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EVALUATION OF CYBERBULLYING AND MULTIDIMENSIONAL PERCEIVED SOCIAL SUPPORT LEVELS IN HIGH SCHOOL STUDENTS OF TURKEY

LİSE ÖĞRENCİLERİNDE SİBER ZORBALIK VE ÇOK BOYUTLU ALGILANAN SOSYAL DESTEK DÜZEYİNİN DEĞERLENDİRİLMESİ

Seval ÇALIŞKAN PALA[1], Alaettin ÜNSAL[1], Gülsüm ÖZTÜRK EMİRAL[2], Zeynep DEMİRTAŞ[1]
Sevil AKBULUT ZENCİRCİ[1], Mustafa TÖZÜN[3], Didem ARSLANTAŞ[1]

[1]Eskisehir Osmangazi University, Medical Faculty, Department of Public Health, Eskisehir, Turkey
[2]Istanbul Bahcelievler District Health Directorate, Istanbul, Turkey
[3]Izmir Katip Celebi University, Medical Faculty, Department of Public Health, Izmir, Turkey

ORCID IDs of the authors: S.Ç.P. 0000-0002-9815-8425; A.Ü. 0000-0001-8353-1605; G.Ö.E. 0000-0001-8781-4127; Z.D. 0000-0002-0403-7199; S.A.Z. 0000-0002-5308-9737; M.T. 0000-0002-7557-432X; D.A. 0000-0002-5263-3710

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ABSTRACT

Objective: The aim of this study is to determine the prevalence of cyberbullying and to evaluate the perceived social support levels.

Material and Method: This study was conducted on 2937 high school students studying in the city centre of Eskişehir. The questionnaire used in the study includes some sociodemographic characteristics of the students, the questions of Cyberbullying Inventory-II and the questions of the Multidimensional Perceived Social Support Scale. A Chi-square test, Logistic Regression Analysis and the Mann Whitney U test were used for analysis.

Results: The prevalence of cyberbullying among high school students consists of 65.3%. The prevalence of cyberbullying especially increases among men with a history of mental disorder, long internet usage, any social media account and who feel stronger on the internet. The frequency of cyberbullying is lower among students with high family support.

Conclusion: Cyberbullying is an important public health problem among high school students. In order to prevent and detect cyberbullying, training and awareness-raising should be provided for students, parents and teachers. Families, especially the children, should be provided with the necessary social support by the relevant authorities.

Keywords: Cyberbullying, Social support, High school students

ÖZET

Amaç: Çalışmada lise öğrencileri arasında siber zorbalık sıklığının saptanması, ilişkili olduğu düşünülen bazı değişkenlerin ve algılanan sosyal destek düzeyi ile ilişkisinin değerlendirilmesi amaçlanmıştır.

Gereç ve Yöntem: Bu çalışma, Eskişehir il merkezinde öğrenim gören 2937 lise öğrencisi üzerinde yapılan kesitsel tipte bir araştırmadır. Çalışmada kullanılan anket formu, öğrencilerin bazı sosyodemografik özelliklerini, siber zorbalık ile ilişkili olduğu düşünülen bazı değişkenleri, Siber Zorbalık Envanteri-II'nin sorularını ve Çok Boyutlu Algılanan Sosyal Destek Ölçeğinin sorularını içermektedir. Verilerin normal dağılıma uygunluğu Shapiro-Wilk testi ile yapılmıştır. Analizler için Ki-kare testi, Lojistik Regresyon Analiz (Backward Wald) ve Mann Whitney U testi kullanılmıştır.

Bulgular: Çalışmamızda lise öğrencileri arasında siber zorbalık sıklığı %65,3 olarak saptanmıştır. Erkeklerde, ruhsal bir hastalık öyküsü olanlarda, internet kullanım süresi uzun olanlarda, sosyal bir medya hesabı olanlarda, internet ortamında kendini daha güçlü hissedenlerde siber zorbalık sıklığı artış göstermektedir. Yüksek aile desteği olan öğrencilerin ise siber zorbalık sıklığının daha düşük olduğu tespit edilmiştir.

Sonuç: Siber zorbalık lise öğrencilerinde önemli bir halk sağlığı sorunudur. Siber zorbalığın önlenmesi ve tespit edilmesi amacıyla öğrencilere, ebeveynlere ve öğretmenlere yönelik eğitimlerin yapılması ve farkındalıkların arttırılması sağlanmalıdır. Aile başta olmak üzere çocuklara tüm çevresi tarafından gerekli sosyal destek sağlanmalıdır.

