values of the variables ranging from 2 to -2, parametric tests were used for data analysis (West et al., 1995). An independent sample t-test was performed to test the differences between gender groups. Pearson correlation analysis was used to investigate the relationship between CB, CV, MSPSS subscales scores, and GPA of the participants. Stepwise regression analysis was performed to evaluate for predictive effects of some independent variables on CB and CV scores. In the regression analysis, gender was coded as a dummy variable. For all analyses, $p < 0.05$ value is used for statistical significance.

RESULTS

All statistical analyses were performed with 550 university students (275 female and 275 male). The age of participants ranged from 18-31, and the mean age was 23.35 (SD = 2.5). Sociodemographic features of the participants are shown in Table-1.

The results showed statistically significant differences between gender groups on CB, CV, GPA, and MSPSS subscales. CB scores were higher in male participants (17.53 ± 6.22) than female participants (15.28 ± 4.75) ($t = -4.778$ and $p < 0.001$), and CV scores were higher in male participants (18.53 ± 6.22) higher than female participants (17.18 ± 6.16) ($t = -2.566$ and $p = 0.011$). GPA level of the female participants was higher than those of male participants ($t = 3.135$ and $p = 0.002$). MSPSS total scores of female participants (69.16 ± 12.79) were higher than those of male participants (64.94 ± 16.5) ($t = 3.343$ and $p = 0.001$). Furthermore, MSPSS' friends and significant other subscales scores of the female participants were statistically higher than the male participants ($t = 3.951$ and $p < 0.00$; $t = 3.525$ and $p < 0.001$ respectively) (Table-2).

According to Pearson's correlation analysis results, a positive and statistically significant relationship between CB and CV scores was found ($r = .45$). The relationships between CB score and MSPSS' family and friends subscales were negative and statistically significant (respectively; $r = -.23$ and $r = -.12$). CB score was negatively correlated with MSPSS total score ($r = -.18$). Furthermore, there were negative and statistically significant relationships between CV score and MSPSS' family, friends, and significant other subscales (respectively; $r = -.23$, $r = -.34$, and $r = -.16$). CV score was negatively correlated with MSPSS total score ($r = -.30$). Number of social media accounts was positively correlated with CB score ($r = .19$). GPA level was negatively correlated with CB and CV scores ($r = -.38$ and $r = -.52$, respectively). GPA level was positively correlated with MSPSS family, friends, significant other, and total scores ($r = .49$, $r = .51$, $r = .44$, and $r = .58$; respectively). (Table-3).

Stepwise regression analysis was performed to evaluate possible predictors of CB and CV (Table-4 and Table-5). Accordingly, MSPSS family score explained 14.8% of the variance in the CB scores in the first model. GPA was added to the second model, and the variance explained in CB increased to 21.1%. In the third model, gender was added, and the variance explained in CB score increased to 23.3% (Table-4). MSPSS family score explained 26.9% of the variance in CV scores in the first model. MSPSS-friends score was added to the second model, and the variance explained in CV score increased to 30.9%. In the third model MSPSS-significant other score was added, and the variance explained in CV score increased to 31.8%. In the fourth model, GPA was added, and the variance explained in CV score increased to 33.4% (Table-5).

DISCUSSION

The study's primary purpose was to investigate the relationship between CB, CV, and perceived social support among university students. It also aimed to test the relationship between CB, CV, and academic achievement in university students. The main result of the present study showed that low perceived social support is associated with CB and CV in university students. Additionally, it is found that both CB and CV are related to low academic achievement in university students.

Many studies have focused on CB and CV in adolescents and younger adults (Chan and Wong, 2019; Sorrentino et al., 2019; Zsila et al., 2019; Sun et al., 2016; Lazuras et al., 2013). Although most of them have reported that CB is more common among males, there are also studies reporting that CB is higher in females or there is no difference between genders. In a study conducted by Chan and Wong (2019), it has been reported that the levels of CB are higher in male adolescents than in female adolescents.

According to the results of a recent meta-analysis, cyberbullying actions seem more frequent among males than females (Sun et al., 2016). According to the findings of a multicenter study involving 4847 participants from eight European countries, men performed more CB than women (Sorrentino et al., 2019). Akbulut and Eristi (2011) have found that CB is more common among male university students than those females in the Turkish population. Similarly, in this study, it is found that the level of CB is higher among males than females. It is thought that the association between gender and CB can be explained by the relation of more social and physical aggression among males. Indeed, some studies have reported male gender is associated with more impulse control problems and cyberbullying perpetration. (Khoury-Kassabri et al., 2019; Arriaga and Aguilar, 2019; Björkqvist, 2018; Alizamar et al., 2018).

Another notable finding of this study is that the level of CV is higher among males than those females. Many studies have reported that CV seems more frequent among females because of their cultural and social roles (Sun and Fan, 2018; Sun et al., 2016). According to the findings of a multi-center study with 6260 participants aged between 11-23 from six European countries, the rate of CV in females was higher than males (Schultze-Krumbholz et al., 2015). Laftman et al. (2013) have reported that CV is more frequent among females in Scandinavian society. On the other hand, some researches have shown that there is no difference in CV between genders, or CV is higher among males. Mura and Diamantini (2014) have reported no difference in CV among male and female students aged between 14-19. Akbulut and Eristi (2011) have found that CV is more common among male university students in the Turkish population. It seems that the relationship between gender and CV is unclear. It is thought that it can be explained by cultural differences and cross-sectional natures of researches.