Anahtar Kelimeler: Siber zorbalık, Sosyal destek, Lise öğrencileri

Corresponding author/İletişim kurulacak yazar: sevalclskn@gmail.com

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INTRODUCTION

Using the Internet, which provides many opportunities such as easy access to desired information, playing games and chatting with friends, is becoming more common especially among children and young people. The internet provides users with an environment where they can exhibit some hostile and aggressive behavior as well as fun and harmless behavior. Therefore, it has brought along various problems besides the many benefits it offers to individuals. One of the problems that adolescents and children are exposed to is cyberbullying (1).

Cyberbullying is defined as a hostile or aggressive behavior that individuals or groups perform in a repetitive manner with the aim of harming or disturbing others through electronic or digital media (1). Cyberbullying and peer bullying are similar in that they contain repetitive and aggressive behavior. The difference between cyberbullying and peer bullying is, in peer bullying, aggressive behavior depends on power difference, but this is not the case with cyberbullying (2). In cyberbullying, the victim is often an individual who cannot easily defend himself. Cyberbullies use technological devices such as embarrassing, humiliating, harassing, intimidating or threatening the victims via web pages, text messages, social networks and emails (3). The behaviors of cyberbullying are direct and indirect. Direct cyberbullying is a type of cyberbullying in which the victim is directly involved, such as sending infected files, sending negative content (pictures, videos, etc.), threatening. Indirect cyberbullying behavior can occur without the victim's knowledge, such as gossiping about a person, spreading rumors, pretending to be someone else, revealing information or pictures about someone (4).

The major risk factors known for cyberbullying are; being male, prolonged use of the internet, previous exposure to cyberbullying, low self-esteem and the presence of some mental disorders (5-7). In some studies, it was reported that the prevalence of cyberbullying among young people varies between 10.3% and 34.8%. The incidence of cyberbullying among adolescents in the study conducted in Turkey is between 6.4% and 47.6% (10, 11).

Cyberbullying has become an important public health problem as it negatively affects the mental health and well-being of young people (12). Studies have reported that individuals exposed to cyberbullying have higher levels of substance use, depression, suicidal thoughts and behavior, lower school success, and these students have problems with school attendance (13, 14). Cyberbullying causes significant economic losses in addition to the problems it creates in the individual. A New Zealand study reported that cyberbullying costs 444 million dollars annually (15).

Cyberbullying is associated with the individual's relationships with its social environment and perceived social support from the surroundings (16, 17). Farmer&Farmer has defined social support as "processes of social exchange that contribute to the development of individuals' behavioral patterns, social cognitions, and values" (18). In a study by Calvete et al. it is reported that cyberbullying increases when adolescents have reduced perceived social support level from their environment (19).

The aim of this study is to determine the prevalence of cyberbullying among high school students and some variables thought to be related to cyberbullying and to evaluate the perceived social support level.

MATERIAL AND METHOD

The study is a cross-sectional study conducted on the high school students in Eskişehir from 01 April 2018 till 31 July 2018. Before conducting the study, the approval of the ethics committee and the Eskişehir Provincial Directorate of National Education was obtained.

According to the data of Eskişehir Provincial Directorate of National Education; approximately 40,000 students are studying in 40 high schools in Eskişehir. The sample size was calculated as 1040 with 50% prevalence, 95% confidence interval and 3% margin of error. Since our study uses a cluster sampling method, the design effect of 2 is applied. Therefore, the sample size was increased to 2080. Each high school was accepted as a cluster and the schools included in the study were determined by drawing lots. The total number of students in the selected schools is 3547.

A questionnaire was prepared by using the literature in accordance with the aim of the study (6-9). The questionnaire included some sociodemographic characteristics of the students, some variables thought to be related to cyberbullying, the questions of Revised Cyberbullying Inventory-II (RCBI-II) and the questions of the Multidimensional Perceived Social Support Scale (MPSSS).

The necessary permissions and appointments were obtained from the administrations of the schools to collect data.

The necessary permissions and appointments were obtained from the administrations of the schools to collect data. On the pre-organized days and hours, the students were gathered in their classes with the help of school counselors. The students were informed by the researchers of the subject and purpose of the study and filled the pre-prepared questionnaires. The study group consisted of 2937 students (82.8%) who were present in the schools and accepted to participate in the study. The study was conducted totally on a voluntary basis.

Revised cyberbullying inventory-II

It was developed by Erdur-Baker and Kavşut in 2007 in order to evaluate the levels of cyberbullying and revised twice by Topçu and Erdur-Baker in 2010 and 2018 (20, 21). The scale is made up of 10 Likert type questions. The answers given to the questions are evaluated as "no" 1 point, "once" 2 points, "2-3 times" 3 points and "more than 3 times" 4 points. The scores that can be obtained from the scale vary between 10-40, and those who score 11 and above are accepted as cyberbullies.

Multidimensional perceived social support scale

MPSSS was developed by Zimet et al. so as to assess the perceived social support levels of the students (22). Validity and reliability study of the MPSSS in Turkish was conducted by Eker and Arkar in 2001 (23). The 7-point Likert-type scale consists of 12 questions and has 3 sub-dimensions: Family Support (4 items), Friend Support (4 items) and a Significant Other Support (4 items). The answers given to the questions ranges between "very strongly disagree" 1 point and "very strongly agree" 7 points. The scores that can be obtained from each sub-dimension vary between 4-28 and the total scores from the scale vary between 12-84. The level of perceived social support increases with the scores obtained from both the sub-dimensions and the total of the scale.

The mental states of the students were investigated with the questioned "Do you have any mental disorders known in your past?". Students were informed about personality types. If they are fussy, excited, impatient they are asked to choose type A, if they were quiet, calm, patient, they were asked to choose type B.

Statistical analysis was performed with *IBM Statistical Package for the Social Sciences* (SPSS) *version* 15.0. The frequency values were presented as in number and percentage (n, %). The average values were presented as mean and standard deviation (x±sd) and maximum and minimum values (max, min). The conformity assessment of the data's normal distribution was made by the Shapiro-Wilk test. The Chi-square test, Logistic Regression Analysis (Backward Wald), the Mann Whitney U test and the Kruskal-Wallis test were used for analysis. The p value of $p \leq 0.05$ was accepted for statistical significance.

RESULTS

In our study, 54.3% (n=1595) of the students were male and 45.7% (n=1342) were female. Their ages ranged from 13 to 20 years with a mean age of 16.0±1.23 years. The majority of the students were studying in 9th and 10th grades in Anatolian high schools and the most common income level was stated as moderate. The prevalence of cyberbullying was 65.3% (n=1917). Cyberbullying was found to be higher among students who were studying at Anatolian High School (p=0.001), were male (p=0.020), had type A personality (p=0.001), and whose mother and father had high school and above education level (p=0.001). Table 1 shows the distribution of cyberbully and non-cyberbully groups according to some socio-demographic characteristics.

In this study, 11.6% of the students had a history of mental disorder, 39.9% use the internet for 3-6 hours daily, 85.5% use internet every day, 78.7% had their own room at home, 87.0% of them had their own mobile phones, 97.4% of them stated that they had a social media account. In the study group, it was found that the frequency of WhatsApp users was 28.3%, Instagram users was 27.2%, Facebook users was 19.7% and Snapchat users was 14.7%.

Table 2 shows the distribution of cyberbullying and non-cyberbullying in the study group according to some variables that are thought to be related to cyberbullying level.

The prevalence of cyberbullying was higher in students with a history of mental disorder (p=0.001), who spent more hours on the internet (p=0.001), with higher daily internet usage, who have their own room in the house (p=0.010) and who have their own mobile phones (p=0.007). Frequency of cyberbullying was found to be high in those who had social media accounts, who accepted friendship requests of people they didn't know on social networks, who had more friends on social networks, who felt more powerful than real life on social networks, and who had a history of having problems with someone on the internet.

The results of the Logistic Regression Analysis, which were formed with the variables found to be related to cyberbullying in the analyzes (gender, parental education status, personality type, history of mental disorder, internet usage time per day, having own room at home, having own cell phone, presence of a social media account, accepting friendship of people who they do not know on social networks, number of friends on the social network compared to social life, feeling more powerful than real life on social networks, having a problem with someone on the internet) are given in Table 3.