According to the results of the present study, a positive correlation between CB and CV is found among university students. Similarly, Kowalski and Limber have reported that CB is associated with CV in adolescents (2007). In a study conducted with 1285 middle-school students, it has been declared that 4.3% of them are perpetrator-victim. (Rice et al., 2015). It can be explained that the anger and aggression of cyber-victims can cause their cyberbullying perpetration. König, Gollwitzer, and Steffgen (2010) have reported that 41.4% of cyber-bullies chose their former perpetrator as their last victim of CB. König, Gollwitzer, and Steffgen (2010) explained the bullying of the victims with the motivation for revenge.

Another important finding of the present study is that low perceived social support level is associated CB and CV in university students. Calvete et al. (2010) have reported that poor perceived psychosocial support predicts CB in adolescents. The results of a recent study have shown that CV is related to poor social support in adolescents aged between 14-16 (Olenik-Shemesh and Heiman., 2017). According to the results of another cross-sectional study, low family support is associated with CV, and higher family support reduces mental distress (Worsley et al., 2019). Arato et al. (2021) have reported that social support from family and friends has a protective effect against cyberbullying perpetration in adolescence. The relationship of low social support and CV and CB can be explained by their parents' non-supportive attitudes that do not allow them to improve their social and emotional skills. Indeed, many studies show irresponsible, punitive, and demanding parental attitude negatively affects children's social, behavioral, and emotional development (Pontzer, 2010).

On the other hand, cultural differences may affect the perceived social support among young people. So, there are differences between the perceived social support of Asians, Asian Americans, and European Americans. Some studies have shown that Asians and Asian Americans demand less social support from their families and relatives than European Americans. Authoritarian family and social structure in Asian societies can make it difficult for individuals to express their need for social support (Chu, Kim & Sherman 2008; Taylor et al., 2004).

The present study results have shown that low academic achievement may be related to CB among university students. According to a recent study, poor academic performance is related to CB in undergraduate students (Peled, 2019). The findings of a study conducted on 931 individuals aged between 11-19 have shown that academic performance is lower in those with CB actions (Kowalski and Limber, 2013). Our results are consistent with previous research that indicated CB might be associated with low academic achievement. The relationship between CB and low levels of academic achievement can be explained by higher stress levels and more attention-concentration problems in individuals with CB actions (Ildırım et al., 2017). Additionally,

control problems over internet use may also negatively affect academic performance among these students. Controls problems over internet use are associated with attentional and motivational problems that cause low academic performance in university students (Truzoli et al., 2020). Also, cyberbullies may have lower emotional intelligence, and low emotional intelligence may be related to their low academic achievement (Martínez-Martínez et al., 2020).

Many studies have reported that there is a relationship between low academic achievement and CV in university students. Kowalski and Limber (2013) have reported that poor academic performance is related to CV in adolescents. The findings of a recent meta-analysis have shown that low academic performance is related to CV among high school students (Gardella et al., 2017). As in the previous studies, our results have indicated that CV may be related to low academic achievement in university students. The lower levels of academic achievement in cyber-victims may be related to high levels of depression, anxiety, and emotional problems in individuals exposed to CB. Some studies have shown that depressive and anxious complaints that negatively affect academic functionality are common in cyber-victims. Depressive and anxious symptoms such as loss of concentration and interest, worthlessness beliefs, and somatic complaints may decrease social and academic functionality in young adults. (Wright, 2016).

There are some limitations to the present study. Since the findings were obtained by using self-report scales, the reliability of results may be low. Secondly, the study's cross-sectional nature does not help determine cause and effect, and the timing of the snapshot is not guaranteed to be representative. Finally, some correlation coefficients between our variables are relatively more minor. Thus, there is a need for further study to examine the hypotheses.

CONCLUSION

To conclude, the present study results have shown low perceived social support may be related to both cyberbullying and cybervictimization in university students. Additionally, it can be said that both cyberbullying and cybervictimization are more frequent among university students with low academic achievement levels than those with high academic achievement levels. Informing families and teachers about the relationship between CB and CV and social support can help prevent their negative consequences in university students. It would be beneficial to hold social conferences on the importance of psychosocial support for the harms of CB. Psychosocial intervention programs can be developed in which victims and bullies can express their social support needs.

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Declaration of competing interest

There is no conflict of interest declared by the authors.