In the multiple regression analysis, the probability of cyberbullying was 1.29 times higher (CI=1.06-1.57) for those whose mothers' education level was secondary school and above, 2.34 times (CI=1.62-3.38) for those with type A personality, 1.78 times (CI=1.39-2.27) for those with a history of any mental disorder, 1.62 times (CI=1.30-2.02) for those with social media accounts, 1.40 times (CI=1.13-1.74) for those who have more friends on a social network compared to social life and 2.48 times (CI=1.99-3.10) for those who felt more powerful than real life on social networks.

Table 1: Distribution of cyberbully and non-cyberbully groups according to some sociodemographic characteristics.

Sociodemographic characteristics	Cyberbullying		Total	Test value
	No	Yes		
	n (%)[a]	n (%)[a]	n (%)[b]	X^2; p
High school				
Anatolian High School	536 (31.5)	1163 (68.5)	1699 (57.9)	**18.038;0.001**
Vocational High School	353 (39.3)	546 (60.7)	899 (30.6)	
Imam Hatip High School	131 (38.6)	208 (61.4)	339 (11.5)	
Grade				
9^{th}-10^{th}	596 (33.8)	1169 (66.2)	1765 (60.1)	1.804;0.179
11^{th}-12^{th}	424 (36.2)	748 (41.6)	1172 (39.9)	
Age group (year)				
≤15	328 (32.6)	678 (67.4)	1006 (34.3)	3.610; 0.307
16	288 (36.5)	501 (63.5)	769 (26.8)	
17	238 (34.7)	447 (65.3)	681 (23.3)	
≥18	166 (36.3)	291 (63.7)	457 (15.6)	
Gender				
Female	496 (37.0)	846 (63.0)	1342 (45.7)	**5.423; 0.020**
Male	524 (32.9)	1071 (67.1)	1595 (54.3)	
Type of personality				
Type A	399 (30.4)	913 (69.6)	1312 (44.7)	**19.502;0.001**
Type B	621 (38.2)	1004 (61.8)	1625 (55.3)	
Family type				
Nuclear	855 (35.3)	1569 (64.7)	2424 (82.5)	3.328; 0.189
Extended	110 (34.2)	212 (65.8)	322 (11.0)	
Fragmented	55 (28.8)	136 (71.2)	191 (6.5)	
Mother's education level				
Secondary school and lower	728 (37.4)	1216 (62.6)	1944 (66.2)	**18.756; 0.001**
High school and above	292 (29.4)	701 (70.6)	993 (33.8)	
Father's education level				
Secondary school and lower	520 (38.7)	824 (61.3)	1344 (45.8)	**17.152; 0.001**
High school and above	500 (31.4)	1093 (68.6)	1593 (54.2)	
Family income status				
High	363 (35.4)	661 (64.6)	1024 (34.9)	1.457; 0.483
Middle	638 (34.6)	1208 (65.4)	1848 (62.9)	
Low	19 (28.4)	48 (71.6)	67 (2.3)	
Total	1020 (34.7)	1917 (65.3)	2937 (100.0)	

a: row percentage b: column percentage

The average score of Multidimensional Perceived Social Support Scale in the study group was 58.67±17.03 (min=12; max=84). The mean score of MPSSS sub-domains was 21.61±6.56 (min=4; max=28) for family support, 20.60±6.95 (min=4; max=28) for friend support, and 16.75±8.43 (min=4; max=28) for significant other support. The prevalence of cyberbullying was lower in students with higher family support. No relationship

Table 2: Distribution of cyberbullying and non-cyberbullying in the study group according to some variables thought to be related to cyberbullying level

Some variables thought to be related to cyberbullying	Cyberbullying			Test value X^2; p
	No n (%)[a]	Yes n (%)[a]	Total n (%)[b]	
Mental disorder history				
Yes	68 (20.0)	272 (80.0)	340 (11.6)	**36.801; 0.001**
No	952 (36.7)	1645 (63.3)	2597 (88.4)	
Internet usage time per day				
≤ 3 hours	471 (46.5)	541 (53.5)	1012 (34.5)	**106.181;0.001**
3-6 hours	368 (31.4)	803 (68.6)	1171 (39.9)	
>6 hours	181 (24.0)	573 (76.0)	754 (25.7)	
Frequency of internet usage				
Everyday	801 (31.9)	1711 (68.1)	2512 (85.5)	**106.181; 0.001**
2-3 times a week/2-3 times a month	219 (51.5)	206 (48.5)	425 (14.5)	
Having their own room at home				
Yes	775 (33.5)	1535 (66.5)	2310 (78.7)	**6.641; 0.010**
No	245 (39.1)	382 (60.9)	627 (21.3)	
Having their own mobile phone				
Yes	643 (37.6)	1067 (62.4)	1710 (88.1)	**7.235;0.007**
No	102 (44.3)	128 (55.7)	230 (11.9)	
Restriction of internet use by the family				
Yes	355 (36.8)	609 (63.2)	964 (32.8)	2.782;0.095
No	665 (33.7)	1308 (66.3)	1973 (67.2)	
Having social media account				
No	979 (34.2)	1882 (65.8)	2861 (97.4)	**12.712; 0.001**
Yes	41 (53.9)	35 (46.1)	76 (2.6)	
Accepting friendship requests of people they don't know in social media				
Yes	234 (23.1)	780 (76.9)	1014 (34.5)	**92.764; 0.001**
No	786 (40.9)	1137 (59.1)	1923 (65.5)	
Number of friends in social network compared to social life				
More	335 (28.1)	858 (71.9)	1193 (40.6)	**40.495; 0.001**
Same	445 (40.3)	660 (59.7)	1105 (37.6)	
Less	240 (37.6)	399 (62.4)	639 (21.8)	
Feeling more powerful than real life in social networks				
Yes	246 (26.8)	672 (73.2)	918 (31.3)	**37.064;0.001**
No	774 (38.3)	1245 (61.7)	2019 (68.7)	
Problem with any person on the internet				
Yes	195 (18.0)	890 (82.0)	1085 (36.9)	**213.142;0.001**
No	825 (44.5)	1027 (55.5)	1852 (63.1)	
Total	1020 (34.7)	1917 (65.3)	2937 (100.0)	

a: row percentage b: column percentage

Table 3: Results of Logistic Regression Analysis with variables found to be related to cyberbullying (last step).

Variables	ß	SE[a]	p	OR[b]	%95 CI[c]
Mother's education level (reference: Secondary school and lower)					
High school and upper	0.255	0.100	**0.011**	1.290	1.060-1.570
Type of personality (reference: Type B)					
A type	0.852	0.188	**0.001**	2.344	1.622-3.388
Mental disorder history (reference: No)					
Yes	0.577	0.124	0.001	1.780	1.396-2.270
Having any social media account (reference: No)					
Yes	0.486	0.124	**0.001**	1.625	1.307-2.021
Number of friends in social network compared to social life (reference: Same)					
More	0.340	0.111	**0.002**	1.405	1.131-1.747
Feeling more powerful than real life in social networks (reference: No)					
Yes	0.911	0.113	0.001	**2.488**	**1.992-3.107**
Constant	-0.700	0.126	0.001	-	-

SE[a]: Standard error, OR[b]: Odd's ratio, %95 CI[c]: Confidence interval

Table 4: The scores obtained from the Multidimensional Perceived Social Support Scale subdomains of the study group with and without cyberbullying.

Cyberbullying	Perceived social support subdomain		
	Family support Median (min-max)	**Friends support** Median (min-max)	**Significant other support** Median (min-max)
No	25.0 (4.0-28.0)	22.0 (4.0-28.0)	16.0 (4.0-28.0)
Yes	23.0 (4.0-28.0)	22.0 (4.0-28.0)	17.0 (4.0-28.0)
Total	23.0 (4.0-28.0)	22.0 (4.0-28.0)	16.0 (4.0-28.0)
Test value (z; p)	**5.865; 0.001**	0.180; 0.857	**4.134; 0.001**

was found between the subdomains of friends support. The significant other support of students increases the frequency of cyberbullying. No correlation was found between the cyberbullying and total score of the MPSSS (r=0.012, p=0.513).

Table 4 shows the scores obtained from the Multidimensional Perceived Social Support Scale subdomains of the study group with and without cyberbullying.

DISCUSSION

Cyberbullying is an important public health problem because of violent behavior such as threats and insults against their peers in students, adversely affecting social relations with others (24). Social support is a key element for the prevention and coping with the increasing cyberbullying (20, 25).

The prevalence of cyberbullying among high school students was 65.3%. Studies show that approximately 10-75% of school-age children are cyberbullies (26-28). The reasons for the different results reported in various studies include the fact that the diagnostic methods used in the studies are not standardized and that the individuals making up the population study have different socioeconomic and cultural characteristics.