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TABLES

Table-1. Sociodemographic features of the participants

Variable		M±SD	n	%	Range
Age		23.35±2.5			18-31
Gender	Female		275	50	
	Male		275	50	
Mother's Education Status	Illiterate		7	1.3	
	Primary school		137	24.9	
	High school		221	40.2	
Father's Education Status	University		185	33.6	
	Illiterate		3	0.6	
	Primary school		91	16.6	
Daily Internet Using (hour)	High school		213	38.7	
	University		243	44.2	
	<3		101	18.4	
Reasons for Internet Using	3-7		313	56.9	
	>7		136	24.7	
	Research/Education		84	12.2	
Number of social media accounts	Game		52	6	
	Music or Video		94	16.9	
	Social Interaction		320	64.9	
Grade Point Average (GPA)		4.43±2.1			1-11
		2.91±0.44			1.6-4.0

Abbreviations and symbols:

M: mean, SD: standart deviation

Table-2. Comparison of sociodemographic features and scale scores of the female and male participants

Variable		Female (n=275) M±SD or n (%)	Male (n=275) M±SD or n (%)	X ² or t value	p
Age		23.9±2.6	23.1±2.4	1.283 ¹	0.205
Mother's Education Status	Illiterate	3 (1.1)	4 (1.5)	4.554 ²	0.200
	Primary school	67 (24.4)	70 (25.5)		
	High school	122 (44.4)	99 (36)		
	University	83 (30.2)	102 (37.1))		
Father's Education Status	Illiterate	0 (0)	3 (1.1)	3.494 ²	0.322
	Primary school	45 (16.4)	46 (16.7)		
	High school	111 (40.4)	102 (37.1)		
	University	119 (43.3)	124 (45.1)		
Daily Internet Using(hour)	<3	50 (18.2)	51 (18.5)	0.739 ²	0.691
	3-7	161 (58.5)	152 (55.3)		
	>7	64 (23.3)	72 (26.2)		
Reasons for Internet Using	Research/Education	39 (14.2)	45 (16.4)	3.052 ²	0.384
	Game	23 (8.4)	29 (10.5)		
	Music or Video	43 (15.6)	51 (18.5)		
	Social Interaction	170 (61.8)	150 (54.5)		
Number of social media accounts		4.57±2.2	4.28±2.1	1.529 ¹	0.127
GPA		2.96±0.37	2.85±0.5	3.135 ¹	0.002
MSPSS-Total		69.16±12.8	64.94±16.5	3.343 ¹	0.001
MSPSS-Family		22.76±5.4	21.84±6.2	1.852 ¹	0.065
MSPSS-Friends		22.68±4.6	20.88±5.9	3.951 ¹	<0.001
MSPSS-Significant Others		23.72±3.9	22.23±5.8	3.525 ¹	<0.001
CB		15.28±3.4	17.53±5.2	-4.778 ¹	<0.001
CV		17.18±5.1	18.53±4.9	-2.566 ¹	0.011

Abbreviations and symbols:

M: mean, SD: standart deviation, x²: Pearson Chi square value, t: t value for independent samples t test, GPA: Grade Point Average, MSPSS: Multidimensional Scale for Perceived Social Support, CB: Cyberbullying score, CV: Cybervictimization score

Table-3. Correlations between CB, CV, and MSPSS scale scores, and GPA of the participants

Variables	1	2	3	4	5	6	7	8
1. NSMA	1	.19*	.06	.09	.08	.10	.09	.05
2. CB		1	.45**	-.23*	-.12*	-.08	-.18*	-.38**
3. CV			1	-.23**	-.34**	-.16*	-.30**	-.52**
4. MSPSS-Family				1	.62**	.64**	.90**	.49**
5. MSPSS-Friends					1	.70**	.92**	.51**
6. MSPSS-Significant Others						1	.93**	.44**
7. MSPSS-Total							1	.58**
8. GPA								1

Abbreviations and symbols:

NMSA: Number of social media accounts, MSPSS: Multidimensional Scale for Perceived Social Support, CB: Cyberbullying score, CV: Cybervictimization score, GPA: Grade Point Average, *: p<0.05, **:p<0.01

Table-4. Stepwise regression analysis for the predictors of cyberbullying score

Model	R	R ²	Adjusted-R ²	SE	F change	df1	df2	p
1 ^a	.398	.152	.148	5.23	88.707	1	548	<0.001
2 ^b	.474	.219	.211	5.13	23.229	1	547	<0.001
3 ^c	.513	.247	.233	5.05	18.263	1	546	<0.001

a: Predictors: (Constant), MSPSS-Family

b: Predictors: (Constant), MSPSS-Family, GPA,

c: Predictors: (Constant), MSPSS-Family, GPA, Gender

Table-5. Stepwise regression analysis for the predictors of cybervictimization score

Model	R	R ²	Adjusted-R ²	SE	F change	df1	df2	p
1 ^a	.520	.270	.269	5.33	202.917	1	548	<0.001
2 ^b	.558	.311	.309	5.18	32.478	1	547	<0.001
3 ^c	.567	.321	.318	5.15	8.058	1	546	0.005
4 ^d	.582	.338	.334	5.08	14.181	1	545	<0.001

a: Predictors: (Constant), MSPSS-Family

b: Predictors: (Constant), MSPSS-Family, MSPSS-Friends

c: Predictors: (Constant), MSPSS-Family, MSPSS-Friends, MSPSS-Significant other

d: Predictors: (Constant), MSPSS-Family, MSPSS-Friends, MSPSS-Significant other, GPA