It is known that males are more prone to traditional bullying owing to their gender's role, thus cyberbullying is more likely to occurs in males as well (21). Similar to our result, it's been reported in many studies that males take part in cyberbullying more than females (27, 29-31). In a study by Keith and Martin, cyberbullying was reported to be higher among female students (32). On the other hand, Erdur-Baker and Kavşut reported that there was no difference between the genders (20). The differences

in the results may be due to the fact that cyberbullying has different aspects than traditional bullying. Females are vulnerable when verbal bullying against their female peers, an the roles assigned to females and males vary according to society.

It is possible that students with a high level of parental education level are less likely to become cyberbullies by directing them toward safer use of the Internet (33). However, in our study, the prevalence of cyberbullying was found to be higher in parents with high school and above education level. Makri-Botsari and Karagianni reported that there was no relationship between the parental education level and cyberbullying prevalence (34). If parents with high education levels use technological devices frequently due to their busy work lives, it can be thought that the child can see them as a role model. In this case, if the child uses the technological devices incorrectly, it may increase the likelihood of cyberbullying.

The cyberbullying is expected to increase as internet usage time increases (20). In our study, it was realized that the cyberbullying increased as internet usage time increased. Similar results have been reported in the literature (20, 27). There is an increase in interest in social media accounts among students as internet usage increases (35). In the study group, cyberbullying was higher among students with a social media account.

It is possible that mental disorders such as depression, behavior disorder and anti-social personality may lead to cyberbullying due reasons ayrı such as making it difficult for young people to adapt to society and resulting in aggressive behavior (36, 37). In our study, cyberbullying was higher in students with a history of a mental disorder. Similar results have been also reported in some studies (38-40).

Yaman and Peker reported that those who felt better and stronger on the internet, who had a good time, and those who improved their social relations more easily tended to cyberbullying (41). Similarly, in our study, the prevalence of cyberbullying was found to be 2.3 times higher in those who felt stronger in social networks than in real life. Similar results have been reported in the literature (42, 43). It is possible for students to feel more powerful on social networks and increase their tendency to be cyberbullies because they can easily say what they normally couldn't tell each other in real life and pretend to be someone else.

It is clear that those who are cyberbullies have poor social adaptation, have difficulty in making friends, have poor relations with their classmates and therefore need more social support (31). Studies have been reported that those with negative social relations have a higher tendency to become a cyberbully (26, 29). It can be said that it has a protective effect from cyberbullying as it provides reassurance, positive effects and self-efficacy if social support shows continuity. In our study, it was found that the frequency of cyberbullying was lower among the students whose family support was reported to be high. In a study conducted by Dehue et al. the cyberbullying among individuals with higher family support was lower (44).

Ritakallio et al. reported that adolescents with speacial human support had less depression and antisocial behavior (45). Consequently, cyberbullying, which is closely related to mental disorders, is expected to be less common in individuals with significant other support. In our study, it was found that significant other support increases cyberbullying. In a study by Heiman, Olenik-Shemesh and Eden, it was reported that students without significant other support were more likely to cyberbully (25). Because a particular definition of special person differs from person to person, it may have caused different interpretations.

Limitations and strengths

Since this study is a cross-sectional study, it is limited in revealing the cause-effect relationship. The study was conducted on a sample group. Therefore there may be a lack of representation due to the selection of the clustering sampling method. But the design effect of 2 was applied and the sample size was increased to limit the lack of representation. In this study, it was not possible to evaluate cyber victimization because the necessary permissions could not be obtained. Only cyberbullying was assessed. However, this study may be accepted as one of the few studies that investigated the cyberbullying issue among adolescents in Turkey. Additionally, conducting this study on 14 different schools, and on a sample size of nearly 3000 students would have strengthened our study.

CONCLUSION

Cyberbullying is an important public health problem among high school students. Some variables were founded to be related to cyberbullying (male gender, A-type personality, high parental education level, history of mental disorder, high internet usage time, presence of own room, presence of own cell phone, presence of a social media account, unfamiliarity in social networks, friendship, having more friends on social networks than in real life, feeling stronger on the internet, having a problem with someone on the internet, low family support). The policy makers should work on promoting a healthier internet environment for the students. In addition, cyberbullying is less common among students with high family support. In order to prevent and detect cyberbullying, training and awareness-raising should be provided for students, parents and teachers. Families, especially the children, should be provided with the necessary social support by the relevant authorities. Further studies are also needed to reveal the relationship between cyberbullying and social support.

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Informed Consent: Written consent was obtained from the participants.

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